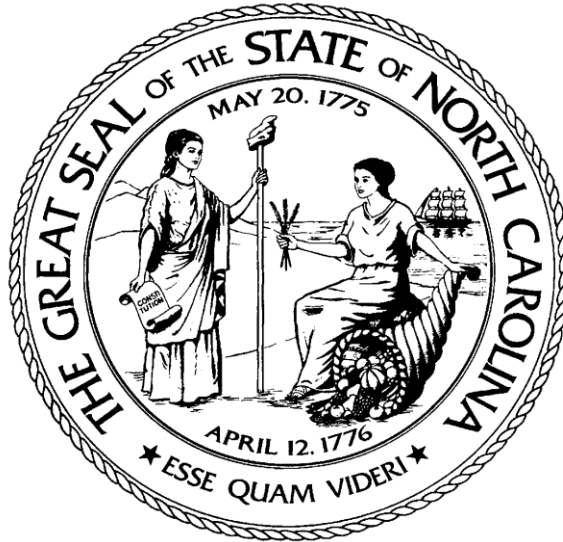


**CONTINUATION REVIEW OF PROGRAMS
MATERNAL AND CHILD PROGRAMS
FINAL REPORT**

SL 2015-241, Section 6.20.(d)



Report to

The Fiscal Research Division

By

**North Carolina
Department of Health and Human Services**

April 1, 2016

Table of Contents

Executive Summary	3
Introduction	5
<ul style="list-style-type: none">- Integration of Maternal and Child Health Programs in DHHS- 2015 Legislative Session Priorities Around Maternal and Child Health- Impacts on the Health of Mothers and Their Babies- DHHS Initiatives Addressing Maternal and Child Health<ul style="list-style-type: none">DHHS' 2015-2016 Initiative - Birth Outcomes and Infant MortalityDHHS' Initiatives – Child Health Ages Birth to Five- Using Evidence to Guide Decision-Making	
Current Environment.....	17
Program Performance.....	18
Link between Funding/Resources and Statewide/Societal Impact.....	19
Program Justification.....	21
Recommendations to Improve Efficiency and Effectiveness.....	22
External Factors.....	24
Appendices.....	26
<ul style="list-style-type: none">- Appendix 1: Detail on DHHS Maternal Health Programs- Appendix 2: Detail on DHHS Child Health Programs- Appendix 3: Chart of DHHS Program Links between Funding/Resources and Statewide/Societal Impact- Appendix 4: Resources	

Executive Summary

Session Law 2015-241, Section 6.20 requires the Department of Health and Human Services (DHHS) to complete a continuation review of its maternal and child health programs and to report its findings to the Fiscal Research Division (FRD) of the North Carolina General Assembly no later than April 1, 2016.

The Secretary of the Department of Health and Human Services (DHHS) is the agency head responsible for DHHS' programs addressing maternal and child health. Though programs described in the full report are organizationally located in the Division of Medical Assistance (DMA), the Division of Public Health (DPH), and the Division of Mental Health, Developmental Disabilities, and Substance Abuse Services (DMHDDAS), these divisions' staff ensure integration of programs through a variety of activities which are described in detail in the full report. The DHHS Deputy Secretaries further ensure cross divisional collaboration through formal interagency agreements in place for greater than 20 years, as well as through multiple informal pathways. In aggregate, the integration of this work strives for a seamless experience for citizens receiving services in their communities.

The State's 2015 legislative session placed an emphasis on maternal and child health, focusing on three broad goals: (1) Lowering the State's infant mortality rate; (2) Improving birth outcomes; and (3) Improving the overall health status of children ages birth to five. During the session, legislators sought clarity regarding which existing programs addressing mother and child health are the most effective (and might be expanded in scope or geographical reach) and which are the least effective (and might be eliminated). Providing such clarity is challenging since health itself is a complex interaction of biological, social, economic, and other factors. The impacts of these factors on the health of mothers and their babies are well documented in research, are based on a life course perspective, and are described in detail in the report section titled *"Impacts on the Health of Mothers and Their Babies"*. These impacts can be summarized as follows: **Improving health outcomes for mothers and children requires wholesale systems change. Systems change requires investment and commitment from diverse health and non-health partners, and it does not occur over a short time frame.**

Several additional complex factors further limit this continuation review study and confound the ability to provide such clarity. They are detailed in the full report's section titled *"2015 Legislative Session Priorities Around Maternal and Child Health"*.

By design and secondary to these factors, for State Fiscal Years (SFY) 2015-2017, DHHS will address birth outcomes, child health, and infant mortality by focusing not on a statewide roll out of interventions but instead focusing on targeted interventions in specific geographic areas for specific populations (*see report section titled "DHHS Initiatives Addressing Maternal and Child Health"*).

These efforts include, but are not limited to:

- DPH is currently completing contract work to ensure July 1, 2016 start dates for contracts to local health departments (LHDs) following a **competitive grants process awarding \$2.5 million in funds for LHDs to address the three priority areas targeted in the 2015 legislative session.**

- Based on the State’s high infant mortality rates, **DHHS Secretary Brajer has made addressing low birth weight and infant mortality one of four priority areas for the Department in SFY 2016-2017.**
 - An Infant Mortality Summit was convened on March 24, 2016. This summit brought public and private partners in women’s and children’s health together to examine current best practices in addressing infant mortality in our state, as well as how to best leverage existing and future public and private resources dedicated to these efforts.
 - DHHS’ vision for this Infant Mortality Initiative consists of the following components:
 - A healthy community depends on healthy births, and healthy births depend on prevention and wellness before, during, and after pregnancy.
 - We want to help everyone who wants to have children have a healthy pregnancy.
 - We want to help everyone who is sexually active and does not want to be pregnant.
 - We want to engage men and women and communities in this conversation.
 - Existing programs in DHHS’ DMHDDSAS, DMA, and DPH will support evidence-based interventions and best practices around low birth weight and infant mortality for Medicaid-eligible and non-Medicaid eligible mothers and children in our state.
 - The statewide Perinatal Health Strategic Plan was also released in March 2016. It addresses the needs of women, children and the family unit by focusing on Improving Health Care for Women; Strengthening Families and Communities (including father involvement); and Addressing Social and Economic Inequities.
- **DHHS’ vision for its programs supporting the health of children ages birth to five is multi-faceted, and its components are outlined in the report section titled “DHHS’ Initiatives – Child Health Ages birth to five”.** The components of this vision broadly address evidence-based screening and referrals for the physical and mental health of mothers and children; promoting statewide awareness of the impacts of alcohol, tobacco and other substances on the health of mothers, infants and children; ensuring families and providers understand best practices in preconception and prenatal care and child health, including the importance of prenatal care and preventative care, as well as how to access DHHS programs and services throughout the state; ensuring coordination of care for women and their children; and promoting safe and healthy environments for families.
- As directed by guidance from FRD, detailed information for all DHHS’ programs supporting the health of mothers and their children ages birth to five is located in the report’s *Appendix 1 (Maternal Health Programs)* and *Appendix 2 (Child Health Programs)*. Information is provided about each program’s goals, activities, funding, program performance, and other requirements of the continuation review, including, where applicable, some program specific recommendations.

Introduction

Session Law 2015-241, Section 6.20.(a) describes the legislatively enacted Continuation Review Program (the Program) which is intended to assist the General Assembly in reviewing funds, agencies, divisions, and programs financed by State government, and to assist the General Assembly in determining whether to continue, reduce, or eliminate funding for them.

The legislation along with additional guidance from the Fiscal Research Division (FRD) of the North Carolina General Assembly further requires State departments and agencies identified for the Continuation Review Program to report on preliminary findings of the continuation review to the Fiscal Research Division no later than December 1, 2015, and to submit a final report to the Fiscal Research Division no later than April 1, 2016. Continuation review reports are required to include the following information:

- (1) A description of the fund, agency, division, or program mission, goals, and objectives, including statutorily required functions and functions performed without specific statutory authority.
- (2) The performance measures for the fund, agency, division, or program and the problem or need addressed.
- (3) The extent to which the fund, agency, division, or program objectives and performance measures have been achieved.
- (4) A detailed accounting of all sources of funds for the fund, agency, division, or program.
- (5) Recommendations for statutory, budgetary, or administrative changes needed to improve efficiency and effectiveness of services delivered to the public.
- (6) The consequences of discontinuing funding.
- (7) Recommendations for improving services or reducing costs or duplication.
- (8) The identification of policy issues that should be brought to the attention of the General Assembly.
- (9) Other information necessary to fully support the General Assembly's Continuation Review Program along with any information included in instructions from the Fiscal Research Division.

Whereas DHHS offers an array of services that are intended to improve birth outcomes and children's health, DHHS is reporting on programs from the divisions outlined by FRD across the Divisions of Medical Assistance, Public Health, and Mental Health, Developmental Disabilities and Substance Abuse Services. FRD provided guidance on components to be included in this Final Report due April 1, 2016.

Unless otherwise noted, information on performance measures and funding sources for programs included in the review is provided for State Fiscal Year (SFY) 2014-2015. Funding sources provided do not include non-DHHS resources. Many programs may be referenced with their associated DHHS Open Window Service, since some Open Window Services contain multiple programs. Full time equivalent (FTE) estimates are made in cases where positions serve multiple Open Window Services' programs.

Integration of Maternal and Child Health Programs in DHHS

The Secretary of the Department of Health and Human Services (DHHS) is the agency head responsible for DHHS' programs addressing maternal and child health. Programs described in this report are organizationally located in the Division of Mental Health, Developmental Disabilities, and Substance Abuse Services (DMHDDSAS); the Division of Public Health (DPH); and the Division of Medical Assistance (DMA). However, these divisions' staff ensure integration of programs through a variety of activities.

The DMHDDSAS programs in this report focus on the comprehensive substance treatment needs of pregnant women and women with children, in accordance with Substance Abuse Prevention Treatment Block Grant requirements, including arranging for appropriate behavioral health and primary and preventative care needs of their children. Such referrals are customized, based on the child's needs, and coordinated by the substance abuse disorder provider working with the mother to strive for seamless services for both mother and child. DMHDDSAS provides oversight to the Local Management Entities/Managed Care Organizations (LME/MCOs) who contract with non-profit agencies for comprehensive evidence-based treatment services for pregnant and parenting women with children located across the State; and through a referral and capacity management system jointly funded by DMHDDSAS and DPH, assures pregnant women and women with young children have priority access to residential treatment statewide. DMHDDSAS also provides statewide community education and awareness information on Fetal Alcohol Spectrum Disorders and other teratogens to pregnant women, women of child-bearing age, their significant others, and the professionals who work with them through the NC Fetal Alcohol Prevention Program.

DPH carries out its responsibilities through State managed programs, 85 Local Health Departments (LHDs), and contracts with multiple statewide health partner organizations. Programs use evidence-based or evidence-informed strategies or interventions, or nationally accepted best practices. DPH's programs that provide services directly to citizens are frequently administered by a local agency, such as the LHD. These services address the health of the mother, including preconception and interconception health, as well as the health of children ages birth to five. When appropriate for the mother or child, LHDs link clients to other community resources through the strength of care managers and other LHD staff who understand the individual needs of a mother and her child. These LHD staff understand the resources their communities have available to address maternal and child health outcomes.

DMA ensures Medicaid beneficiaries can access maternal and child health services covered by Federal Law or the NC State Plan. Likewise, North Carolina Health Choice (NCHC) beneficiaries have access to child services and if a NCHC beneficiary becomes pregnant, she becomes eligible for maternity services through the Medicaid Pregnant Women Program (MPW). Using state dollars, and leveraging federal dollars, DMA contracts with vendors to deliver Pregnancy Medical Home services, or services are provided through interagency agreements with DPH for Care Coordination for Children (CC4C) and/or Pregnancy Care Management. DMA oversees the clinical and financial deliverables and monitors for federal and state compliance.

Health Check is North Carolina Medicaid's program of well-child screens for its beneficiaries under 21 years of age. Offered at intervals recommended by the American Academy of Pediatrics, a *Health*

Check visit includes a complete physical exam, all routine vaccinations, hearing, vision, dental, developmental/behavioral health screens and any necessary treatment referrals. These services are the preventive care portion of the Early and Periodic Screening, Diagnosis and Treatment (EPSDT) benefit specified in federal Medicaid law. The comprehensive and individualized “EPSDT” benefit package is designed to assure that eligible children and youth receive the preventive visits, early care, acute care and ongoing, long-term treatment and services they need so that health problems are averted, or diagnosed and addressed as early as possible.

DMHDDSAS and DPH have maintained an interagency agreement for over 20 years to jointly fund the Perinatal Substance Use Project to support pregnant women and women with dependent children, family members, and professionals to identify substance use disorder treatment services and supports statewide. Additionally, this project provides training and technical assistance to Local Health Departments, pregnancy care managers, treatment providers and other stakeholders in the community regarding perinatal substance use and treatment resources. The State’s capacity management system to ensure timely access to care for this priority population is a requirement of the Substance Abuse Prevention Treatment Block Grant administered by DMHDDSAS. The capacity management system also addresses the DPH’s Women’s and Children’s Health Section mission to assure, promote and protect the health and development of families with an emphasis on women, infants, children and youth.

Likewise, a DPH/DMA interagency agreement in place for greater than 20 years ensures outcomes for shared programs are achieved by establishing guidelines for funding levels and guidelines for addressing targeted health conditions.

Examples of DHHS’ interagency collaboration include, but are not limited to, the following:

- DMHDDSAS collaborates with the DMA Pregnancy Care Management program on the development of clinical pathways using evidence-based practices to address substance use during pregnancy, as well as the substance use screening section of the Pregnancy Care Management screening tool. There is ongoing collaboration to provide technical assistance to Pregnancy Medical Homes to implement the clinical pathways.
- DMA and DMHDDSAS participated in the DPH NC Perinatal Health Strategic Plan process with the goal of improving healthcare for women and strengthening families.
- All three DHHS Divisions provide statewide leadership and support to the Pregnancy and Opioid Stakeholders Workgroup developed to address the prevention, intervention, treatment and recovery needs of this priority population. This workgroup includes other State Agencies, non-governmental partners and local community stakeholders.

Staff from each of these DHHS Divisions addressing maternal and child health regularly collaborate with other Division staff to ensure integration of and synergy with these programs, including effectively leveraging all available resources to ensure the best stewardship of these resources while striving for a seamless experience for the citizens receiving services. As an example, Local Health Department clients receiving services from the Pregnancy Care Management or Care Coordination for Children (CC4C) programs receive the same care experience from their provider, regardless of their pay source (Medicaid or otherwise). Staff of all DHHS programs referenced in this report also

collaborate, as needed, with other state agencies outside of DHHS to improve services and supports to our state's most vulnerable citizens.

The DHHS Deputy Secretaries further ensure cross divisional collaboration within DHHS maternal and child health programs, including initiatives to address low birth weight and infant mortality in 2016. These efforts will include collaborative efforts to target areas within the State with high prevalence of infant mortality using pilot projects.

2015 Legislative Session Priorities Around Maternal and Child Health

Session Law 2015-241, Section 12E.11 allocated funding to the DHHS Division of Public Health (DPH) to implement evidence-based strategies that are proven to address three priority content areas to:

- (1) lower infant mortality rates;
- (2) Improve birth outcomes; and
- (3) Improve the overall health status of children ages birth to five.

The law appropriated \$2.5 million each year of the 2015 – 2017 biennium and requires the establishment of a competitive process to award grants to local health departments (LHDs) in State Fiscal Year (SFY) 2016-2017. DPH is assisting LHDs in preparing for the SFY 2016-2017 competitive grants process by providing planning grants in SFY 2015-2016. LHDs and their county partners also attended a Maternal and Child Health Action Institute January 6 - 7, 2016 to plan local actions that would address these three content areas. DPH released a Request for Applications (RFA) for LHDs to compete for the SFY 2016- 2017 grants, and contracts with LHDs for this work are expected to begin June 1, 2016.

- Six proposals covering 13 counties will receive funding for SFY 2016-2017.
- Based on proposals submitted, evidence-based programs which are expected to be funded in the three content areas are:
 - Reduced Infant Mortality – Ten Steps for Successful Breastfeeding and Smoking Cessation and Prevention
 - Improved Birth Outcomes – LARCs
 - Improved Health Among Children Aged Birth to Five – Triple P (Positive Parenting Program); Family Connects Home Visiting; and CEASE (Clinical Effort Against Secondhand Smoke Exposure)

During the 2015 legislative session, the Joint Legislative Oversight Committee on Health and Human Services carefully examined current health outcomes of children aged birth to five in North Carolina. Presentations were provided on this topic by staff from the UNC Gillings School of Global Public Health and from the General Assembly's Fiscal Research Division. During committee meetings, clarity was sought regarding which existing programs addressing mother and child health are the most effective (and might be expanded in scope or geographical reach) and which are the least effective (and might be eliminated).

Providing such clarity is challenging. Health itself is a complex interaction of biological, social, economic, and other factors (see subsequent section titled *"Impacts on the Health of Mothers and Their Babies"*).

For maternal and child health, several additional complex factors limit this Continuation Review study and confound the ability to provide such clarity. They are:

- **Disparities in health outcomes exist amongst certain groups.** As an example, for infant mortality, African American and American Indian populations require a focus of DHHS resources.
- **There are geographical differences in maternal and child health outcomes which must be targeted and which often exist because of racial and ethnic and rural and urban disparities.**
- **One size does not fit all.** Every evidence-based or evidence-informed strategy will not work in every community. Each community has its own unique set of partners, circumstances, and challenges and strengths around maternal and child health issues. Programs must therefore be tailored to meet specific community needs. And communities often must take different pathways to obtain the same objective. And some communities require more than a single intervention to obtain an objective. DMHDDSAS and DPH are responsive to these differences; both DHHS divisions work with community providers to choose approaches to care that are both evidenced-informed and appropriate for their specific community strengths and needs.
- **Federal funding directs DHHS to focus resources on certain programs or interventions.** Mandates for the use of federal funds occur in both specificity of diseases or outcomes which have to be addressed and sometimes in geographical areas for targeting interventions.
 - For example, the federal Title V Maternal and Child Health Block Grant requires States to use at least 60% of Block Grant funds for primary and preventive health services for children and for children with special healthcare needs.
 - Additionally, the Substance Abuse Prevention and Treatment Block Grant requires specialized services for pregnant women with substance use disorder, priority admission, a capacity management system and other procedural requirements.
- **Legislative-directed allocations from existing federal block grant funding may not always align within a planned, sustainable and cohesive approach to improvements in maternal and child health.**

Legislative-directed allocations from the federal Maternal and Child Health Block Grant (MCHBG) began in SFY 2011-2012 and have increased each year. In SFY 2011-2012, these allocations, or “carve outs,” represented 7.65% of the total MCHBG plan. By SFY 2015-2016, these carve outs had grown and represented 22.26% of the total MCHBG plan.

- Once a targeted funding item is inserted into the MCHBG plan, it may continue to be funded in subsequent years. This can impact the state’s ability to be responsive to changes in needs in the maternal and child population. And, if the state’s responsiveness is restricted in this manner, it could impact its ability to comply with federal requirements in the MCHBG.
- The majority of these MCHBG allocations have been funded by reducing existing programs. Since the allocations occur in the part of the MCHBG plan that is devoted to local projects, Local Health Departments have been impacted through reductions in maternal health, family planning and child health services. Similar impacts have also resulted in reduced funding to non-Local Health Department entities such as Healthy Beginnings community based organizations and health centers providing genetics services.

Rather than stressing a statewide roll out of interventions, DHHS' 2016 emphasis on Infant Mortality will focus on targeted interventions in specific geographic areas for specific populations (*see subsequent section titled "DHHS' 2015-2016 Initiative - Birth Outcomes and Infant Mortality"*).

Likewise, DHHS' Division of Public Health's use of Session Law 2015-241, Section 12E.11 competitive funding for Local Health Departments (\$2.5 million) will be focused and targeted to a limited geography (based on data and locations with the worst set of health outcomes and social determinants of health), and based on a limited set of evidence-based interventions.

Impacts on the Health of Mothers and Their Babies

Improving maternal and child health outcomes is neither simple nor straightforward. Causes of poor health outcomes in women and children involve multiple factors. This includes, but is not limited to:

- The availability of health and behavioral health resources (qualified providers) as well as the means to travel to appointments, including the ability to miss work (and associated wages) without fear of losing one's job.
- The health of women prior to pregnancy (a significant contributing factor to a child's health and infant mortality). Women with chronic conditions such as diabetes, hypertension, and obesity are at greater risk for poor pregnancy outcomes.
- The stresses and supports that impact women and children throughout their lives. With repeated stress in early childhood the "fight or flight" system is activated so often that it stays on, leading to changes in the structure and functioning of children's developing brains and bodies. This leaves them at higher risk for health and social problems, like asthma, diabetes, learning difficulties, obesity and increased risk of adult diseases including heart disease and cancer.

A life course perspective notes that health is an integrated continuum with various stages connected to each other. This perspective focuses on the interaction of social, environmental, and economic factors and how they contribute to health outcomes across a person's life course. A life course perspective builds on the public health research that each stage of life is influenced by the next and that social, environmental, and economic issues have an impact on individual health as well as population or community health. Intergenerational poverty and interpersonal violence victimization contribute to lifetime chronic health morbidity, including increased risk for substance use.

Such an approach is a nationally accepted means to examining and addressing health outcomes. The life course approach also takes into consideration issues of health equity. With equity, to achieve equal outcomes, the resources and services may need to be different for different populations and communities.

Examples of contextual impacts on the health of women and children are:

- ***Poverty*** – Women and children who live in poverty are more likely:
 - To have less access to nutritious foods and to environments which promote physical activity.
 - To suffer from chronic diseases and therefore experience negative health outcomes.
 - To experience difficulty accessing health resources even when they are available.

- *Jobs* – The availability of jobs which pay a living wage impacts poverty levels of women and children.
- *Affordable quality child care* – Availability of child care impacts a child’s parents’ ability to work and the quality of child care affects the developmental trajectory for that child.
- *Transportation* – Affordable and accessible transportation impacts parents’ abilities to maintain a job and to access health resources in their communities.
- *Education* – Affordable and accessible education impacts the families’ ability to thrive. This is inclusive of early childhood education that supports the growth and development of children, as well as for adults seeking to further their education in order to secure jobs that can realistically support their families.
- *Environment* – Impacts include housing, domestic violence, as well as exposure to tobacco, lead and other toxins. Parents who have experienced trauma and family substance use are at increased risk of developing substance use disorders and may require treatment to break intergenerational cycles. Lack of healthy environment also impacts recovery and the ability to live a recovery lifestyle.

Using a life course approach for examining and addressing maternal and child health outcomes also requires the efforts of not only public and private health partners in North Carolina, but also the efforts of diverse non-health partners (both public and private) in our state. Health improvement efforts should include non-health partners in sectors such as education, commerce, transportation, juvenile justice, foundations, faith entities, community action organizations, organizations addressing poverty, and culturally focused entities (such as the Commission on Indian Affairs).

The degree to which non-health partners in North Carolina are currently engaged in the health of mothers and children is varied and limited to certain sectors, programs or locales. Examples of current successful collaborations with non-health partners include:

- The DHHS Division of Public Health partners with over 10 universities (including Historically Black Colleges and Universities) to implement the preconception health peer education program. This involves training college students on maternal and child health issues, and they in turn share this information as Peer Educators with their college peers and the surrounding community. The focus is on women’s and family’s wellness to include reproductive life planning.
- DPH also partners with several faith entities in implementing a ministry of health initiative. This also involves family wellness to include community gardens and shared physical activity opportunities.
- DPH has developed a funders group which includes public and private funders who contribute to evidence-based programs focused on strengthening families and improving their abilities to successfully parent. This group includes the Kate B. Reynolds Charitable Trust, The Duke Endowment, Blue Cross and Blue Shield of NC, NC Partnership for Children and other foundation partners.
- DPH’s Children and Youth Branch’s system change efforts include partners from schools, police officers, juvenile justice, family members, parks and recreation, public transportation, libraries, and local Departments of Social Services.
- DMHDDSAS partners with universities and the AHECs to provide training and technical assistance to service providers and community partners on topics such as gender and trauma informed evidence-based treatment and how to manage opioid exposed pregnancies.

- DMHDDSAS partners with the Governors Institute on Substance Abuse, Inc., to assure a Substance Abuse and Mental Health Services Administration (SAMHSA) sponsored effort effectively trains primary care providers to do screening, brief intervention and referral to treatment (SBIRT).
- DMHDDSAS partners with the NC Administrative Office of the Courts and the Division of Social Services to enhance family focused substance abuse services and reduce system barriers to care for families involved with child welfare services.
- DMHDDSAS partners with faith based organizations and tribal communities to encourage community collaboration and evidence-based services to better meet the needs of families with children who are impacted by parental substance use.
- DMHDDSAS partners with various university and nonprofit community agencies to provide evidence-based treatment and prevention parenting services to pregnant women and women with children, including but not limited to Seeking Safety, Matrix Model, Cognitive Behavioral Therapy, and Motivational Interviewing.

In short, improving health outcomes for mothers and children requires wholesale systems change. Systems change requires investment and commitment from diverse health and non-health partners, and it does not occur over a short time frame.

DHHS Initiatives Addressing Maternal and Child Health

DHHS' 2015-2016 Initiative - Birth Outcomes and Infant Mortality

Based on 2013 North Carolina infant mortality data, DHHS Secretary Brajer has made addressing low birth weight and infant mortality one of four priority areas for the Department. The remaining three priority areas are Medicaid Reform, opioid misuse and abuse (including the associated rise in Hepatitis C virus infections), and LME-MCO (Local Management Entity-Managed Care Organizations) reform.

North Carolina was ranked 41st within the United States for infant deaths in 2013. African American women of childbearing age in our State continue to experience an infant mortality rate more than double that of the white population.

With Secretary Brajer's DHHS-wide emphasis on infant mortality, an Infant Mortality Summit was convened on March 24, 2016. This summit brought public and private partners in women's and children's health together to examine current best practices in addressing infant mortality in our state, as well as how to best leverage existing and future public and private resources dedicated to these efforts.

DHHS's vision for this Infant Mortality Initiative consists of the following components, as reflected in Secretary Brajer's remarks to the February 9, 2016 meeting of the Health and Human Services' Joint Legislative Oversight Committee:

- A healthy community depends on healthy births, and healthy births depend on preventive measures before, during, and after pregnancy.
- We want to help everyone who wants to have children have a healthy pregnancy.

- We want to help everyone who is sexually active and does not want to be pregnant.
- We want to engage men and women and communities in this conversation.

The Infant Mortality Initiative is also supported through DHHS' existing Perinatal & Maternal Substance Use Initiative. This program provides timely access and engagement of pregnant women with substance use disorders in comprehensive family-centered, trauma informed, evidenced based substance use disorder treatment. Existing program outcomes indicate that participation in these services reduces the impact of maternal and parental substance use on the health and wellbeing of women and their children and families. Through its toll free hotline professional consultation services, DHHS ensures pregnant women, families and professionals providing services to women have access to information, training and appropriate referral resources.

Additionally, through DHHS' existing Fetal Alcohol Prevention Program, statewide outreach, education and increased awareness of birth defects, developmental disabilities and behavioral problems caused by prenatal exposure to alcohol and other harmful agents will support the Infant Mortality Initiative.

DHHS' Infant Mortality Initiative will address this vision through collaborating with Local Health Departments, primary care providers, perinatal substance use disorder programs, and faith-based communities in prioritized geographical areas by focusing on evidence-based interventions and best practices around:

- Preconception care
- Smoking cessation
- Early access to prenatal care
- Pregnancy Medical Homes (for both Medicaid-eligible and non-Medicaid eligible citizens)
- The use of 17-P (alpha 17 hydroxprogesterone caproate, which reduces pre-term births)
- A focus on LARCs (Long Acting Reversible Contraceptives) to improve pregnancy spacing
- The promotion of breastfeeding

DHHS' Divisions of Mental Health, Developmental Disabilities, and Substance Abuse Services; Medical Assistance; and Public Health support these evidence-based interventions and best practices through existing programs and funding for Medicaid-eligible and non-Medicaid eligible mothers and children.

The statewide Perinatal Health Strategic Plan was also released in at the DHHS Infant Mortality Summit in March 2016 (electronic version of the Plan is undergoing formatting and will be available online in April 2016). This plan incorporates input from DHHS' Divisions of Mental Health, Developmental Disabilities, and Substance Abuse Services; Medical Assistance; and Public Health, as well as from private and public partners in women's and children's health. The Plan addresses the needs of women, children and the family unit by focusing on three goal areas:

- Improving Health Care for Women
- Strengthening Families and Communities (including father involvement)
- Addressing Social and Economic Inequities

A companion document, the North Carolina Preconception Health Strategic Plan (2014 – 2019), supplements and updates the existing 2008 – 2013 Preconception Health Strategic Plan. Both plans address the health of women before, during and after pregnancy, as well as target both men and women in preconception health strategies that can be adopted by multiple partners in women's and children's health.

DHHS' Initiatives – Child Health Ages Birth to Five

DHHS' vision for its programs supporting the health of children ages birth to five is multi-faceted and seeks to:

- Educate women, men and families, as well as medical providers about best practices in preconception and prenatal care and child health, as well as how to access DHHS programs and services throughout the State.
- Promote statewide awareness of the impacts of the use of alcohol during pregnancy to prevent developmental disabilities associated with its use.
- Provide access to primary preventive care for children in a medical home with age appropriate screening.
- Implement and promote evidence-based or best practice screening methods to refer to and inform providers when health interventions are necessary for women or children (includes maternal depression screening, domestic violence screening, child mental health screening, newborn hearing and metabolic screening, etc.)
- Ensure the care of children is coordinated across multiple public and private health partners and providers.
- Ensure children are vaccinated consistent with national best practice recommendations.
- Ensure children are screened for developmental milestones and appropriate referrals for services are made when they are not meeting these milestones.
- Promote proper nutrition for mothers and their children to ensure children have the best chance to develop, learn, and succeed in North Carolina.
- Emphasize substance use prevention, screening, intervention and treatment to promote healthy parenting and healthy families.
- Increase positive parenting skills for mothers and fathers.
- Promote safe and healthy family units to ensure families stay together in a stable and nurturing environment for children.

Detailed information about the goals, objectives, and activities of all DHHS' programs supporting the health of mothers and their children ages birth to five is located in *Appendix 1 (Maternal Health Programs)* and *Appendix 2 (Child Health Programs)*.

Using Evidence to Guide Decision-Making

In addition to addressing the reporting elements required in Session Law 2015-241, this report also identifies programs regarding whether or not they use strategies or interventions that are **evidence-based, evidence-informed, best practice, or not supported by evidence in literature**. The North Carolina Institute of Medicine (NC IOM) Task Force on Implementing Evidence-Based Strategies in

Public Health (2012) noted that, in general, programs and services that use evidence-based strategies (EBS) or interventions are more likely over time to be successful at achieving better health outcomes. The use of EBS also increases the likelihood of efficient utilization of public resources.

Nationally, public health agencies have for years evolved to use evidence-based, evidence-informed or documented best practices when choosing interventions or strategies to address the nation's most pressing public health problems. DHHS' Division of Public Health's programs are no different. Interventions are typically selected based on:

- Requirements of funding agencies to use evidence-based, evidence-informed, or documented best practices; and
- A desire to choose interventions that have already worked, that have the potential to work in North Carolina if implemented with model fidelity and that demonstrate the best stewardship of public resources.

There are varied definitions for terms describing effectiveness of programs or quality of evidence to support the use of programs. The definition of the term "evidence-based" varies across disciplines (such as medicine, social work, behavioral health, juvenile justice, early childhood education, and public health). This variety makes it difficult to assign terms of effectiveness evenly across programs which have decidedly different purposes and anticipated outcomes.

For the purposes of this report, the following definitions (and additional clarification) are used:

Evidence-based strategies or interventions

- The most common definition of Evidence-Based Practice (EBP) is "the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research." (Sackett D, 1996)
- Evidence-based practice is the integration of clinical expertise, patient values, and the best research evidence into the decision making process for patient care. Clinical expertise refers to the clinician's cumulated experience, education and clinical skills which are brought to bear so that providers can offer high-quality services that reflect the interests, values, needs, and choices of the individuals served. The patient brings to the encounter his or her own personal preferences and unique concerns, expectations, and values. The best research evidence is usually found in clinically relevant research that has been conducted using sound methodology. (SAMHSA NREPP)
- "Evidence-based strategies, including programs, clinical interventions, and policies, are those that have been evaluated and shown to produce positive outcomes." (NC IOM).
- The NC IOM further notes that evidence-based strategies should produce positive outcomes when replicated accurately and adequately.
- The SAMHSA, a division of the U.S. Department of Health and Human Services, notes that the term evidence-based is in stark contrast to "approaches that are based on tradition, convention, belief, or anecdotal evidence."

Evidence-informed strategies or interventions

- Evidence-informed strategies or interventions are “well-informed by the best available research evidence.” (World Health Organization)
- Bowen and Zwi (2005) reviewed relevant literature from health, public policy, and the social sciences, including policy analysis theory. Their publication can be summarized as follows:
 - Evidence-informed practice means ensuring that health practice is guided by the best research and information available.
 - Good evidence identifies the potential benefits, harms and costs of an intervention.
 - Evidence may be of a qualitative or quantitative nature.
 - Evidence-informed decision making models advocate for research evidence to be considered in conjunction with clinical expertise, patient preferences and values, and available resources.

Best practice

- “Best practice” is a procedure or set of procedures that is preferred or considered standard within an organization, industry, or discipline. Such practices are based on well-documented outcomes.
- Best practices are generally published as guidelines from reputable sources. As more research occurs, best practices are refined and republished across time.
- For health outcomes, sources of best practice may be the Centers for Disease Control and Prevention (CDC), or the U.S. Preventive Services Task Force (USPSTF).
- Other examples of organizations that publish best practices are the American College of Physicians (ACP), the American Congress of Obstetricians and Gynecologists (ACOG), and the American Dental Association (ADA).

Not supported by evidence in literature

- These are strategies or interventions for which there is no evidence documented in literature that indicates the intended positive outcomes can be achieved.

For strategies and interventions which are evidence-based, evidence-informed, or best practice, citations are included in the Resources section of the report.

Current Environment

For each DHHS program impacting maternal and child health, Appendices 1 and 2 provide detailed information about the following items as directed by the Fiscal Research Divisions' guidance letter dated October 23, 2015:

- Program missions, goals, and objectives
- Program activities
- Categorization as either statutory or non-statutory
- Resource allocation (funding and FTEs)

Program Performance

For each DHHS program impacting maternal and child health, Appendices 1 and 2 provide detailed performance measures and data, including information on whether or not objectives for these programs are being achieved.

- When appropriate, clarifying information is provided for programs and interventions that research evidence indicates particular timeframes in which outcomes should be expected.
- When appropriate, clarifying information is provided for programs not fully meeting stated objectives (example: steps already being taken or planned for improving program efficiency, effectiveness, and outcomes).

Links between Funding/Resources and Statewide/Societal Impact

The chart in Appendix 3 demonstrates for each DHHS maternal and child health program the logical relationship between Resources (funding), Program Activities, Outputs, Outcomes, and Statewide or Society Impact.

The assumptions and methodology used to make these linkages are straightforward. These linkages are all based on research demonstrating what actually works to improve health outcomes, as described in the section of this report titled “Using Evidence to Guide Decision-Making”. Each DHHS program has been classified as either using evidence-based strategies or interventions, using evidence-informed strategies or interventions, or using best practices defined by a reputable organization, industry, or discipline. Only one DHHS program has been identified as not supported by evidence in the literature.

For each DHHS maternal and child health program addressed in this report, references are provided in Appendix 4 to delineate the research evidence supporting determinations of evidence-based, evidence-informed, or best practice. These references support the linkages between Program Activities and Outputs or Outcomes, and ultimately Statewide or Societal Impact as displayed in the chart in Appendix 3.

In general, the links between Program Activities and ultimately Statewide or Societal Impact for DHHS programs are multiple. The following provides a few examples of such links:

- Programs that fund *Activities* that have been demonstrated by research to work in reducing the number of preterm births in a population (*Outcome*) are also expected, based on research, to reduce the number of low birth weight infants (*Outcome*). And, over time, research indicates they are expected to have the additional *Outcome* of reduction in the state’s infant mortality rate. A downstream effect of these combined *Outcomes* is decreased costs of medical care and social services in North Carolina (*Statewide/Societal Impact*). The chart in Appendix 3 identifies multiple DHHS programs that function in this manner; some examples of funded *Activities* that support these *Outcomes* and *Impacts* are:
 - The use of 17P for pregnant women to reduce preterm births (*Output* = Number of pregnant women receiving 17P).
 - The assessment of and interventions for pregnant women who use tobacco, alcohol or drugs (*Output* = Number of women who stop using tobacco, alcohol or drugs during pregnancy).
 - Activities in DHHS’ Pregnancy Medical Home that address reductions in primary Caesarean section rates among women who have not had a previous C section delivery (*Output*) are also expected to produce similar *Outcomes and Statewide/Societal Impacts* as the 2 previous examples.
- Gender specific and trauma informed evidence-based substance use disorder treatment services that have been organized in NC by the DMHDDSAS as part of a more than 20 year effort that is based on lessons learned and responsive to Substance Abuse Treatment Prevention Block Grant requirements demonstrates improvement on key domains:

- A community collaborative linking evidence-based treatment, evidence-based parenting support, and collaboration with social services and a family treatment court saw significant reduction in recidivism to child protective services for families served versus comparison.
- Gender specific and trauma informed substance abuse treatment services demonstrate a significant reduction in substance use by mothers served.
- Gender specific and trauma informed substance abuse treatment services demonstrate birth outcomes significantly better than overall for the State or projected birth outcomes if not served.
- Gender specific substance abuse treatment services engage pregnant women with prenatal care and children with pediatric and other developmental services.
- Providing information, referral, training and technical assistance to women, family members, professionals and others stakeholders for prevention, evaluation, intervention and treatment services statewide increases access to needed services and resources to prevent or provide treatment for women and their families.

Program Justification

For each DHHS program impacting maternal and child health, Appendices 1 and 2 provide rationale for recommended funding levels.

- Continued funding levels are recommended when a program uses evidence-based or evidence-informed interventions, or best practices, AND also demonstrates achievement of stated objectives or demonstrated progress (above baseline) toward stated objectives.
- Continued funding should be further evaluated for programs that do not use evidence-based or evidence-informed interventions, or best practices.

Recommendations to Improve Efficiency and Effectiveness

For each DHHS program impacting maternal and child health, Appendices 1 and 2 provide, when applicable, recommendations for improving services; recommendations for reducing costs or duplication; or recommendations for statutory, budgetary, or administrative changes to improve efficiency and effectiveness of services delivered to the public. Where applicable, information is provided about program actions that have already been taken (or are planned) to improve services, reduce costs, or improve efficiency and effectiveness.

Some examples of such recommendations include, but are not limited to the following:

- *For the Perinatal and Maternal and CASAWORKS Initiative* – Will continue efforts to inform health care and other community providers about the initiative and how to access the bed availability and referral line, to expand use of the capacity management system and better assure that women who need access to gender specific evidence-based services are aware of them and referred for treatment.
- *For the NC Childhood Lead Poisoning Prevention program* - The program will investigate options for improving the quality and timeliness of data provided by Point of Care (POC) laboratories since the availability of a POC blood lead analyzers has recently resulted in a growing number of health care provider offices also serving as blood lead laboratories. Improved data submission from these labs will promote more timely responses to remediation of lead hazards.
- *For the Triple P program* – The program is most effective when implemented to scale in a community and therefore has the greatest impact on reducing costs associated with out-of-home placements, emergency department use related to maltreatment injuries, and substantiated cases of abuse and neglect. The program will seek to complement other programs such as Strengthening Families and Incredible Years (current users of these two programs include local mental health and social services agencies and local Smart Start agencies).
- *For the WIC program* - The WIC program is in the planning phase of Electronic Benefits Transfer (EBT), which will improve program efficiencies by allowing participants to utilize payment cards instead of paper checks to obtain supplemental foods. Target date for statewide EBT implementation is 2018.

A cursory review of the material in Appendices 1 and 2 may lead the reader to assume there is duplication of services within DHHS. This is not the case. Significant integration and linkage of services occurs across DHHS divisions, with intentional efforts being made to avoid duplication of effort or services. Some examples include, but are not limited to the following:

- *For smoking cessation programs* – DMHDDSAS collaborates with the Division of Public Health – Tobacco Prevention and Control Branch and the Women’s Health Branch to address tobacco use among pregnant women with local health departments, medical practices and other healthcare providers. DMHDDSAS partners with DPH to specifically promote QuitlineNC pregnancy protocols, referral to QuitlineNC, resources for clinicians and patients as well as in coalition efforts – WATCH (Women and Tobacco Coalition for Health) and Breathe Easy NC.

- *For the provision of 17P to reduce preterm births* – Through collaboration between the Divisions of Medical Assistance and Public Health, women in our state have access to 17P regardless of whether they are Medicaid-eligible or have no ability to pay.
- *For the Pregnancy Medical Home* – The program resides in both the Division of Medical Assistance and the Division of Public Health due to funding sources. However, as the quality of these services for Medicaid-eligible pregnant women has improved, the providers of Maternal Health Clinical Services are also implementing the same evidence-based strategies to service low income women who do not qualify for Medicaid. As a result, the delivery of these services strives to be seamless for a citizen walking into a Local Health Department, regardless of the funding source for the citizen.
- *For the Healthy Beginnings program* – the program has already developed guidelines to avoid any possible duplication of services with other DHHS home visiting programs serving minority pregnant and postpartum women in the state.

Additionally, cross Departmental efficiencies are being sought for statewide promotion of all DHHS maternal and child health programs. For example, staff from the Perinatal & Maternal Substance Use Initiative are working with the DHHS Communications Office on strategies to better leverage the use social media. Best practices will be shared with other DHHS programs which might benefit from statewide promotion through social media.

Additional opportunities for improved efficiency, effectiveness and customer service for citizens and health providers in our state might also be realized as the Health Information Exchange (HIE) is further developed and implemented.

External Factors

For each DHHS program impacting maternal and child health, Appendices 1 and 2 provide, when applicable, any policy issues or other relevant information for consideration by the General Assembly.

Overarching contexts in which all DHHS maternal and child health programs are currently functioning (and factors which will impact these programs in the future) include:

Population growth trends will impact delivery of maternal and child health services in our state.

- North Carolina is currently the 10th most populous state. Between 2010 and 2020, the U.S. Census Bureau projects that our state will grow faster than in previous 10 years, increasing by nearly 11% and gaining more than one million new residents to reach a population of nearly 10.6 million.
 - This growth is projected to be highly uneven across North Carolina.
 - Virtually all (99%) of the State's growth is projected to occur in counties that belong to either metropolitan or micropolitan areas (*source: UNC Carolina Population Center; December 2015*).
 - At the same time, 30 of North Carolina's 100 counties are projected to lose population by 2020, a significant increase from seven counties that lost population between 2000 and 2010 (*source: UNC Carolina Population Center; December 2015*).
 - North Carolina's two largest urban centers—Charlotte and Raleigh—will grow faster than any other large cities in the U.S. over the next fifteen years, according to a 2014 projection from a United Nations study of world population growth (its report looks at growth in urban areas across the world, with projections to 2030).
- These trends will require continued data driven approaches to address mother and child health to ensure rural and disadvantaged communities do not fall farther behind. And specific metropolitan neighborhoods experiencing poor health outcomes cannot be ignored simply because they exist in an urban center. As previously noted, “One size does not fit all” in a State as diverse as ours when planning for and delivering critical maternal and child health programs.

Assuming current funding for DHHS maternal and child health programs is unchanged, any negative trends around social determinants of health in North Carolina will negatively impact DHHS' ability to deliver effective services to the states most vulnerable citizens.

United Health Foundation's 2015 America's Health Rankings places North Carolina 31st nationally in health. Our state's rankings in key social, educational, and economic indicators which impact our citizens' abilities to experience good health are as follows:

- Ranks 48th for difference in the percentage of adults aged 25 and older with versus without high school educations who report their health is very good or excellent.
- Ranks 27th for percentage of high school students who graduate within 4 years of starting ninth grade with a regular high school diploma.
- Ranks 36th for percentage of the population that does not have health insurance privately, through their employer, or the government (two year average). Ranks 39th for percentage of

persons younger than 18 years who live in households at or below the poverty threshold. Ranks 40th in median household income, 38th in personal per capita income, and 35th in income disparities.

- Ranks 31st in underemployment rate and 26th in annual unemployment rate.

Links between these indicators and health are more thoroughly described in the section of this report titled *“Impacts on the Health of Mothers and Their Babies”*.

Consistent with national trends, increasing demands for families to assist in elder care and in the care of adult children impact family resources, thus impacting the ability of North Carolina’s families to focus on actions they can take to improve the health of mothers and children.

APPENDIX 1
Detail on DHHS
Maternal Health Programs

17P Program

Open Window Service: Maternal Health

Current Environment

Description of Mission, Goals, Objectives and Functions:

- Preterm birth is a leading contributing factor for infant mortality and low birthweight births in North Carolina. The mission of the 17P program is to ultimately reduce infant mortality and low birthweight births in our state by reducing preterm birth.
- Research has shown that preterm birth (PTB) is reduced by the use of alpha 17 hydroxprogesterone caproate (17P) among high risk pregnant women, especially low income women.
- 17P is an intramuscular treatment administered on a weekly basis to pregnant women with a history of spontaneous preterm birth.
- 17P is an evidence-based strategy (**see Resources**) designed to reduce preterm births. It is administered by the University of NC at Chapel Hill Center for Maternal and Infant Health and is available statewide.

Program Activities:

- Funding has been used to provide 17P free of charge to North Carolina health care providers for prescriptions for eligible, uninsured pregnant women statewide along with coordination, technical assistance and educational materials.

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$52,000
GRAND TOTAL		\$52,000

No state FTEs. Service is provided through a contract.

Program Performance

Problem or Need Addressed:

- Preterm birth is a leading contributing factor for infant mortality and low birthweight births in North Carolina.
- Research has shown that preterm birth (PTB) is reduced by the use of alpha 17 hydroxprogesterone caproate (17P) among high risk pregnant women, especially low income women.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Outcome Performance Measures	Results
Provide information and technical assistance about 17P to approximately 200 maternal health providers	Contractor answered approximately 10 calls a month (90 contacts with providers) as well as gave presentations to over 100 Community Care of NC (CCNC) case managers.
Conduct telephone interviews with 30 mothers who declined 17P treatment or discontinued treatment to learn more about their reasons for their decisions and how we can better meet their needs. Translate the information learned from the interviews into actionable steps to help increase access to 17P and share these steps with Community Care of North Carolina (CCNC) and other partners	Conducted 31 interviews. Some of the conclusions to increase participation and adherence to the 17P treatment were: <ul style="list-style-type: none"> • Explore options for locations other than from primary prenatal care provider where shots can be offered. • Facilitate 17P training and provide educational materials for providers and care managers. • Create or share YouTube videos and other information for nurses about how to administer 17P and treat side effects. • Learn how to better assist women in receiving needed services
Distribute at least 1,477 doses (covering approximately 98 women) of 17P free of charge to NC health care providers for prescriptions for eligible, uninsured pregnant women statewide	Approximately 200 doses (covering approximately 13 women) were distributed. <i>*Due to increase in cost of medication, contractor was unable to purchase targeted dosage. However, contractor was able to work with manufacturer to facilitate maximum use of the company's program for uninsured women. This relationship resulted in 200 uninsured women covered.</i>

Have Objectives Been Achieved?

Stated contract objectives are being met.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this program uses evidence-based strategies and is currently meeting its stated objectives.

Consequences of Discontinuing Funding:

Although the purchase of medication was acquired by other means, provider education regarding administration continues to be lacking. If this funding is reduced or eliminated, providers who serve low income women will not have access to education and the technical assistance regarding 17P medication and its administration. This will lead to a reduction of administration of the drug and thereby increase the likelihood of a low birthweight infant.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

<p>Carolina Pregnancy Care Fellowship <i>Open Window Service: Maternal Health</i></p>
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Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The mission of Carolina Pregnancy Care Fellowship (CPCF) is to equip, support and provide networking opportunities for member pregnancy resource centers that provide direct services in their local communities to women who face challenging pregnancy situations.
- CPCF is administered by a nonprofit entity. It is available statewide. Its centers serve 7,236 clients with educational messages and support items such as diapers, baby wipes, and clothing.
- These centers provide one or more of the following services: confidential lay counseling and/or mentoring; pregnancy options education and decision making support; material assistance, such as maternity and baby clothing, food, and furniture; prenatal education, childbirth and parenting classes; referrals to other community agencies and medical resources; adoption information; medical services such as limited ultrasound and sexually transmitted infection (STI) testing available under physician supervision; and other related services necessary for the well-being of the mother and child.
- Much of the work is related to workshops/training opportunities regarding medical practices, marketing, and general support.

Program Activities:

The contract provider is expected to:

- Provide operational support to 26 pregnancy resource centers in order to expand and improve program services. This includes, but is not limited to, the provision of supplies, equipment, software & hardware, curriculums, travel reimbursement, website upgrades and maintenance, outreach costs and staff development.

- Provide a minimum of six trainings in program implementation, client services and non-profit management for a network of 77 pregnancy resource centers (including satellite offices).
- Provide technical assistance in program implementation, client services and non-profit management to 77 pregnancy resource centers (including satellite offices) in the form of site visits, phone, and email interactions.

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$300,000
GRAND TOTAL		\$300,000

No state FTEs. Service is provided through a contract.

Program Performance

Problem or Need Addressed:

36% of North Carolina's births were to women in the CPCF service area. Contract is to provide training, operational support and technical assistance to the centers to expand and improve services.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

- Centers served 7,236 clients and provided 9,908 educational sessions.
- Regional Workshops focused on social marketing: 3/20/15 (Greenville) -16 attending from nine agencies; 4/24/15 (Wilkesboro) - 15 attending from five agencies; 5/1/15 (Asheville) - 14 attending from seven agencies; Medical Workshop focused on doing ultrasounds 3/21/15 (Mooresville) – four attendees
- Number of site visits - 26 subcontractor visits; 16 other pregnancy centers
- Number of centers receiving technical assistance or training of some type - 74

Have Objectives Been Achieved?

A contract was executed with the vendor after funds were allocated to this organization through the enacted budget. The vendor has met the terms of the contract executed.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Further evaluation is recommended.

Consequences of Discontinuing Funding:

Training and technical assistance as noted above will not occur.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

Healthy Beginnings

Open Window Service: Community Focused Infant Mortality Reduction

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The Healthy Beginnings program's goals are to improve the overall health of minority women, reduce minority infant morbidity and mortality, and strengthen minority families and communities.
- Healthy Beginnings funds public and nonprofit agencies to implement programs that will impact the reduction of minority infant mortality and low birthweight births in their communities and thereby improve minority birth outcomes. Services are currently provided in the following counties: Buncombe, Columbus, Forsyth, Gaston, Granville, Guilford, Hertford Lee, Northampton, Pitt, Rowan, and Vance counties. Ten sites cover 12 counties.
- Healthy Beginning is evidence-based, evidence-informed, and best practice (**see Resources**). It is administered by local health departments and nonprofit community organizations.

Program Activities:

The Healthy Beginnings Program incorporates many evidence-based and evidence-informed screenings and interventions in order to promote healthy birth outcomes. These include the following:

- Assessment of tobacco use by pregnant and postpartum women through utilization of the 5A's Method (ask, advise, assess, assist, arrange) for counseling and referral for smoking cessation.
- Screening of pregnant and postpartum women for domestic violence using three recommended American Congress of Obstetricians and Gynecologists (ACOG) screening questions.
- Screening of pregnant and postpartum women for alcohol and illicit drug use using the Institute for Health and Recovery's evidence-informed 5Ps (partners, peers, parents, past, present) screening questions.
- Assessment of all postpartum women with CDC's evidence-informed reproductive life planning questions. These initial questions lead to ensuring that women who are not planning a pregnancy are using an effective birth control method. This intervention helps decrease short interval births and unplanned pregnancies.

- Assessment of folic acid use among all pregnant and postpartum women and provision of counseling and education to encourage this evidence-based intervention that decreases the incidence of neural tube defects.
- Provision of breastfeeding education, counseling and referral for all participants to encourage breastfeeding initiation and maintenance.
- Provision of counseling about healthy weight utilizing the following evidence-informed interventions: 1) pregnant women – staff counsel participants about adequate weight gain during pregnancy based on their pre-pregnancy BMI; 2) staff promote consumption of fruits and vegetables and physical activity to maintain healthy weight for both pregnant and postpartum participants; and 3) staff promote breastfeeding with participants.
- Provision of evidence-based education and support to promote safe sleep practices utilizing the evidence-based practices of: 1) back-to-sleep, 2) eliminating tobacco exposure, 3) eliminating bed sharing, and 4) crib safety.
- Promotion and support of compliance with well-child visits. Staff provides education and support so that mothers take their children to well-child visits. Children who are seen at the health department are seen by providers who follow the evidence-based and evidence-informed Bright Futures guidelines for preventive health services for children. Other children who have Medicaid (and are seen by providers outside the local health department) are seen by providers that follow the Health Check preventive care guidelines which are also evidence-informed and evidence-based.
- Promotion and support of compliance with prenatal care visits. Staff provides education and support so that mothers are compliant with early prenatal care entry and continuous prenatal care.

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$435,869
Appropriations	State	\$437,852
GRAND TOTAL		\$873,721

1 FTE

Program Performance

Problem or Need Addressed:

- A racial disparity remains in the state with the African American population having an infant mortality rate 2.5 times higher than the White population, and the American Indian population having a 1.8 times higher infant mortality rate than the White population.
- The Healthy Beginnings program provides minority pregnant and postpartum women with evidence-based and evidence-informed interventions and screenings to improve maternal and birth outcomes.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

There are 10 Healthy Beginnings program sites.

- Each program was required to serve a minimum of 34 participants each year (goal of 340 served). Total participants served in SFY 2014-2015: 526
- 90% of all pregnant women shall receive all prenatal care visits. SFY 2014-2015 achieved: 85.2%
- 40% of new mothers shall initiate breastfeeding and maintain for at least six weeks. SFY 2014-2015 achieved: 32%
- 80% of enrolled participants shall gain an increased knowledge in education topics contributing to favorable birth outcomes. SFY 2014-2015 achieved: 83.4%

Have Objectives Been Achieved?

- Most objectives were met for the SFY 2014-2015 timeframe. The program was slated to serve 340 participants, however 526 were served to meet a growing need. This impacted some of the objective outcomes.
- The program is currently meeting its stated objectives.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this program uses evidence-based or evidence-informed screening and interventions and is meeting its stated objectives.

Consequences of Discontinuing Funding:

If the Healthy Beginnings program was not continued, based upon SFY 2014-2015 data, 526 pregnant and postpartum women would not receive services that help improve maternal health, and reduce the risk of infant mortality and low birthweight births in the state.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

- The Healthy Beginnings program implements the *Partners for a Healthy Baby* home visiting curriculum. This is a research-based and practice-informed home visiting curriculum that is used to improve birth outcomes. The Healthy Beginnings program will improve services by increasing the home visiting component of program services.
- The Healthy Beginnings program has already developed guidelines to avoid any possible duplication of services with other home visiting programs serving minority pregnant and postpartum women in the state.

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

March of Dimes

Open Window Service: Maternal Health

Current Environment**Description of Mission, Goals, Objectives, and Functions:**

- The March of Dimes NC Preconception Health Campaign promotes folic acid consumption using training, education, media and the distribution of multivitamins to low-income women of childbearing age.
- The March of Dimes also trains health care providers, community lay advisors, and consumers on tobacco cessation for women, the importance of medical homes and early prenatal care, healthy weight for women, reproductive life planning, and the health consequences of early elective delivery.
- The March of Dimes program is evidence-based or evidence-informed (see **Resources**), administered by a nonprofit entity, and available statewide.

Program Activities:

- Provide preconception and folic acid education for women before pregnancy to reduce birth defects, preterm birth, and infant mortality.
- Provide leadership for preconception health activities in North Carolina.
- Increase folic acid consumption.
- Increase preconception health knowledge and behaviors among women and men of childbearing age in North Carolina.
- Increase knowledge of the risks of early elective delivery among pregnant women.

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$350,000
GRAND TOTAL		\$350,000

No state FTEs. Service is provided through a contract.

Program Performance

Problem or Need Addressed:

- More than half of all infant mortality in North Carolina can be attributed to the health of the mother prior to pregnancy. Preconception health interventions aim to provide access to knowledge and services that allow for improved health prior to pregnancy, thereby positively impacting birth outcomes, including the reduction of birth defects and preterm birth.
- As supported by several recent national health guidelines, preconception health education is a critical mechanism to reduce infant mortality and birth defects.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

- Number of multivitamins purchased to prevent neural tube defects (NTDs) - **40,345**
- Percent of health care providers receiving training who shall provide folic acid/preconception health education and distribute multivitamins to women of childbearing age - **97%**
Folic acid supplementation has been shown to prevent NTDs by up to 70%; recent report showed that 1,300 births with birth defects were averted yearly by this practice.
- Number of consumer participants educated on the importance of preconception health - **6,794**
Use of lay health educators can help foster greater adherence to risk reduction recommendations and overall preconception health promotion; self-reported daily multivitamin consumption among Hispanic women in NC increased from 24% at baseline to 71% four months post-intervention.
- Number of health care providers who received training on how to integrate preconception best practices into clinical care - **2,365**
- Percent of participants educated who increase their knowledge of preconception health - **80%**
The mounting evidence of the clinical components of preconception care and the associated risk reduction strategies has guided the preconception health promotion efforts of the March of Dimes NC Preconception Health Campaign.
- Number of media placed to promote preconception health and daily folic acid consumption to prevent neural tube defects - **4,573**
There is a growing body of evidence about the effectiveness of preconception health communication strategies to improve health outcomes; education and awareness is the foundation for affecting long-term behavior change.

Have Objectives Been Achieved?

Contract objectives are being met.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this program uses evidence-based or evidence-informed interventions and is meeting its stated objectives.

Consequences of Discontinuing Funding:

- The March of Dimes has a proven record of contributing to a significant reduction in birth defects. North Carolina experienced a reduction of nearly 40% in neural tube birth defects of the brain and spine over a 10-year period versus a reduction of 23-26% in other states that track similar data.
- The March of Dimes collaborates with various agencies and community leaders statewide to promote preconception health reaching approximately 50,000 people each year.
- Local health departments continue to rely on the March of Dimes to provide free multivitamins with folic acid to the women they serve.
- Health care providers also receive continuing education and trainings to help improve their patient's preconception care.
- As a result of this work, the March of Dimes has contributed to elevating preconception health to become a local, state and national priority.

Recommendations to Improve Efficiency and Effectiveness**Recommendations for Improving Services, or Reducing Costs or Duplication:**

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors**Policy Issues or Other Relevant Information:**

None

Maternal Health Clinical Services (including high risk pregnancy services)
Open Window Service: Maternal Health

Description of Mission, Goals, Objectives, and Functions:

- Each local health department (LHD) must provide, contract for the provision of, or certify the availability of maternal health services for all individuals within the jurisdiction of the local health department.
- LHD Maternal Health clinics provide prenatal care based on evidence-based practices to promote the health of women during their pregnancy and to ensure healthy birth outcomes.
- These clinics ensure that all pregnant women in the state have access to early and continuous prenatal care, regardless of income.
- These services are evidence-based, evidence-informed, and best practice (**see Resources**), administered by local health departments and East Carolina University, and available statewide.

- The number of pregnant women served in SFY 2014-2015 was 32,082. The number of services provided to pregnant women in SFY 2014-2015 was 469,710.

Program Activities:

- Services provided by the local health departments include clinical prenatal care, screenings, referral for Medicaid and WIC services, provision of tobacco cessation counseling for pregnant women, administration of 17-P (17-hydroxprogesterone injections) for preterm birth prevention, and provision or referral for nutrition consultation.
- In addition, maternal care skilled nurse home visits are provided for women with high risk pregnancies. Newborn/postpartum home visits are also provided by nurses.
- Ten local health departments and East Carolina University are also provided limited funding to provide high risk maternity clinic services.

Statutorily Required Functions:

General Statute 130A-124 requires the Department to establish and administer a maternal and child health program for the delivery of preventive, diagnostic, therapeutic and rehabilitative health services to women of childbearing years, children and other persons who require these services. The program may include, but shall not be limited to, providing professional education and consultation, community coordination and direct care and counseling.

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

3	SFY 14-15 Funding Source	Funding Type	Amount	FTEs
	Appropriations	State	\$3,248,499	
	Maternal and Child Health Block Grant	Federal	\$2,227,700	
	GRAND TOTAL		\$5,476,199	

Program Performance

Problem or Need Addressed:

- North Carolina's infant mortality rate was 7.1 per 1000 live births in 2014. The African American infant mortality rate was 12.8 compared to the White infant mortality rate of 5.1 in 2014.
- The greatest contributors to infant mortality are low birthweight and prematurity. Local health departments provide and/or assure access to high quality prenatal care for women in their community.
- Each year, over 500 women die from pregnancy related conditions in the United States. North Carolina averages annually about 15 women who die from those conditions. It is estimated that one in three pregnancies are affected by one or more high risk conditions, which may need high risk management.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Maternal Health Process Outcome Objectives	CY11	CY12	CY13
Percentage of women having live births who had adequate prenatal care as defined by Kessner Index.	65.85	65.29	64.17
Percentage of women having live births who smoked during pregnancy.	10.93	10.63	10.29

Have Objectives Been Achieved?

Contract deliverables and objectives are being met.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

At least continued funding is recommended since these services are evidence-based, evidence-informed, and best practice, and they meet their stated objectives.

Consequences of Discontinuing Funding:

- 32,082 pregnant women will not have a source of prenatal care if this funding is discontinued. Local Health Departments (LHDs) serve as safety net clinics for the uninsured and provide many disease prevention services, including prenatal care and health behavior intervention for those who do not have private or public insurance.
- The services provided by LHDs prevent medical problems, reduce the severity of medical problems and provide care at the point in the medical system where it is the least expensive.
- Discontinuing funding for prenatal care for these women could result in higher cost burden for hospitals that may result in providing care for pregnant women and infants due to complications resulting from not receiving prenatal care.
- Regular prenatal care can help prevent or detect early pregnancy complications including preterm labor, gestational diabetes, and pre-eclampsia.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

- The implementation of the Pregnancy Medical Home and Pregnancy Care Management program has been instrumental in providing services for low income women who qualify for Medicaid. The Pregnancy Medical Home/Care Management effort is collaboration with Division of Medical Assistance, Community Care of NC, and Division of Public Health.
- As the quality of these services for Medicaid eligible pregnant women has improved, the providers of Maternal Health Clinical Services are also implementing the same evidence-based strategies to service the low income women who do not qualify for Medicaid.

Recommendations for Change (Statutory, Budgetary, or Administrative):

Restore LHD funding for Maternal Health Clinical Services to the SFY 2011-2012 Maternal and Child Health Block Grant funding level (see *External Factors*).

External Factors

Policy Issues or Other Relevant Information:

- Local health departments (LHDs) receive federal Maternal and Child Health Block Grant (MCHBG) funding to provide prenatal care services for low income women who do not qualify for Medicaid.
- Beginning in SFY 2011-2012, the final state budgets enacted in North Carolina have reduced these funds to LHDs by funding other set aside items placed in the MCHBG Plan (see additional details in *Introduction*). As these funds have been reduced, the ability for LHDs to provide this care is diminishing. The number of women served and number of services provided by LHDs have declined. In SFY 2012, 42,700 unduplicated patients were served by LHDs through Maternal Health Clinical Services. This number dropped to 32,088 in SFY 2015.

Notes on Data

LHDs are also seeing a greater number of uninsured patients (for which they receive no reimbursement) as more private providers are willing to accept Medicaid in some communities (and as a result of Pregnancy Medical Home outreach efforts).

NC Baby Love Plus

Open Window Service: Community Focused Infant Mortality Reduction

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The purpose of this federal Healthy Start grant program is to improve perinatal health outcomes as well as reduce racial and ethnic disparities in perinatal health outcomes by using community-based approaches to service delivery, and to facilitate comprehensive health and social services for women, infants and their families.
- The NC Baby Love Plus Healthy Start program aims to reduce disparities in infant mortality and reduce adverse perinatal outcomes by 1) improving women's health, 2) promoting quality services, 3) strengthening family resilience, 4) achieving collective impact, and 5) increasing accountability through quality improvement, performance monitoring, and evaluation.
- NC Baby Love Plus uses evidence-based strategies (**see Resources**) and is administered by Edgecombe County Health Department, Forsyth County Health Department, Halifax County Health Department, Nash County Health Department, Pitt County Health Department, and Piedmont Health Services and Sickle Cell Agency. Services are available in the following counties: Edgecombe, Forsyth, Guilford, Halifax, Nash, and Pitt counties.

Program Activities:

- Edinburgh Postnatal Depression Scale
- Patient Health Questionnaire
- Ages and Stages Questionnaires (ASQ-3 and ASQ:SE-2)

- Motivational Interviewing
- 5As Smoking Cessation (ask, advise, assess, assist, arrange) - for counseling and referral for smoking cessation services

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Healthy Start Grant	Federal	\$1,670,604
GRAND TOTAL		\$1,670,604

5 FTEs

Program Performance

Problem or Need Addressed:

- North Carolina is one of several southern states with high rates of infant mortality and morbidity. North Carolina was ranked 41st in the U.S. in 2013.
- In 2014, the state's infant mortality rate was 7.1 deaths per 1,000 live births, a slight increase from 2013.
- While there have been improvements in the infant mortality rate overall, racial disparities in infant mortality still persist. African American women of child bearing age (15-44 years) in North Carolina continue to experience an infant mortality rate more than double that of the White population, with a 2014 rate of 12.8 infant deaths per 1,000 live births.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Performance Measure	Annual Target	SFY 2014-2015
Number served- women, infants and children.	750	749
Percentage of children age birth-18 participating in MCHB-funded programs who receive care within a medical home.	Increase to 88%	98.7%
Percentage of women participating in MCHB supported program who have an ongoing source of primary and preventive services.	Increase to 60%	77.4%
Percentage of women participating in MCHB supported programs who required a referral, received a completed referral.	Increase to 62%	87.5%
Percentage of pregnant program participants in MCHB funded programs receiving prenatal care in the first trimester of pregnancy.	Increase to 65%	58.2%
Percentage of completed referrals among women in MCHB-funded programs.	Increase to 68%	74.7%

Performance Measure (continued)	Annual Target	SFY 2014-2015
Percentage of women participating in MCHB-funded program who smoke in the last 3 months of pregnancy.	Reduce to 11%	11.3%
Percentage of very low birth weight infants among all live births.	Reduce to 3.7%	1.6%
Percent of live singleton births weighing less than 2,500 grams among all live births.	Reduce to 14.2%	11.8%
The infant mortality rate for program participants per 1,000 live births.	Reduce to 15.8 per 1000 live births	6.8 per 1000 live births
The neonatal mortality rate for program participants per 1,000 live births.	Reduce to 11.8 per 1000 live births	2.3 per 1000 live births
The post-neonatal mortality rate for program participants per 1,000 live births.	Reduce to 4.0 per 1000 live births	4.5 per 1000 live births
The perinatal mortality rate for program participants per 1,000 live births.	Reduce to 15.5 per 1000 live births	4.5 per 1000 live births
The percent of mothers who breastfeed their infants at 6 months of age.	Increase to 7.5%	12.1%

Have Objectives Been Achieved?

All objectives were met except one. This one was impacted by the availability of first trimester prenatal care appointment availability.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this program uses evidence-based strategies and is meeting its stated objectives.

Consequences of Discontinuing Funding:

Healthy Start grants are provided to communities with rates of infant mortality at least 1½ times the United States national average and high rates of other adverse perinatal outcomes (such as low birthweight, preterm birth, etc.) to address the needs of high risk women and their families before, during and after pregnancy.

- If funding is discontinued, the focus on improving women's health before, during and after pregnancy as a means to improving perinatal outcomes and reduce infant mortality will no longer be available through this program.
- The six counties which receive funding through this grant will no longer have additional funding to provide access to culturally competent, family centered and comprehensive health and social services to women, infants and their families to directly impact their rates of infant mortality and other adverse perinatal outcomes.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

Due to new data and evaluation requirement from the federal funder, the program will need to implement a web-based Case Management System specifically designed to support the data collection and reporting requirements of Healthy Start Programs. This new system will need to be implemented spring 2016.

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

NC Fetal Alcohol Prevention Program (FASDinNC)

Current Environment

Description of Mission, Goals, Objectives, and Functions:

Mission:

The North Carolina Fetal Alcohol Prevention Program (FASDinNC) was created to address the problem of alcohol exposed pregnancies within North Carolina and to focus its outreach education on preventing alcohol use during pregnancy.

Goal:

The goal of the NC Fetal Alcohol Prevention Program (FASDinNC) is to provide the statewide community with education and awareness information on Fetal Alcohol Spectrum Disorders and other teratogens to pregnant women, women of child-bearing age, their significant others, and the professionals who work with them.

Objectives:

- Increase awareness of birth defects, developmental disabilities and behavioral problems caused by prenatal exposure to alcohol and other harmful agents; by educating professionals and the

general public about referral, diagnosis, intervention, and prevention efforts.

- Provide information and facilitate appropriate referrals for women who are concerned that they have exposed their child to a harmful agent.
- Provide training for professionals and caregivers of individuals with a FASD as well as information and resources to help prevent secondary disorders from developing, such as mental health or substance abuse problems.
- Serve as a resource of information and referrals for professionals and families regarding individuals with a suspected or confirmed diagnosis of Fetal Alcohol Syndrome (FAS) or as an FASD.

Mission Healthcare Foundation, Inc., (Fullerton Genetics Center) in Asheville, NC with administrative management from Smoky Mountain LME /MCO.

Services are available statewide.

Program Activities:

- Continue to increase awareness of FASD in support of FASD Awareness Day (which is held on September 9th) by partnering with the FASD Collaborative of NC and the FASD Committee of Mecklenburg, This will include, but is not limited to, various educational activities, awareness campaigns, support of a Governor's proclamation (if applicable) and promoting media exposure in all four (4) regions of the State.
- Provide presentations/educational/training sessions, exhibits and/or network at a minimum of 12 seminars, conferences or training events to a variety of disciplines throughout North Carolina about the dangers of drinking alcohol while pregnant, by providing information about FASD as it presents across the lifespan, and/or providing information and resources to help prevent secondary disabilities from developing in individuals with an FASD.
- Maintain the www.MothertoBabyNC.org and www.FASDinNC.org websites in order to provide up-to-date information about FASD for women of child bearing years, families of individuals with a FASD and the professionals that work with them.

Statutorily Required Functions:

None

Source of Funds (State Fiscal Year 2014-2015):

SFY 14-15 Funding Source	Funding Type	Amount
NC Fetal Alcohol Prevention Program (FASDinNC)	FEDERAL-Substance Abuse Prevention and Treatment Block Grant (SABG). Authorized by <u>section 1921 of Title XIX, Part B, Subpart II and III of the Public Health Service (PHS) Act.</u> <u>Title 45 Code of Federal Regulations Part 96</u>	\$71,083

Program Performance

Problem or Need Addressed:

- Address the problem of alcohol exposed pregnancies within North Carolina.
- Focus its outreach education on preventing alcohol use during pregnancy.
- Serve as a resource to professionals working with women of childbearing age.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

The Program Coordinator, employed by Mission Hospitals' Fullerton Genetics Center, prepares and submits Progress Reports quarterly by the 10th of the month following the 3rd month of each quarter (October, January, April, and July). The purpose of these reports is to evaluate the program performance with regard to the goals and objectives. As such, the reports describe the contractor's activities and deliverables during the reporting period and identifies specific contract goals and objectives that these activities or deliverables address.

- Two FASD Proclamations, one signed by the Governor and one by the Mayor of Charlotte.
- Comprehensive social media campaign delivered 9/1/14 – 9/9/14
- Distributed an electronic FASD Awareness Program to 26 NC Perinatal Maternal & CASAWORKS Initiative programs throughout the State.
- FASD Awareness Day Press Release resulted in media coverage of the event both regionally and statewide via CBS and Time Warner networks (projected outreach of 4,000).
- Over 50 Participants participated in the FASD Awareness Day Event.
- The Program Coordinator reached 2,028 individuals through 39 outreach opportunities during FY 2014-2015.

- There were a total of 5,507 hits to FASDinNC.org, with 400 hits to the MothertoBabyNC/teratogen page for FY 2014-2015.

Have Objectives Been Achieved?

The three main objectives listed were met during FY 2014-15.

- 1) The Program Coordinator reached 2,028 individuals through 39 outreach opportunities during FY 2014-2015.

Discussion: The Program Coordinator was charged with the responsibility of providing presentations/educational/training sessions, exhibits and/or network at a minimum of 12 (twelve) seminars, conferences or training events to a variety of disciplines throughout North Carolina. The Program Coordinator networked with community agencies, substance abuse prevention coalitions, education and public health systems across the State to increase awareness of FASDs, the dangers of drinking alcohol while pregnant, the impact of alcohol on the developing brain and how this might present across the lifespan. Those reached were also delivered a call to action for prevention in their communities.

- 2) FASD Awareness Day Activities:

- Two FASD Proclamations developed by the Program Coordinator were signed by the Governor and the Mayor of Charlotte respectively.
- Comprehensive social media campaign delivered 9/1/14 – 9/9/14 via Facebook and Twitter.
- Distributed an electronic FASD Awareness Program to twenty-six NC Perinatal Maternal and CASAWORKS Initiative programs throughout the state.
- FASD Awareness Day Press Release resulted in media coverage of the event both regionally and statewide via CBS and Time Warner networks (projected outreach of 4,000).
- FASD Awareness Day Event attended by over 50 participants.

Discussion: The activities of FASD Awareness Day were achieved in partnership with the members of the FASD Collaborative of North Carolina and the FASD Committee of Mecklenburg. The social media campaign promoted awareness by emphasizing FASD facts via Facebook and Twitter accounts of Collaborative and committee members. Participants attending the event signed FASD Awareness Day pledges, promising to talk with women about the dangers of alcohol use during pregnancy. Two networks attended the event, conducted interviews of Collaborative members and later televised these interviews to their designated catchment area (Charlotte-Mecklenburg). The Time Warner interview was also posted online, and a link to the interview was distributed to Collaborative and committee members to share on their personal social media sites.

- 3) There were a total of 5,507 hits to FASDinNC.org, with 400 hits to the MothertoBabyNC/teratogen page for FY 2014-15.

Discussion: FASDinNC.org is the website for the NC Fetal Alcohol Prevention Program. MothertoBabyNC, formerly known as the NC Teratogen Information Service, is a service closely aligned with FASDinNC in that both programs operate out of Fullerton Genetics/Mission Health in Asheville, NC and share a goal of diminishing substance exposed pregnancies. MothertoBaby is funded by Fullerton Genetics, and is promoted by the Program Coordinator and share a resource

number (1.800.532.6302) promoted statewide. The Program Coordinator created the MotherToBaby page within FASDinNC.org to serve as a statewide resource. Google analytics is used to determine the number of hits to the both the FASDinNC site and MotherToBaby page which will reflect an increase in outreach from year to year.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

The current funding level sustains the current outputs related to the prevention of FASDs in NC. Continued funding is recommended based on the programs ability to meet the intended objectives.

Consequences of Discontinuing Funding:

The discontinuation or the reduction of funds for this program would have a statewide/societal impact including:

- Increased medical care related to high risk birth/deliveries; and
- Increased need for social, medical, behavioral health services for individuals with a FASD.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

The North Carolina Fetal Alcohol Prevention Program can improve services by expanding the capacity and reach of the existing program to underserved communities throughout the State with specific emphasis on the Eastern Region and by enhancing partnerships within existing public health and prevention efforts (i.e. Healthy Start, March of Dimes). Also, an increase in the existing FASD awareness campaign (which is targeting women of childbearing years) by implementing a campaign that places alcohol and pregnancy warning signage/stickers at on-premise and off-premise locations that sell alcohol.

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

NC Perinatal & Maternal Substance Use Initiative, CASAWORKS for Families Residential Initiative and the Perinatal Substance Use Project

Current Environment

Description of Mission, Goals, Objectives, and Functions:

I. NC Perinatal and Maternal Substance Use Initiative and CASAWORKS for Families Residential Initiative:

Mission: The mission of the NC Perinatal and Maternal Substance Use Initiative and CASAWORKS for Families Residential Initiative is to provide comprehensive gender-specific, family-centered substance use disorder treatment and recovery services and supports to pregnant and parenting women with substance use disorders and their children.

Goal 1: The NC Perinatal and Maternal Substance Use Initiative and CASAWORKS for Families Residential Initiative will assure that North Carolina women have access to needed evidence-based, trauma informed, and gender appropriate substance use disorder treatment services and recovery supports.

Objectives:

- Provide gender specific substance use disorder treatment and other therapeutic interventions for women that address issues of relationships, sexual and physical abuse, parenting, and necessary child care while the women are receiving these services;
- Provide a continuum of evidence-based, evidence-informed treatment and assure best practices to pregnant and parenting women with substance use disorders and co-morbidities;
- Adhere to best practices and evidence-based treatments when addressing prenatal substance use disorder medication assisted treatment and neonatal abstinence syndrome;
- Assure access to treatment through cross-area services for pregnant and parenting women that supports their role as mothers;
- Provide safe therapeutic recovery residential services for women where their infant and young children can stay with them when ASAM criteria are met for this level of care;
- Provide necessary transportation, child care, and other basic living supports to pregnant and parenting women to assure their ability to access substance use disorder treatment services.

Goal 2: The NC Perinatal and Maternal Substance Use Initiative and CASAWORKS for Families Residential Initiative will assure substance use disorder treatment services in the Initiative are family-centered.

Objectives:

- Provide or arrange access to safe therapeutic recovery residential services for women where their infant and young children can stay with them when ASAM criteria are met for this level of care;
- Provide or arrange for access to evidence-based parenting and prevention services for women and their children (who meet age requirements);
- Provide or arrange for access to trauma informed and relationship therapeutic services for women and children who have experienced sexual and interpersonal violence;
- Provide or arrange for childcare so that mothers can participate in treatment and attend recovery support activities;
- Provide sufficient case management and transportation to ensure that women and their children have access to services provided above.

Goal 3: The NC Perinatal and Maternal Substance Use Initiative and CASAWORKS for Families Residential Initiative will improve health and wellbeing of pregnant women and their children.

Objectives:

- Provide or arrange for therapeutic interventions for children in custody of women in treatment which may address their developmental needs, their issues of sexual and physical abuse and neglect, and other health or behavioral health concerns;
- Arrange for primary medical care for women including referral for prenatal care, and while the women are receiving such services, provide or arrange for necessary childcare;
- Arrange for primary pediatric care, including immunizations, for the children in physical custody of mothers while mothers are in treatment;
- Ensure priority admissions to substance use disorder treatment to pregnant women with substance use disorders, and pregnant women who use substances intravenously.

Goal 4: The NC Perinatal and Maternal Substance Use Initiative and CASAWORKS for Families Residential Initiative will support women in treatment toward preparing to meet their education and employment goals as a long-term aspect of living a life of recovery.

Objectives:

- Programs in the Initiative will ask women about their education and employment histories and goals at intake and during follow up assessments;
- Referral for GED, vocational rehabilitation services and other training and educational programs, in accordance with client goals, health, and therapeutic readiness, will be made;
- Work readiness topics will be addressed as part of substance use disorder treatment discussions about living a life of recovery;
- Where clinically appropriate, women will be referred to and supported in their efforts toward employment as part of their long-term recovery plan.

II. Perinatal Substance Use Project:

Mission: The Perinatal Substance Use Project's mission is to provide information, referral and advocacy for women who are pregnant or parenting and may have a substance use disorder. The project's mission includes providing outreach and education for local health, behavioral health and other treatment referral sources, regarding perinatal substance use.

Goal 1. Provide access to pregnant and parenting women with substance use disorders to services available throughout the state.

Objectives:

- Maintain a dedicated substance use disorder position, the perinatal substance use specialist.
- Maintain a toll free number at the Alcohol and Drug Council of NC to reach the perinatal substance use specialist.
- Provide telephonic verbal screening, information and referral to pregnant and parenting women.
- In the event treatment services are not available for a pregnant women, provide a referral for interim services.
- Provide gender-specific substance use training and technical assistance to local health department and other community agencies relative to screening, interventions, confidentiality and referral resources.
- Publicize and increase awareness of the availability of the NC Perinatal & Maternal Substance Use Initiative programs, CASAWORKS for Families Residential Initiative, the toll free number and other available services.

Goal 2. Maintain a statewide capacity management system for pregnant women and women with dependent children relative to the Substance Abuse Prevention and Treatment Block Grant Requirements in 45 CFR Part 96.

Objectives:

- Maintain a weekly listing of residential services beds available to pregnant women and women with children.
- Maintain and update the Alcohol and Drug Council of NC database regarding prevention, intervention and treatment services for pregnant women and women with dependent children who have substance use problems.
- Distribute electronic weekly listing of available beds and services to potential referral sources. Recipients of the listing include, but are not limited to, LME-MCOs, county DSSs, prenatal care providers, behavioral healthcare providers and court professionals.

The Division of Mental Health, Developmental Disabilities and Substance Abuse Services allocates funds to the Local Management Entity-Managed Care Organizations (LME-MCOs) to support the

programs in the NC Perinatal and Maternal Initiative and CASAWORKS for Families Residential Initiative. LME-MCOs contract with non-profit community agencies to operate the programs under the initiative.

The Division of MHDDSAS contracts with the Alcohol and Drug Council of NC (non-profit agency) that operates an information and referral line for substance use services statewide and performs the Perinatal Substance Use Project activities.

The residential services that are a part of the NC Perinatal and Maternal Substance Use Initiative and the CASAWORKS for Families Residential Initiative are considered Cross Area Service Programs and are available to any pregnant or parenting women and her children who meet medical necessity for the services based on ASAM criteria. The outpatient only programs are offered to pregnant and parenting women who meet the ASAM criteria for this level of care in the specific LME-MCO catchment area.

The Perinatal Substance Use Project services are available across the state. The substance use specialist is accessible by a statewide toll-free number.

Program Activities:

I. NC Perinatal & Maternal Substance Use Initiative:

- The programs provide comprehensive gender-specific, family-centered substance use disorder services that include, but are not limited to, the following: screening, brief intervention, assessment, case management, outpatient substance use disorder and mental health services, healthy family dynamics, parenting skills, transportation, childcare, residential services (or access to these services), referrals and coordination for primary and preventative health care for the women and children, and referrals for appropriate developmental, mental health and prevention services for the children.
- The Initiative includes 11 residential programs that serve pregnant women and women with their children. These residential programs allow women meeting medical necessity for an American Society of Addiction Medicine (ASAM) residential level of care to live in a family-centered recovery environment with one or more of their children while engaging in intensive treatment and other services and supports. The residential programs are considered Cross Area Service Programs providing women and their children access to available services across the state regardless of their county of residence.
- The Initiative also includes gender-specific comprehensive outpatient services in nine counties. These outpatient programs provide a range of evidence-based and trauma-informed treatment services.

CASAWORKS for Families Residential Initiative:

The NC CASAWORKS for Families Residential Initiative is a collaborative project between the Division of MHDDSAS and the Division of Social Services. This Initiative supports six comprehensive residential substance use disorder programs for women who are or would be eligible for Work First cash assistance and their children. The CASAWORKS for Families model was developed by the Center for the Study of Addiction and Substance Abuse (CASA) at Columbia University in response to the impact of welfare reform on families involved with substance use. The model proposes

that the best way to help TANF families become economically self-sufficient is to provide an integrated and concurrent gender specific substance use and co-occurring treatment with job readiness and training.

II. Perinatal Substance Use Project:

The Perinatal Substance Use Project is a collaboration between DMHDDSAS and the Division of Public Health to ensure, promote and protect the health and development of families with an emphasis on women, infants and youth. This project includes the following activities:

- Provides screening, information and referral to pregnant and parenting women, family members, health/behavioral health professionals, community agencies, and others.
- Coordinates referral of pregnant and parenting women with a substance use disorder to needed services including prenatal care, substance use disorder services, interim services and other community supports. The Perinatal Substance Use Specialist remains engaged with the caller throughout the referral process to ensure services are needed services are accessed.
- Provides advocacy for the individual seeking services and addresses potential and identified barriers to accessing care in a timely manner.
- Maintains a statewide capacity management system for residential services for pregnant and parenting women with substance use disorders and their children that is distributed to professionals and agencies statewide on a weekly basis.
- Publicizes and increases awareness of the availability of the NC Perinatal & Maternal Substance Use Initiative and CASAWORKS for Families Residential Initiative programs and the toll-free number and available services.
- Provides gender-specific substance use disorder training and technical assistance to local health departments and other community agencies relative to screening, intervention, confidentiality and referral resources.

Statutorily Required Functions:

Summary of US DHHS 45 CFR Part 96 Substance Abuse Prevention and Treatment Block Grants Regulations: The Substance Abuse Prevention and Treatment Block Grant (SAPTBG), 45 CFR Part 96.131, requires states to provide treatment services for pregnant women as required by section 1927 of the PHS Act. Section 1927 requires the State to ensure that each pregnant woman in the State who seeks or is referred for and would benefit from such services is given preference in admissions to treatment facilities receiving funds pursuant to the grant. The SAPTBG regulations require that all programs providing such services treat the family as a unit and admit both the mother and the children into treatment services, if appropriate. The State must ensure that, at a minimum, treatment programs receiving funding for such services also provide or arrange for the provision of the following service to pregnant women and women with dependent children including women who are attempting to regain custody of their children:

- Primary medical care for women including referral for prenatal care and, while the women are receiving such services, child care;
- Primary pediatric care, including immunizations, for their children;

- Gender specific substance use treatment and other therapeutic interventions for women which may address issues of relationships, sexual and physical abuse and parenting and child care while the women are receiving these services;
- Therapeutic interventions for children in custody of women in treatment which may, among other things, address their developmental needs, their issues of sexual and physical abuse and neglect; and
- Sufficient case management and transportation to ensure that women and their children have access to services provided above.

The State must ensure that the availability of treatment to pregnant women is publicized. The State is also required to ensure that a facility which serves women refers pregnant women to the State if the treatment facility has insufficient capacity to provide treatment services to any such pregnant woman who seeks services. This provision can be accomplished by establishing a toll-free number or other reasonable means to implement the provision. The State is required to refer the woman to a treatment facility that has the capacity to provide treatment services to the pregnant woman or if no treatment facility has capacity to admit the pregnant woman, to make available interim services to the pregnant woman, no later than 48 hours after she seeks the treatment service. This provision requires the State to have a tracking system that tracks all open treatment slots available to pregnant women in the State. Such a system must be continually updated to identify treatment capacity for any such pregnant woman.

The State must ensure that entities that serve women and who are receiving such funds provide preference to pregnant women. Grant funds shall give preference to treatment as follows:

1. Pregnant women who use substances intravenously.
2. Pregnant women with substance use disorders.
3. Individuals who use substances intravenously.
4. All others.

Source of Funds (State Fiscal Year 2014-2015):

SFY 14-15 Funding Source	Funding Type	Amount
APPROPRIATIONS, NAME OF GRANT, OR NAME OR RECEIPT	STATE, FEDERAL OR OTHER RECEIPT	
DMHDDSAS NC Perinatal & Maternal Substance Use Initiative	State Federal (SAPTBG funds)	\$3,442,700 \$2,729,316
DMHDDSAS CASWORKS for Families Residential Initiative	State Federal (SAPTBG funds)	\$450,000 \$2,700,000
NC Perinatal & Maternal Substance Use Initiative and CASAWORKS for Families Initiative	Federal (Medicaid)	\$2,244,771
DMHDDSAS Perinatal Substance Use Project	State Federal	\$45,000 \$37,779
GRAND TOTAL		\$11,649,56

Program Performance

Problem or Need Addressed:

The NC Perinatal and Maternal Substance Use Initiative and CASAWORKS for Families Residential Initiative addresses the treatment, health, and safety needs of a high risk group of women and children, reducing the impact of maternal and parental substance use on the health and wellbeing of women and their children and families through provision of gender specific, trauma informed, and evidence-based or evidence-informed treatment and health care services. Evidence-based, evidence-informed, and best practices for this population have been found in national clinical trials to reduce symptoms of neonatal abstinence syndrome for prenatally exposed infants, improve the health and wellbeing of children and their mothers, and reduce risk of criminal justice or child welfare involvement for families, thus having a positive impact on family wellbeing and reducing societal costs.

Families involved in the programs have a wide range of needs to be addressed as part of recovery, health and stability for their families. Many of the needs that are met outside the scope of the initiatives' direct services, are accomplished through linkages and active coordination with other services and programs. The services and programs that are most commonly a part of collaboration are:

- County Department of Social Services
- Pediatric health services
- Children's Developmental Services Agencies
- Child mental health services
- Primary health services including prenatal care
- Sexual assault and domestic violence services
- Family Drug Treatment Courts
- Child care services
- Food banks
- Evidenced based parenting programs
- Evidenced based prevention programs
- Hospitals
- Affordable housing coalitions

This ongoing collaboration with community agencies and coordination of care supports families in achieving their goals, without duplication of services.

The Perinatal Substance Use Project provides an avenue for pregnant and parenting women, family members, professionals and others to receive information, referral, consultation and training to identify and access substance use disorder services statewide in accordance with the Substance Abuse Prevention and Treatment Block Grant.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Perinatal and Maternal Substance Use and CASAWORKS for Families Residential Initiatives:

The Perinatal and Maternal and CASAWORKS providers submit an annual report that addresses the services and supports they provide for pregnant and parenting women and their children, how they meet the requirements of the SAPTBG regulations and they participate in the North Carolina Treatment Outcomes and Program Performance System (NCTOPPS). NCTOPPS data include a range of client specific clinical, social, and living context measures and are used in block grant reporting and in performance monitoring. The most robust NCTOPPS data is based on intake assessments. For a subset of clients and for a subset of measures there are update or discharge assessment data that allow DMHDDSAS to evaluate the impact of services on client and family outcomes.

In SFY 15, The Perinatal and Maternal Substance Use and CASAWORKS for Families Residential Initiatives served the following:

- 1,643 women received substance use disorder treatment services; 360 women were pregnant during their treatment, of these 23% entered treatment during their first trimester, 44% during the second trimester, and 33% during the third trimester;
- 941 women received screening, brief intervention and/or referral; 238 were pregnant

During SFY 2015, data shows that there were 1,061 children were in the physical custody of the mothers during treatment and 366 were between the ages of birth to five.

DMHDDSAS child outcomes for SFY 2015:

- 88% of the infants born to mothers while they were in treatment were born full term (≥ 37 weeks gestation at birth);
- 81% of the infants born to mothers while they were in treatment were ≥ 2500 grams at birth;
- 61% of the children in mothers' physical custody while mothers were in treatment were referred for and received behavioral health screenings;
- 84% of the children in mothers' physical custody were referred for and received developmental screening;
- 97% of children in the mothers' physical custody while the mother was in treatment received regular pediatric/wellbeing care;
- 95.8% were up to date with immunizations after their mothers' entered treatment;
- 90% of the children in the custody of mothers in treatment were reported by mothers to be in good health, 8% in fair health and less than 2% in poor health.

Mothers' health and wellbeing impacts the health and wellbeing of their children. The following perinatal or maternal outcomes and contextual information for consumers for SFY 2015:

- Overall statistically significant reduction was observed in the following areas:
 - Alcohol and other drug use with an overall 75.3% reduction and with 74% reporting no use in 30 days prior to discharge;

- Severity of mental health symptoms decreased overall with 83.39% reporting no symptoms at discharge and an overall 78.6% decrease at discharge for those reporting extremely severe symptoms at intake;
- Sexual risk taking and IV drug use (HIV risk behaviors) for women receiving treatment showed an overall 92% decrease between intake and discharge; and
- Criminal justice involvement, with 96.35% reporting no arrests in the month prior to discharge.
- 99% of pregnant women engage in prenatal care;
- 95% of the mothers served reported family and friends as supportive of their recovery;
- a reduction in interpersonal physical (22.3% to 6.7%) and sexual violence victimization (42.5% to 2.5%) was reported by women from before to during treatment;
- women received, or were referred to and received, services that helped to increase their overall wellbeing and ability to provide for their children, including the following:
 - 28% received education supports,
 - 33% vocational supports,
 - 53% assistance with housing,
 - 62% assistance with transportation to treatment or health services for themselves or their children,
 - 60% received assistance accessing needed medical services, and
 - 42% accessing legal services;
- In a longitudinal evaluation project, supported by US DHHS Administration for Children and Families and conducted with one of the NC perinatal and maternal substance abuse treatment sites, a comprehensive evidence-based collaborative model for treating substance using pregnant women and women with children showed a significant reduction in social services recidivism when families were compared to those not receiving similar services. Children of parents who participated were 99% less likely to experience maltreatment recurrence than the matched comparison group ($p < 0.01$) (Pollock, M. & Green, S. 2015)

Perinatal Substance Use Project:

The Perinatal Substance Use Project submits progress reports on a quarterly basis. The purpose of these reports is to evaluate the programs' performance with regard to the goals and objectives. The report describes the activities and deliverables during the reporting period. In SFY 14-15, activities and deliverables included the following:

- Provided referrals to substance use disorder treatment for 253 individuals from 51 counties statewide.
- Maintained and distributed the Bed Availability List to approximately 600 professionals across the State on a weekly basis. (Forty-seven new individuals were added to the distribution list serve this fiscal year.)
- Facilitated conference exhibits and/or information sessions regarding gender specific substance use disorder services and resources for pregnant and parenting women were provided reaching over 1,800 individuals.
- Provided training on pregnancy, substance use and statewide resources at 12 conferences or other events reaching over 420 participants.

- Provided ongoing technical assistance and consultation to 11 public health and behavioral health workgroups and task forces regarding gender specific substance use disorder services and resources for pregnant and parenting women located throughout the State.

Have Objectives Been Achieved?

Yes. Through outcomes evaluation efforts, statistically significant improvements in mental health and substance use disorder symptomology were observed. Pregnant women received prenatal care and, even when were admitted late in their pregnancy, showed birth outcomes that are better than the national averages for untreated substance using women. Overall mothers and children were engaged with health care and supported to access this. Children received needed developmental and behavioral health services. Mothers received evidence-based parenting services. Parents were linked with housing, education, and vocational services to further support their recovery and ability to provide stable healthy living environments for their children.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding of the NC Perinatal and Maternal and CASAWORKS for Families Residential Initiative and the Perinatal Substance Use Project is strongly recommended. Substance abuse treatment saves money. Untreated and mistreated mental illness and substance use costs governments, businesses, and families \$193.2 billion a year due to reduced earnings.

Investment in evidence-based treatment has a high rate of return. There are \$3.77 in benefits per dollar of treatment – a 56% rate of return, or \$2.05 in benefits per dollar of cost to the taxpayer. Treatment also creates a 7 to 1 ratio of benefits to costs to society - many of these savings are due to reduced crime and increased earnings of individuals after treatment.

Since the Substance Abuse Treatment Prevention Block Grant Set-Aside requirements began to guide the overall approach to gender specific treatment in North Carolina and nationally, over 20 years of research has shown improvements in treatment outcomes and the health of women and children served, and reduction in costs to society. Comprehensive evidence-based gender-specific and trauma informed substance abuse treatment improves the health and wellbeing of families, reducing costs to society and offering an opportunity to interrupt cycles of intergenerational poverty, trauma, and substance use, thereby improving the long term health of women and their children.

Consequences of Discontinuing Funding:

I. The discontinuation of the Perinatal/Maternal Substance Use and CASAWORKS for Families Residential Initiatives would negatively impact birth outcomes, child welfare, medical care, and emergency department usage of women seeking treatment for their substance use disorders. Pregnant

and parenting women lacking access to the appropriate type and level of substance use disorder treatment may result in:

- **An increase in preterm births, low birth weights, neonatal abstinence syndrome due to illicit opioid exposed pregnancies and/or infant mortality, including increases in lifetime cost of care for these children.**
- **An increase in child welfare involved families due to an increased risk of child maltreatment, the child welfare services involvement that follows, including the potential removal of children from custody and increased need for community foster home placements.**
- **An increase in the use of acute healthcare services, including community emergency departments for overdoses, alcohol poisoning, physical and sexual assault related injuries and domestic violence related injuries.**

Children in families that are able to access robust evidence-based treatment are less likely to experience future incidents of child maltreatment. A study done in North Carolina found that parents who participated in an integrated comprehensive treatment program with outpatient, residential, parenting, and other child health supports were 99% less likely to experience maltreatment recurrence than the comparison group ($p < 0.01$) (Pollock and Green, 2005). The initial investment in comprehensive evidence-based and evidence-informed treatment benefits families and communities in the long-term, as shown in findings from this study that selected as comparisons only families from communities that did not have a perinatal, maternal or CASAWORKS program within the county.

Research has also found that women attending gender specific specialized services are staying in treatment longer and thus having better post-treatment outcomes. (Grella, C. E., Joshi, V., & Hser, Y. I. (2000).

In addition to providing specialized services, treatment duration has also been found to have an impact on outcomes. Women in specialized programs were found in a 2007 study to have longer stays than those in standard substance abuse treatment. Gender specific and trauma informed treatment promotes continuing care and findings demonstrate the importance of treatment completion on long term outcomes (Claus, et. al., 2007). Treatment duration has long been found to be associated with better long term recovery and health and wellness outcomes for families.

II. The Substance Abuse Prevention and Treatment Block Grant is received from the Substance Abuse and Mental Health Services Administration (SAMHSA) and managed by the NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services. The Grant contains annual Maintenance of Effort (MOE) requirements for the expenditure of State funds for behavioral health care. Under section 1915(b) of the Public Health Service Act, States that are recipients of this block grant are required to maintain aggregate State expenditures for authorized activities at a level that is not less than the average level of such expenditures maintained by the State for the two-year period preceding the fiscal year for which the State is applying for the grant. The specific language in §96.123 Assurances is as follows: “(a) (9) *The State will for such year maintain aggregate State expenditures*

by the principal agency of a State for authorized activities at a level that is not less than the average level of such expenditures maintained by the State for the 2-year period preceding the fiscal year for which the State is applying for the grant as provided by §96.134;”

For this block grant the principal agency is required to maintain annual state expenditures that are equal to or exceed the designated Maintenance of Effort amount for these state funding expenditures. In the event that a State does not maintain or exceed this required MOE, the State will be penalized through a federal reduction in the amount of block grant funds that are awarded in the future, or through a required payback of federal funds. The block grant regulations make provision for State application to the Secretary of Health and Human Services for a one-year waiver of these MOE requirements due to one-time exceptional circumstances of the State. This waiver process requires the State to provide evidence of a past 12 months record of substantial increases in state unemployment levels compared to the previous year, and substantial decreases in state tax revenues compared to the previous year.

- III. Per SAPTBG regulations, the Perinatal Substance Use Project meets the State’s requirement to ensure that the availability of treatment to pregnant women is publicized, to refer the woman to a treatment facility that has the capacity to provide treatment services to the pregnant woman or if no treatment facility has capacity to admit the pregnant woman, to make available interim services to the pregnant woman, no later than 48 hours after she seeks the treatment service, to have a tracking system that tracks all open treatment slots available to pregnant women in the State and to continually update the capacity management system to identify treatment capacity for any such pregnant woman.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

Recommend that the Perinatal and Maternal and CASAWORKS Initiative continue efforts to inform health care and other community providers about the initiative and how to access the bed availability and referral line, to expand use of the capacity management system and better assure that women who need access to gender specific evidence-based services are aware of them and referred for treatment.

Provide technical assistance and training on gender specific trauma-informed evidence-based practices to providers and community service professionals, including on how to care for pregnant women on medication assisted treatment and how to manage opioid exposed pregnancies, in order to improve the overall access to and coordination of evidence-based care.

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

Perinatal Quality Collaborative of NC (PQCNC)

Open Window Service: Maternal Health

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- Mission - Identify key opportunities for improving perinatal care and execute time limited statewide quality initiatives.
- Goal - Meet legislative intent by supporting hospitals with the overall goal of improving perinatal health to NC families.
- Objectives - Consistently and constantly seek to develop strategies that spread best practice, reduce unnecessary variations in care, promote partnership with families and patients and optimize resources.
- The work of the PQCNC is all based on evidence-based and best practice strategies (**see Resources**) as supported by American College of Obstetricians and Gynecologists (ACOG).
- The services are administered by University of North Carolina at Chapel Hill and are available statewide.

Program Activities:

Provide quality improvement training on maternal, nursery and neonatal quality initiatives for 1,020 unduplicated healthcare professionals. More specifically, the three initiatives were:

- Conservative Management of Preeclampsia (CMOP)
- Treatment of Neonatal Abstinence Syndrome (NAS) in the Nursery
- Screening for Critical Congenital Heart Disease (CCHD)

Trainings on these initiatives were offered through quarterly Learning Sessions, webinars and weekly e-mail updates.

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$350,000
GRAND TOTAL		\$350,000

No state FTEs. This service is provided through a contract.

Program Performance

Problem or Need Addressed:

North Carolina has a high rate of infant mortality (ranked 41th in the U.S. in 2013), as well as a number of medical providers who are in need of perinatal health education.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Vendor contract performance measures are number of webinars held, number of learning sessions held, number of health care providers receiving perinatal health education and number of maternal, nursery and neonatal quality initiatives developed and implemented.

- Reached 93% of the target providers to be served in SFY 2014-2015 (1,100 target and served 1,020, likely secondary to provider schedules or interest in the issue presented).
- 6 learning sessions held (target 2); 3 maternal, nursery and neonatal quality initiatives held (target 3); 18 webinars held (target 24).

Have Objectives Been Achieved?

All objectives were met except one. This objective was impacted by provider schedules and/or interest in the specific topic area.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification**Rationale for Recommended Funding Level:**

Continued funding is recommended since this program uses evidence-based strategies and is meeting its stated objectives.

Consequences of Discontinuing Funding:

Discontinuing funding will limit the consistency of information and education to providers to address the variations of care for the population served among the approximately 9,100 perinatal health care professionals in North Carolina.

Recommendations to Improve Efficiency and Effectiveness**Recommendations for Improving Services, or Reducing Costs or Duplication:**

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors**Policy Issues or Other Relevant Information:**

None

Pregnancy Care Management (for Women Ineligible for Medicaid)
Open Window Service: Maternal Health

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The goal of the Pregnancy Medical Home (PMH)/Pregnancy Care Management model is to improve the quality of maternity care, improve birth outcomes, and reduce costs.
- A preterm birth prevention initiative, this program seeks to reduce costs as a result of more babies being born at term or closer to full term, thereby requiring fewer costly healthcare interventions, such as neonatal intensive care and pediatric specialty care and therapies.
- The model engages obstetrical providers as Pregnancy Medical Homes and local health departments as providers of Pregnancy Care Management services.
- This value added public-private partnership is a new and innovative approach to comprehensive patient-centered maternity care. These funds are utilized in serving women who are ineligible for Medicaid.
- Pregnancy Care Management uses evidence-based and evidence-informed interventions (**see Resources**) and is administered by health departments in the following counties that were funded: Buncombe, Cabarrus, Chatham, Duplin, Durham, Guilford, Henderson, Johnston, Mecklenburg, Montgomery, Moore, New Hanover, Pitt, Sampson, and Wake counties.
- The number of non-Medicaid pregnant and postpartum women served by these 15 counties in SFY 2014- 2015 was 1,049.

Program Activities (provided to all women served):

- 17 alpha-hydroxyprogesterone caproate (17P)
- Motivational Interviewing
- 5As Smoking Cessation
- Pregnancy Care Management Standardized Plan - Care Management Standards and Common Pathway
- Depression Screening Tool-Patient Health Questionnaire (PHQ-9)
- Intimate Partner Violence/Sexual Abuse Screening Tool
- Drug Abuse Screening Test (DAST-10)
- Alcohol Use Disorders Identification Test(AUDIT)
- Substance Abuse Screening Tool-Screening, Brief Intervention, and Referral to Treatment (SBIRT)

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$195,882
Appropriations	State	\$325,980
GRAND TOTAL		\$521,862

No FTEs, as program is carried out through local health department allocations

Program Performance**Problem or Need Addressed:**

Preterm births in North Carolina account for 11.6% of the total births in the State in 2014. Preventing preterm births reduces costly healthcare interventions, such as neonatal intensive care and pediatric specialty care and therapies.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

- The number and percent of unique patients contacted (at least one home visit, practice encounter, or community encounter with the patient) within 30 days of the date of a positive initial risk screen was $1,705/2,372 = 71.2\%$ (target is 80-100%).
- The number and percent of unique patients who were engaged and assigned an active case status within 30 days after the date of the positive initial risk screening was $941/2,372 = 39.6\%$ (target is 80-100%).

Some LHDs had vacancies and difficulty in hiring bilingual staff to implement the program. Two of the 15 sites met the threshold for this measure, while another 4 of the sites were in the 70th percentile. Each of the sites that are below the threshold will receive a follow up within the next 2 months to include a performance improvement plan with a corrective action plan. If they are unable to meet the minimal requirements, the funds will be redistributed to sites that are able to meet the requirements.

- The number and percent of unique patients who were deferred for "Unable to Contact" annually was $127/3,134 = 4.1\%$ (target 0-5%).
- The number and percent of unique patients who were deferred for "Refused Services" annually was $93/3,134 = 3.0\%$ (target 0-5%).

Have Objectives Been Achieved?

Two of the four objectives were met. The Local Health Departments have received intensive technical assistance and training, inclusive of appropriate system data entry, for this program. They are currently moving toward meeting the other two objectives.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification**Rationale for Recommended Funding Level:**

Continued funding is recommended since this program uses evidence-based and evidence-informed strategies and is meeting its stated objectives (or has an action plan for meeting remaining objectives).

Consequences of Discontinuing Funding:

- 1,049 pregnant women will not have access to Pregnancy Care Management services if funding is discontinued. This program assists them with access to care, care coordination among providers, connecting them to health and human services, and provides other education and support services.
- The Pregnancy Care Managers work closely with Pregnancy Medical Home providers to reduce costs by providing services that promote babies being born at term or closer to full term. If this service is not provided, it may result in more costly healthcare interventions, such as neonatal intensive care and pediatric specialty care and therapies, for babies who are born preterm.
- Discontinuing funding for Pregnancy Care Management services for these women could result in a higher cost burden for hospitals that may result in providing care for pregnant women and infants due to complications resulting from not being able to access prenatal care or not being able to receive coordinated prenatal care.

Recommendations to Improve Efficiency and Effectiveness**Recommendations for Improving Services, or Reducing Costs or Duplication:**

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors**Policy Issues or Other Relevant Information:**

None

<p>Pregnancy Medical Home Pregnancy Care Management (for Medicaid-Eligible Women)</p>

Description of Mission, Goals, Objectives and Functions**I. Pregnancy Medical Home:**

NC DHHS Division of Medical Assistance administers the Pregnancy Medical Home (PMH) program with Medicaid federal and State matched funding through a contract with North Carolina Community Care Networks (NCCCN). Launched in 2011, PMH is the first and only program in North Carolina that engages the entire community of providers who care for pregnant Medicaid beneficiaries across the state in a performance-driven model based on state-, regional- and practice-level analytics to meet clinical expectations and to implement best practice models of care. More than 90% of pregnant Medicaid beneficiaries, or 49,000 of the 54,500 Medicaid pregnancies in SFY14-15, received prenatal care from a PMH practice.

The PMH program is designed to: increase Medicaid beneficiaries' access to high quality prenatal care; prevent unnecessary cesarean deliveries; improve birth outcomes in the Medicaid population,

and reduce health care costs. Approximately 120,000 deliveries occur in North Carolina each year. More than 55% of *births* are covered by NC Medicaid, while 48% of NC *pregnancies* are covered by NC Medicaid for prenatal, delivery and postpartum care. Emergency Medicaid covers 7% of deliveries for low-income women who are not eligible for prenatal or postpartum Medicaid coverage.

The Pregnancy Medical Home program is designed to coordinate care for pregnant Medicaid beneficiaries who are at elevated risk of preterm birth, achieve positive clinical outcomes, and ensure the health of the mother during the prenatal and postnatal periods. Among Medicaid patients who received prenatal care in a PMH practice in SFY2015, women used private OB/GYN offices (67%), local health department maternal health clinics (18%), academic medical center OB clinics (12%) and other sites such as family medicine practices and federally qualified health centers. Identifying and caring for high-risk pregnancies early in the prenatal period impacts the outcomes for the woman and potentially the newborn, and can yield health care cost savings.

North Carolina Community Care Networks (NCCCN) utilizes PMH-eligible providers, including medical professionals such as family physicians and obstetricians, certified nurse midwives, nurse practitioners and physician assistants, who provide prenatal care to the pregnant Medicaid population. Providers who enroll in the PMH program agree to meet a set of clinical expectations. Provider engagement is promoted through financial incentives from Medicaid, as well as education, support, and technical assistance from their local NCCCN network, practice-level operational and outcomes data from NCCCN's Informatics Center, and partnership with a pregnancy care manager.

Each NCCCN network has a PMH physician and nurse team who promote the use of evidence-based care to prevent preterm birth with PMH practices in their network. NCCCN's informatics system, including outcome, quality and utilization data, enables each network's PMH team to identify best practice sites and outliers and provide feedback to individual practices. This is the only program that engages the entire community of providers who take care of pregnant Medicaid beneficiaries across the state in a performance-driven model based on state-, regional- and practice-level analytics to meet clinical expectations and to implement best practice models of care.

Identifying high risk pregnancies early in the prenatal period impacts the outcomes for the woman and potentially the newborn. Once identified, all women with one or more PMH priority risk factors are offered Pregnancy Care Management services in order to address each woman's preterm birth risk factors. NCCCN networks contract with local health departments for pregnancy care management services, provided by nurses and social workers who work with prenatal care providers to support the prenatal care plan. NCCCN and the NC Division of Public Health work in collaboration to oversee the quality and quantity of services provided by local health department pregnancy care managers.

Using the standardized Pregnancy Medical Home Risk Screening Form, PMH providers identify patients at elevated risk of preterm birth and refer them for pregnancy care management. Nearly 70% of the pregnant Medicaid population has at least one preterm birth risk factor, and more than 50% of pregnant Medicaid patients receives pregnancy care management services during their pregnancy. At any given moment in time, more than 16,000 pregnant Medicaid beneficiaries are actively engaged in pregnancy care management, or more than 50,000 annually.

Goals:

I. Pregnancy Medical Home Program

The goal of the PMH program is to improve birth outcomes, improve the quality of maternity care and reduce costs.

Specific performance objectives include:

- Maintain the rate of cesarean deliveries among women without a previous cesarean delivery and with a current term, singleton, vertex pregnancy below 16%.
- Reduce the rate of low birth weight (LBW) among Medicaid live births.
- Reduce the number of very low birth weight (VLBW) among Medicaid live births.
- Increase the number of women enrolled in the Pregnancy Care Management program.
- Increase the number of women who received standardized risk screening during pregnancy using the PMH Risk Screening Form.

II. Pregnancy Care Management

The goal of Pregnancy Care Management is to coordinate the care of women at elevated risk of preterm birth in order to promote a healthy birth outcome.

Specific performance objectives include:

- Provide Pregnancy Care Management to 50-70% of the pregnant Medicaid population in each county, depending on the prevalence of preterm birth risk factors in that community
- Ensure timely engagement in Pregnancy Care Management services
- Provide postpartum follow-up to promote adherence to the comprehensive postpartum visit and to address maternal health needs in the postpartum period, such as depression and contraception
- Close cooperation with the prenatal care provider

Program Activities:

Certain evidence-based practices are required of PMH providers in the participation agreement (contract) that they sign with NCCCN when they join the PMH program. These include:

- Avoidance of **elective delivery before 39 weeks** of gestation - The Joint Commission, National Quality Forum, the American College of Obstetrics and Gynecology (ACOG), the March of Dimes, and others have supported this practice following a major study published in 2009.
- Utilization of **17alpha hydroxyprogesterone (17p)** for prevention of recurrent preterm birth among women with a history of spontaneous preterm birth or preterm rupture of the membranes - ACOG, March of Dimes and other professional societies promote the use of 17p based on results from a randomized controlled trial published in 2003.
- Reduction in the **rate of primary cesarean delivery** (women having their first cesarean) – World Health Organization and U.S. Healthy People 2020 set targets to reduce the primary cesarean delivery rate in order to prevent surgical complications and risk of complications in subsequent pregnancies, given accumulating evidence showing the elevated risk of

morbidity and mortality with each additional cesarean delivery a woman has.

- **Standardized risk screening** using the PMH Risk Screening Form – ACOG promotes a set of validated questions to screen for domestic violence, which are included in the PMH Risk Screening Form; ACOG and the American Society of Addiction Medicine endorse the use of a universal verbal/written screening tool for substance use; the “Modified 4 P’s”, a substance use screening instrument validated for use with pregnant women, is included on the PMH Risk Screening Form. Screening for tobacco use is accomplished through use of the “5 As” model, which is endorsed by ACOG.
- **Depression screening**, using a depression screen validated for use with pregnant women, during the postpartum period – ACOG
- Collaboration with **pregnancy care management** – several studies have shown a link between community- and/or home-based care management services and a reduced risk of poor birth outcomes, particularly among low-income women.

Other evidence-based and emerging practices are addressed in PMH Care Pathways, documents that PMH physician leadership create to establish standards and best practices for all PMH providers.

Evidence-based practices in the PMH Care Pathways include:

- **Induction of labor among nulliparous patients** –criteria under which induction of labor is indicated and guidance about the use of cervical ripening to reduce the risk of cesarean delivery.
- **Management of Substance Use in Pregnancy and Statement on Opioid Use in Pregnancy** - Screening, brief intervention and referral to treatment is an evidence-based approach to addressing substance use in clinical practice and is endorsed in the obstetric setting.
- **Management of hypertensive disorders of pregnancy** – conservative management of non-severe preeclampsia and gestational hypertension and avoidance of scheduled delivery <37 weeks in the absence of other complications to prevent preterm delivery; scheduled delivery at 37-38 weeks to minimize risk of disease progression once at term; management of severe preeclampsia in appropriate setting, with criteria for inpatient management.
- **Management of perinatal tobacco use** – use of evidence-based interventions to address tobacco use in order to increase the likelihood of smoking cessation, including appropriate use of pharmacotherapy in prenatal and postpartum care.
- **Use of progesterone and cervical length measurement** – criteria for the use of cervical ultrasound screening to prevent overutilization and to ensure high-risk patients are screened appropriately; criteria for the use of progesterone therapy based on patient’s risk factors.
- **Postpartum care** –key components of the comprehensive postpartum visit, including appropriate timing for initiation of various contraceptive methods; guidelines for which patients need to be seen within 2 weeks of delivery based on medical/psychosocial risk factors (e.g., hypertension, depression); transition to primary care to improve inter-conception health and reduce risk of poor pregnancy outcomes in subsequent pregnancies, especially among women with preterm birth risk factors

Statutorily Required Functions:

None

Source of funds:

I. Pregnancy Medical Home (Data source BD 701)

PMH payments include fee-for-service financial incentives for PMH providers and a per member per month payment to NCCCN to implement the Pregnancy Medical Home model with providers in each NCCCN network.

Pregnancy Medical Home Fee for Service

SFY 14-15 Funding Source	Funding Type	Amount
State Appropriations	Non-Federal	\$2,210,573
	Federal	\$4,264,306
TOTAL		\$6,474,879

Pregnancy Medical Home per Member per Month

SFY 14-15 Funding Source	Funding Type	Amount
State Appropriations	Non-Federal	\$ 989,931*
	Federal	\$1,921,632
TOTAL		\$2,911,563

*Non Federal includes true up payments made at 100% State dollars. DMA plans to draw down the Federal share before the current FY ends.

II. Pregnancy Care Management

The per member per month payment to N3CN for Pregnancy Care Management is passed through in its entirety to local health departments for pregnancy care management service delivery.

Pregnancy Care Management per Member per Month – N3CN pass through to local health departments for pregnancy care management service delivery

SFY 14-15 Funding Source	Funding Type	Amount
State Appropriations	Non-Federal	\$8,294,480*
	Federal	\$13,720,499
TOTAL		\$22,014,979

* Non Federal includes true up payments made at 100% State dollars. DMA plans to draw down the Federal share before the current FY ends.

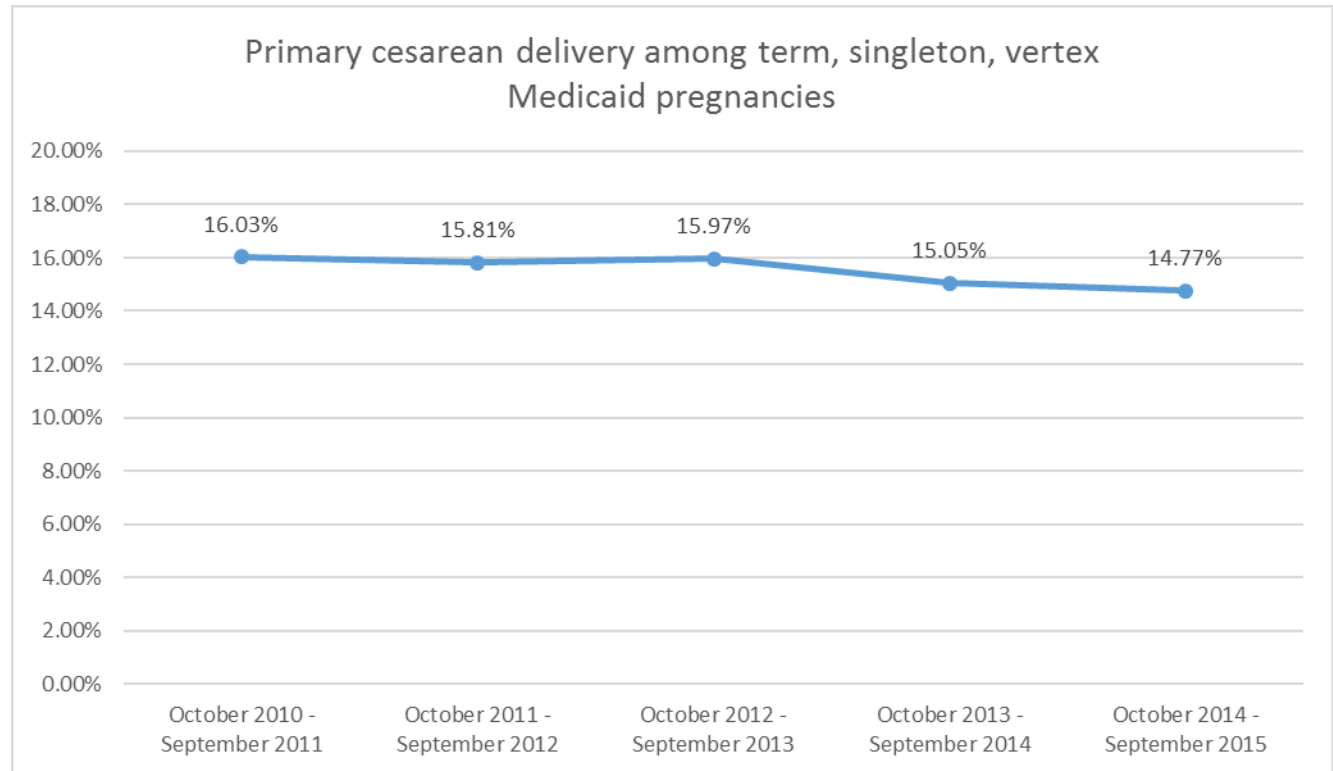
Program Performance

Problem or Need Addressed:

Preterm births in North Carolina account for 11.6% of the total births in the State in 2014. Preventing preterm births reduces costly healthcare interventions, such as neonatal intensive care and pediatric specialty care and therapies.

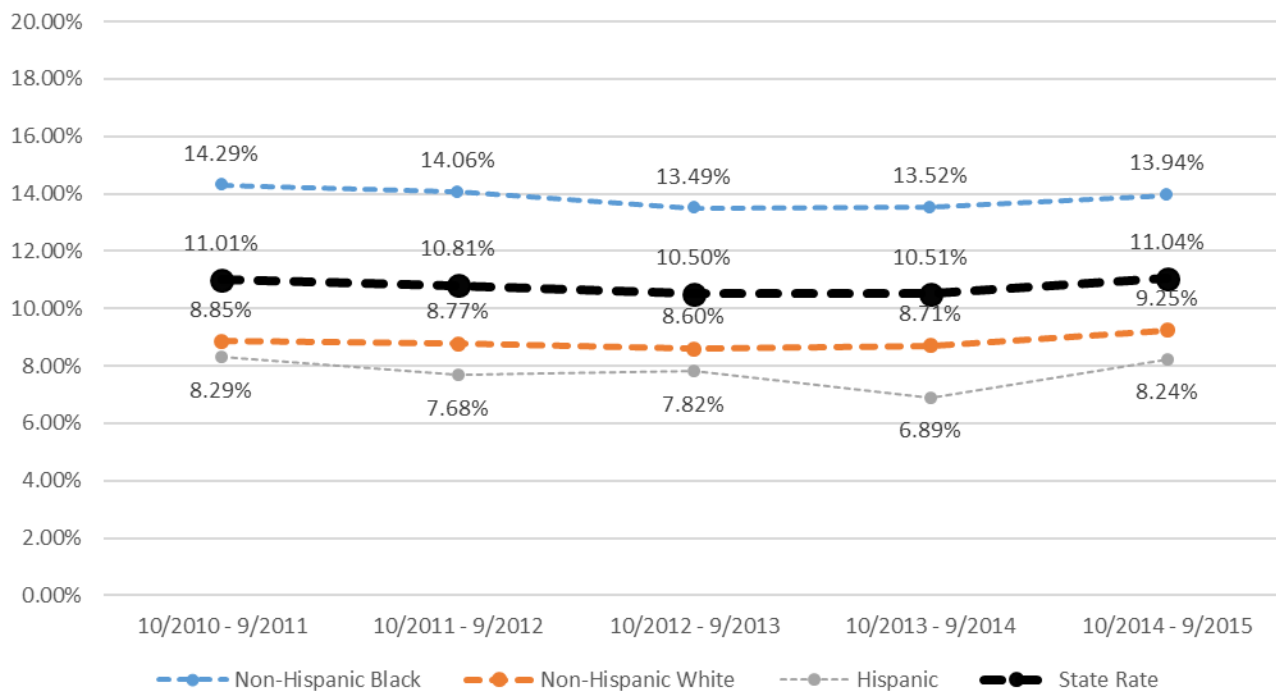
Performance Measures Defined and State Fiscal Year 2014-2015 Status:

The graphs and commentary on each below present the trends in PMH and pregnancy care management over several years. The following charts (Primary cesarean delivery, Low Birth rate and Very Low Birth weight) reports the baseline data beginning in October 2010 (prior to the implementation of the Pregnancy Medical Home). The last chart (Receipt of Pregnancy Care Management) begins the reporting date October 2012. This reporting time lag reflects the time required after the PMH implementation to identify and include pregnant women for the program. Positive impact is demonstrated for all measures.



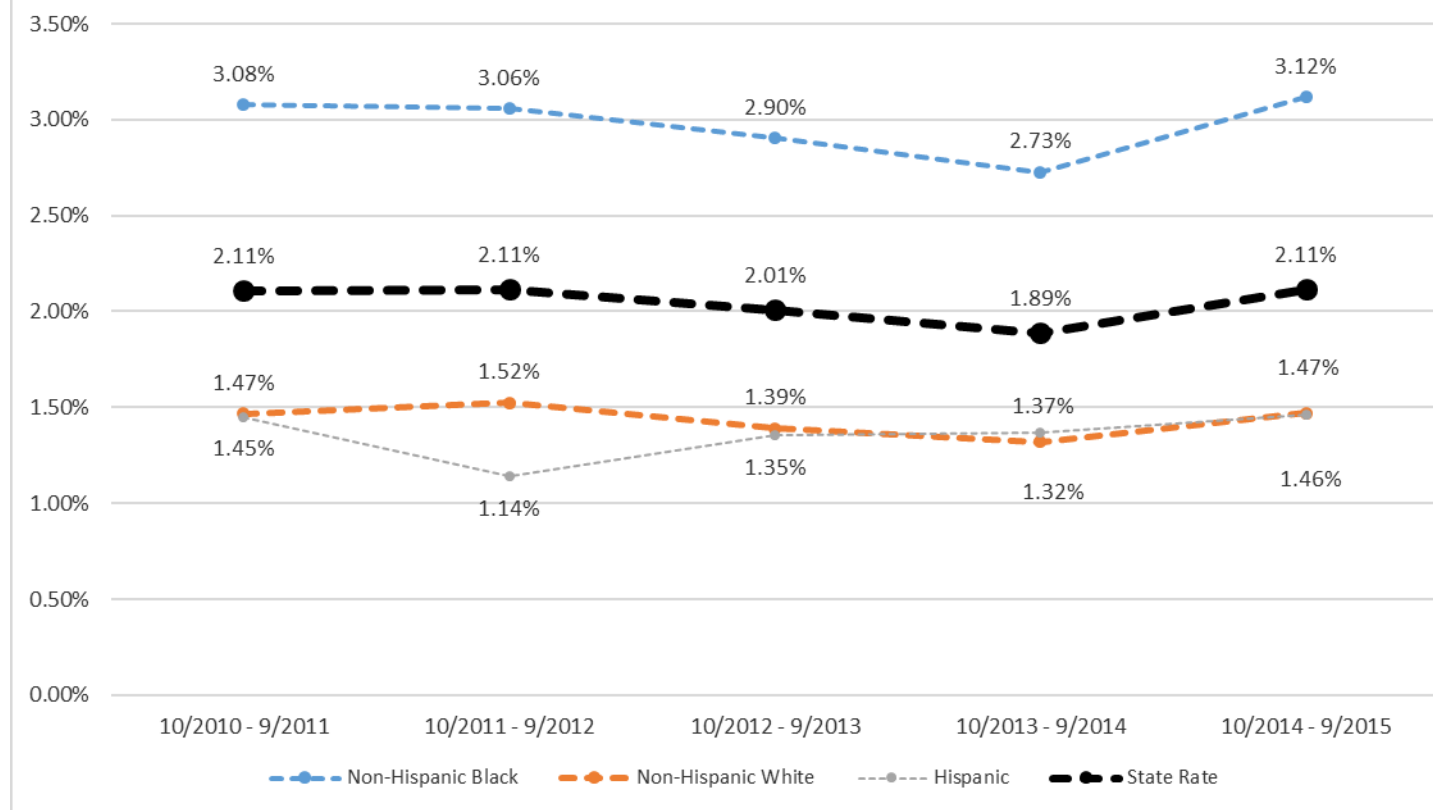
The cesarean delivery rate among women who have not had a previous C-section has decreased steadily since the launch of the Pregnancy Medical Home program in March 2011, resulting in cost savings and reduced risk of complications in future pregnancies for these patients. This rate is below national averages, as is the overall cesarean delivery rate in the NC Medicaid population.

Low Birth Weight by Race/Ethnicity among Medicaid Births, Oct. 2010 - Sept. 2015

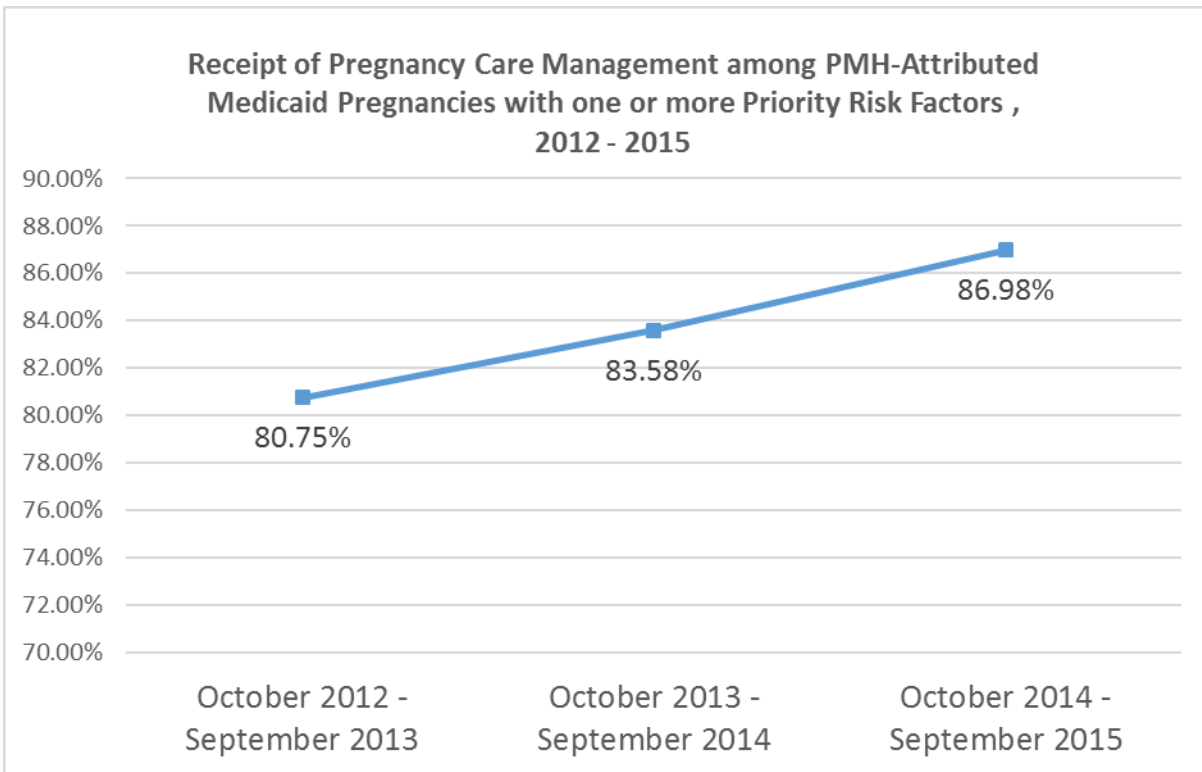


The rate of low birth weight (LBW), infants born weighing less than 2,500 grams or 5.5 pounds, among Medicaid births (excluding deliveries covered by Emergency Medicaid) had declined since the launch of the PMH program in April 2011 through 2014 but has shown a recent uptick, primarily driven by births among White and Hispanic women. Further analysis is needed to determine which of the multiple factors affecting low birth weight may be contributing to this recent increase. The overall decline in LBW among African-American births, and the narrowing of the racial disparity in African-American births, compared to White births, are especially important, given the persistence of this disparity. The small number of Hispanic births results in greater variability in the LBW rate for this population. The decline seen through 2014 is likely a result of more consistent use of evidence-based practices across the State, including the avoidance of elective delivery before 39 weeks of gestation and the use of progesterone to prevent recurrent preterm birth, both of which are contractual performance expectations of PMH providers. The 2015 uptick requires further analysis over an extended period of time to determine if this is normal statistical variation, a statistical anomaly, or an ongoing trend driven by increasing disease burden among women of childbearing age, increasing maternal age, increasing prevalence of obesity among women of childbearing age or other factors.

Very Low Birth Weight by Race/Ethnicity among Medicaid Births, Oct. 2010 - Sept. 2015



The rate of very low birth weight (VLBW), infants born weighing less than 1500 grams or 3.3 pounds, decreased from the launch of the PMH program through 2014. Due to the small number of VLBW infants, these rates are subject to instability and need to be evaluated over an extended period of time. Given previous perceptions very low birth weight could not be impacted, this is a promising finding. The 2015 uptick requires further analysis over an extended period of time to determine if this is normal statistical variation, a statistical anomaly, or an ongoing trend driven by increasing disease burden among women of childbearing age, increasing maternal age, increasing prevalence of obesity among women of childbearing age or other factors.



There has been an increase in the number of patients who received pregnancy care management among women receiving prenatal care in a PMH practice who were identified as having at least one priority risk factor. Pregnancy care managers have become increasingly skilled and innovative at locating and engaging patients to address risk factors for preterm birth and low birth weight. Pregnancy care managers and PMH providers have developed strong partnerships to ensure patients in greatest need receive pregnancy care management services.

The rate of unintended pregnancy in the North Carolina Medicaid population has decreased to <50% since the launch of the PMH program, while it remains 51% nationally across the entire population (not limited to Medicaid). The PMH program has focused on improved access to highly effective contraception in the postpartum period. Unintended pregnancies include pregnancies that were either mistimed or unwanted.

Source for all preceding tables and graphs: North Carolina Community Care Networks

Have Objectives Been Achieved?

I. Pregnancy Medical Home

The Pregnancy Medical Home program has successfully engaged almost the entire provider community serving the pregnant Medicaid population. The PMH program has ensured access to maternity care throughout the State and all high-risk OB providers across the State are enrolled with NCCCN as PMH practices.

Other achievements include:

- PMH care pathways have established evidence-based best practice expectations in 7 different domains of care, with continuous local technical assistance, education and data-driven reinforcement to ensure all PMH providers are adhering to expectations.
- Performance expectations related to cesarean delivery and low birth weight show significant improvement, including a narrowing of the racial/ethnic disparity in low birth weight. Further analysis of the changing characteristics of the pregnant Medicaid population is needed to understand the recent uptick on low birth weight, given the significant growth in Medicaid-eligible women of childbearing age in SFY 2014-2015.

II. Pregnancy Care Management

Pregnancy Care Management services are provided to approximately 50,000 women annually. At any given point in time, 16,000 women are actively receiving Pregnancy Care Management.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

I. Pregnancy Medical Home

Continued funding is recommended to support evidence-based and evidence-informed strategies. Current funding level allows for PMH objectives to be met through education, technical assistance, support and informatics for maternity care providers, carried out through the 14 NCCCN network OB teams. PMH financial incentives for providers continue to engage the provider community in the statewide model and to drive provider behavior to achieve performance expectations.

II. Pregnancy Care Management

Continued funding is recommended since this program uses evidence-based and evidence-informed strategies. The current PMPM payment for pregnancy care management supports a statewide workforce of nurses and social workers to coordinate care and address risk factors for Medicaid patients at elevated risk of preterm birth. This workforce is needed to serve women in every county in the State and to work in partnership with all of the nearly 400 PMH practices to carry out the clinical care plan.

Consequences of Discontinuing Funding:

I. Pregnancy Medical Home

If funding were to be discontinued for the Pregnancy Medical Home program, there would be a loss of the infrastructure developed over the past five years to ensure access to high quality prenatal care for the pregnant Medicaid population. This could affect 55,000 pregnant women with Medicaid coverage annually. Discontinuation would likely result in

- Reduced access to prenatal care for Medicaid beneficiaries given that the PMH model is the primary source of support to maintain provider engagement in serving the Medicaid population.
- Increased cost of maternity care, due to the loss of informatics to identify outliers who are not adhering to evidence-based practices.

II. Pregnancy Care Management

- Nearly 50,000 pregnant Medicaid beneficiaries each year would likely not receive services aimed at addressing their risk of poor birth outcome, coordinating their care, and ensuring receipt of needed services to achieve a healthy pregnancy outcome. This would likely result in increased cost of care, due to poorly coordinated care during the pregnancy, failure to receive postpartum care and contraception, which leads to a higher rate of rapid, repeat, unintended pregnancy.
- Pregnancy Care Managers work closely with Pregnancy Medical Home providers to reduce costs by providing services that reduce the risk of preterm birth. If this service is not provided, it may result in more costly healthcare interventions, such as neonatal intensive care and pediatric specialty care and therapies, for infants who are born preterm.
- Discontinuing funding for Pregnancy Care Management services for these women could result in a higher cost burden for hospitals that may result in providing care for pregnant women and infants due to complications resulting from not being able to access prenatal care or not being able to receive coordinated prenatal care.

Recommendations to Improve Efficiency and Effectiveness

None

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

None

Policy Issues or Other Relevant Information:

Over the course of SFY14-15, there was substantial growth in the number of women of childbearing age (ages 14-44) enrolled in Medicaid. Throughout SFY13-14, the monthly count of Medicaid-enrolled women ages 14-44 was approximately 290,000, but was 334,000 in July 2014 and increased to 370,000 by June 2015. This was driven by overall population growth in the State and by increasing numbers of women being identified as Medicaid eligible when they applied for health insurance via exchange plans in accordance with the Affordable Care Act. The impact on pregnancy outcomes of this significant growth is not yet known; impact will be determined as more newly-Medicaid enrolled women of childbearing age experience Medicaid-covered pregnancies over the next several years. This growth may result in a substantial increase

in the number of Medicaid deliveries in the State and the proportion of all NC deliveries they represent.

Young Families Connect <i>Open Window Service: Maternal Health</i>
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Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The program assists both young expectant and parenting women and men with the objective that they overcome challenges and achieve personal life goals, thus altering their life trajectories in a positive direction.
- The Young Families Connect Program (YFC) provides services that promote self-sufficiency, health and wellness, and parenting skills for expectant and parenting women and men ages 13-24 years living in Bladen, Onslow, Robeson, Rockingham and Wayne counties.
- YFC: 1) incorporates evidence-informed and evidence-based practices; 2) provides support services that are easily accessible; 3) creates effective local systems of care for young expectant and parenting women and men; and 4) identifies lessons learned from local initiatives to implement improvements in other programs serving young parents in North Carolina.
- Young Families Connect uses Evidence-based and evidence-informed strategies (**see Resources**).
- The following agencies are implementing the YFC program: Bladen County Health Department, Onslow County Partnership for Children, Robeson County Committee on Domestic Violence, Inc., Rockingham County Partnership for Children, and Wayne County Health Department. They provided the program to 467 participants in SFY 2014-2015 in Bladen, Onslow, Robeson, Rockingham and Wayne counties

Program Activities:

To achieve its goals, the YFC Program uses the following evidence-based or evidence-informed interventions with participants: Incredible Years Parenting Program; Motivational Interviewing; Reproductive Life Plan; and Read Set Plan Toolkit (which includes educational materials and resources that are used by program staff to promote preconception health and health care to women and men during the child bearing years as recommended by the Centers for Disease).

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Young Families Connect Grant	Federal	\$1,355,610
GRAND TOTAL		\$1,355,610

1 FTE

Program Performance

Problem or Need Addressed:

- North Carolina has one of the highest infant mortality rates in the country.
 - In 2014, there were over 120,000 births with an infant mortality rate of 7.1 per 1,000 live births.
 - A racial disparity remains in the State with the African American population having an infant mortality rate 2.5 times higher than the White population, and the American Indian population having a rate 1.8 times higher infant mortality rate than the White population.
 - Additionally, over 19% of women did not receive adequate prenatal care.
- The teen pregnancy rate for 2013 was 35.2 per 1,000 girls ages 15-19.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

The federal granting agency requires grantees to report on 12 performance measures for all participants and 6 measures for expectant and parenting participants under age 19. All YFC program objectives have been achieved for Year 2 (August 1, 2014-July 31, 2015).

Program performance measure data is listed in the table below.

All Young Families Connect Participants

Performance Measure	Performance Question	Response
0.01 Number and percentage distribution of eligible participants enrolled in the program, by participant category	How many eligible participants received at least one activity? Indicate the total number in each category below.	
	a) Expectant female teens (19 years and younger)	46
	b) Expectant male teens (19 years and younger)	4
	c) Parenting teen mothers (19 years and younger)	39
	d) Parenting teen fathers (19 years and younger)	4
	e) Expectant women (20 years and older)	85
	f) Expectant men (20 years and older)	13
	g) Parenting women (20 years and older)	240
	h) Parenting men (20 years and older)	36
	i) Children (of expectant or parenting participants [reported in a to h above)	515
0.02 Number and percentage distribution of non-participant extended family members	How many non-participant extended family members received at least one activity? Indicate the number served in each category.	
	a) Parent or Guardian of the expectant or parenting participant	4
	b) Grandparent of the expectant or parenting participant	1
	c) Spouse of the expectant or parenting participant	3
	d) Partner of the expectant or parenting participant	3
	e) Other Specify: sibling	1

Performance Measure	Performance Question	Response
0.03 Number and percentage distribution of expectant and parenting participants, by age group	What is the age of expectant and parenting participants? Indicate the total number in each category below.	
	a) 12 years and younger	0
	b) 13 years old	1
	c) 14 years old	0
	d) 15 years old (<i>This is a corrected total from the 6 month report.</i>)	4
	e) 16 years old	4
	f) 17 years old	13
	g) 18 years old	33
	h) 19 years old	38
	i) 20-24 years	347
	j) Over 24 years old (<i>These are YFC participants who entered the program at age 24 but turned 25 during Year 1 of their enrollment. This is a correct total from the 6 month report.</i>)	27
0.04 Number and percentage distribution of expectant and parenting participants, by Hispanic or Latino ethnicity	What is the ethnicity of expectant and parenting participants? Indicate the total number in each category below.	
	a) Hispanic or Latino	34
	b) Not Hispanic or Latino	244
	c) Unknown or not reported	189

Performance Measure	Performance Question	Response
0.05 Number and percentage distribution of expectant and parenting participants, by race	What is the race of expectant and parenting participants? Indicate the total number in each category below.	
	a) Asian (<i>This is a correct total from the 6 month report</i>)	1
	b) Black or African American	237
	c) American Indian or Alaska Native	49
	d) Native Hawaiian or Other Pacific Islander	2
	e) White	110
	f) More than one race (<i>This is a corrected total from the six month report.</i>)	32
	g) Unknown or not reported	36
0.06 Number and percentage distribution of expectant and parenting participants, by their current relationship status	What is the current relationship status of expectant and parenting participants?	
	a) Married	61
	b) Not married (never married, divorced, separated, or widowed) but living with a boyfriend/girlfriend/partner (cohabiting)	89
	c) Neither married nor cohabiting	258
	d) Missing	59

Performance Measure	Performance Question	Response
0.07 Number of expectant and parenting participants, by their current living arrangement at program entry	What is the current living arrangement of expectant and parenting participant? Indicate the total number in each category.	
	a) Lives alone or with child/children	172
	b) Lives with spouse/partner	117
	c) Lives with parent(s)	134
	d) Lives with spouse's/partner's parent(s) or other related adult(s)	32
	e) Lives with other unrelated adult(s)	23
	f) Lives in foster or group home	1
	g) Homeless/no permanent residence	5
	h) Other (Specify: grandparent(s), siblings, aunt)	13
	i) Missing	4
0.08 Number of expectant and parenting female participants that receives (in the last 4 weeks) financial or social support for themselves or their (youngest) child from the child's father	How many expectant or parenting female participants received any financial or social support for themselves or their (youngest) child from the child's father in the last 4 weeks? Indicate the total number in each category:	
	a) Financial support (examples include giving the teen or woman money, child support payments, buying clothes, diapers or other supplies for the baby, paying for doctors' visits?)	238
	b) Social support (examples include assisting with child care, going to doctor's visits, helping with chores, assisting with transportation)	232

Performance Measure	Performance Question	Response
0.09 Number of expectant and parenting male participants that provides (in the last 4 weeks) financial or social support for their (youngest) child or the child's mother	How many expectant and parenting male participants provided financial or social support for their (youngest) child or the child's mother in the last 4 weeks? Indicate the total number in each category:	
	a) Financial support (examples include giving the teen or woman money, child support payments, buying clothes, diapers or other supplies for the baby, paying for doctors' visits?)	47
	b) Social support (examples include assisting with child care, going to doctor's visits, helping with chores, assisting with transportation)	48

Performance Measure	Performance Question	Response
0.10 Number of expectant and parenting participants and their dependent children that received services directly from program staff, by type of services received	How many expectant and parenting participants received any of the following services directly from program staff? Indicate the number in each category below.	
	a) Health care services (including prenatal care, postpartum care, reproductive health, pediatric care, and primary care)	46
	b) Education support services (including tutoring services, credit recovery, individualized graduation plans, flexible scheduling, homebound instruction for extended absences, GED registration and enrollment, school re-enrollment assistance, college application assistance, financial aid resources or application assistance, dropout prevention services)	129
	c) Child care services	113
	d) Transportation Services	190
	e) Parenting skills information	187
	f) Healthy relationships information	146
	g) Concrete supports (such as food, housing, clothing, furniture)	155
	h) Case management services	467
	i) Home visitation services	128
	j) Vocational Services (including job training, career counseling, resume writing assistance)	29
	k) Other Specify: Disaster Clean Kit, Graduation incentives, Health insurance information, smoking cessation.	17

Performance Measure	Performance Question	Response
0.11 Number of expectant and parenting participants and non-participant extended family members that were referred for service(s) by program staff, by type of service referrals offered (NOTE: Category 3 grantees should enter any services for Violence Against Women in question 3.1)	How many expectant and parenting participants and non-participant extended family members were referred by program staff at least once for any of the following services? Indicate the number referred in each category below.	
	a) Health care services (including prenatal, post-partum care, reproductive health, pediatric care, and primary care)	85
	b) Education support services (including tutoring services, credit recovery, individualized graduation plans, flexible scheduling, homebound instruction for extended absences, GED registration and enrollment, school re-enrollment assistance, college application assistance, financial aid resources or application assistance, dropout prevention services)	152
	c) Child care services	44
	d) Parenting skills information	9
	e) Transportation Services	78
	f) Healthy relationships information	35
	g) Concrete supports (such as food, housing, clothing, furniture)	56
	h) Case management services	0
	i) Home visitation services	63
	j) Vocational Services (including job training, career counseling, resume writing assistance)	45
	k) Intimate Partner Violence Prevention services	58
	l) Other Specify: Court advocacy, Child Protective Services advocacy, Custody Clinic, Department of Social Services, electricity, English as a Second Language, Faith Based Organization, Immigration forms, Immigration services, Legal Aid, legal services, Literacy Project, Physical activity, Pre-Kindergarten, Pregnancy Group Home, Red Cross Emergency Assistance, rent, School System, YWCA.	31

Performance Measure	Performance Question	Response
0.12 Number of extended family members of expectant and parenting participants that were referred for service(s) by program staff	How many extended family members of the expectant and parenting participants were referred by program staff at least once for any services? Indicate the total number referred. (Extended family members may include any family member who is not eligible for services, such as the participants' parents, legal guardians, grandparents)	
	a) Health care services (including prenatal, post-partum care, reproductive health, pediatric and primary care)	6
	b) Education support services (including tutoring services, credit recovery, individualized graduation plans, flexible scheduling, homebound instruction for extended absences, GED registration and enrollment, school re-enrollment assistance, college application assistance, financial aid resources or application assistance, dropout prevention services)	4
	c) Child care services	1
	d) Parenting skills information	7
	e) Transportation Services	3
	f) Healthy relationships information	7
	g) Concrete supports (such as food, housing, clothing, furniture)	8
	h) Case management services	0
	i) Home visitation services	2
	j) Vocational Services (including job training, career counseling, resume writing assistance)	2
	k) Intimate Partner Violence Prevention services	0
	l) Other Specify: Faith Based Organization, Department of Social Services, Immigration, Legal Aid, Male Involvement, Physical activity	4

Young Families Connect - Expectant and Parenting Participants ages 19 and younger

Performance Measure	Performance Question	Response
2.1 Number and percentage distribution of expectant and parenting participants, by high school enrollment status and grade level	What is the number of expectant and parenting participants by their high school enrollment status? Indicate the number for each category below.	
	a) Enrolled, Freshman	2
	b) Enrolled, Sophomore	2
	c) Enrolled, Junior	5
	d) Enrolled, Senior	20
	e) Preparing for General Education Diploma (GED)	24
	f) Not enrolled in high school or preparing for the GED	34
2.2 Number and percentage of expectant and parenting high school students served that drops out during the school year	How many expectant and parenting high school students served dropped out of high school during the school year?	3
2.3 Number and percentage of expectant and parenting high school seniors served that graduates at the end of the school year	How many expectant and parenting students served who were high school seniors at enrollment or at the beginning of the program year that graduated from high school at the end of the school year?	8
2.4 Number and percentage of expectant and parenting participants that passes the GED exam during the program year	How many expectant and parenting participants passed the GED exam during the program year?	3

Performance Measure	Performance Question	Response
2.5 Number and percentage of expectant and parenting participants who either graduate from high school or obtain a GED that is accepted into an IHE during the program year	How many expectant and parenting participants who either graduated from high school or obtained a GED that are accepted into an IHE?	21
2.6 Number of parenting participants 19 years and younger that reports a new pregnancy during the program year	How many parenting participants 19 years and younger reported a new pregnancy during the program year?	2

Have Objectives Been Achieved?

All program objectives have been achieved.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification**Rationale for Recommended Funding Level:**

Continued funding is recommended since this program uses evidence-based and evidence-informed strategies and is meeting its stated objectives.

Consequences of Discontinuing Funding:

- If YFC funding is not continued, expectant and parenting women and men ages 13-24 years will continue to be at risk for health behaviors that contribute to chronic disease and poor birth and parenting outcomes.
- These same women and men will not have the support needed to implement positive parenting with their children or attain self-sufficiency needed to provide for themselves and their families.
- Additionally, not providing these activities as stipulated in the grant application puts receipt of current and future federal funds in jeopardy. Continued funding assures that expectant and parenting young women and men will receive these essential services in the five county program region.

Recommendations to Improve Efficiency and Effectiveness**Recommendations for Improving Services or Reducing Costs or Duplication:**

- There are no current recommendations for improving services, reducing costs or duplication.
- However, YFC management works closely with funded partner agencies to ensure that they are aware of programs with a similar scope or purpose. In the event of this, YFC sites are required to develop referral agreements and/or memorandums of understanding so that services are coordinated and participants are linked to the program that best meets their needs. Agreements are reviewed at least annually during site visits conducted by YFC program management.

Recommendations for Changes (Statutory, Budgetary, or Administrative):

None

External Factors**Policy Issues or Other Relevant Information:**

None

APPENDIX 2
Detail on DHHS
Child Health Programs

Care Coordination for Children, or CC4C (for Children Ineligible for Medicaid)

Open Window Service: Children's Preventive Health Services

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- CC4C is a population-based care management program for children birth to five years of age who are not eligible for Medicaid.
- It focuses on assuring access to high-quality, family-centered, preventive care for children who are likely to have long-term health and developmental concerns.
- CC4C uses evidence-informed interventions (**see Resources**) around follow-up of medical needs, development of care management plans, initial assessments, developing family centered goals and community referrals and follow-up. This information is based on recommendations for certification from the Case Management Society of America.
- CC4C is administered by local health departments and is available statewide.

Program Activities:

- Local Health Departments provide care management services to children based on the amount of funding they receive for non-Medicaid children, which includes children age birth to five years who are:
 - Children with special health care needs
 - Neonatal Intensive Care Unit (NICU) babies
 - In foster care and not linked to a medical home
 - Exposed to toxic stress in early childhood
 - High cost / high users of services
- Care managers:
 - Use assessments to identify the needs of the child and family.
 - Assure the child is well-linked to a medical home that serves as the “home” for all of the patient’s care, and coordinates all the care needed by the patient.
 - Work with the family and medical home to develop a plan to address the identified needs.
 - Link the family with services in their communities to assist in meeting any identified needs.
 - Use available resources to promote self-management and in so doing, empowers the family to develop a vision of how they can assume responsibility managing their child’s health.
 - Educate patients, medical homes and community organizations
 - Contact patients identified as being in the CC4C Priority Population through claims data analysis or through a CC4C Referral Form.
 - Develop a list of community resources available to meet the specific needs of the population as a locally-developed resource manual.
 - Communicate regularly with the medical homes serving children.
 - Prioritize face-to-face family interactions
 - Identify and coordinate care with community agencies/resources to meet the specific needs of the population

- Continually assess whether interventions are reaching the desired goal(s) and if progress is not being made, determine whether revisions are needed, or whether deferral should be considered.
- Work with local Community Care Network to ensure program goals are met.

Statutorily Required Functions:

SUBCHAPTER 45C - PUBLIC HEALTH SERVICES. 10A NCAC 45C .0101, ESSENTIAL PUBLIC HEALTH SERVICES, G.S. 130A-1.1(b) establishes categories of essential public health services and directs the Department to assure, within the resources available to it, that these services are available and accessible to all citizens of the State. Child care coordination is a specific service listed in statute to be provided under these essential public health services.

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$1,140,833
Appropriations	State	\$855,724
GRAND TOTAL		\$1,996,557

4.25 FTE State and Regional Consultants

Program Performance

Problem or Need Addressed:

- For SFY 2011-2012, 20% of children in North Carolina were identified as having special health care needs, or 81,842 children. Of those, approximately 38.8% were non-Medicaid eligible or 31,754 children. (*Source: Kids Count and the North Carolina State Center for Health Statistics*).
- For SFY 2014-2015, the rate of children ages birth to five in foster care was 6.7 per 1,000, or 4,067 children (*Duncan et al; see Resources section*).

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

- North Carolina Community Care Networks (NCCCN) is paid a Per Member Per Month (PMPM) for the CC4C program for the Medicaid beneficiaries, including the reporting on Medicaid beneficiaries receiving CC4C services. Previously, NCCCN produced reports for DPH on non – Medicaid individuals at no cost. Reduction of the NCCCN PMPM affected NCCCN's ability to continue to provide reporting on non-Medicaid individuals to DPH.
- Data for the Performance Measures is therefore not available for SFY 2014-2015. However, Data Dashboard Measures for SFY 2014-2015 are outlined below.

Data Dashboard Measures for SFY 2014-2015

Percent of non-Medicaid children age birth to five contacted by CC4C care manager

Benchmark: 5%

Target Range is: 8-12%

Actual March 2015: 8.2%

Percent of non-Medicaid children age birth to five in CC4C heavy/medium case status contacted by CC4C care manager

Benchmark: 3%

Target Range: 5-7%

Actual March 2015: 4.9%

Percent of non-Medicaid children age birth to five initially identified with a task of CC4C care manager and deferred for “unable to contact”

Benchmark: 8.5%

Target Range: 0-5%

Actual March 2015: 5%

Percent of non-Medicaid children age birth to five initially identified with a task by CC4C care manager and deferred for “refused services”

Benchmark: 8.5%

Target Range: z%

Actual March 2015: 1.3%

Have Objectives Been Achieved?

- Objectives were achieved in SFY 2014-2015 with the exception of the second measure which is 0.1% short of meeting the target range.
- At the current time, all performance goals have been met.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this program uses evidence-informed interventions and is meeting its stated objectives.

Consequences of Discontinuing Funding:

There would be no access to statewide care management for children who are at high risk medically and who face toxic stress situations, and who are not enrolled in Medicaid.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

The Division of Public Health needs to examine whether there would be benefit in using a funding structure similar to that used for the same services for the Medicaid eligible population.

External Factors

Policy Issues or Other Relevant Information:

None

Care Coordination for Children, or CC4C (for Medicaid-Eligible Children)

Description of Mission, Goals, Objectives, and Functions:

Care Coordination for Children (CC4C) uses Medicaid Federal and State matched funding to identify and provide statewide at risk care management for children who meet the Federal definition of children with special health care needs. CC4C is a population-based care management program for children birth to 5 years of age who are eligible for Medicaid.

CC4C is a specific service listed as an essential public health service. Expenditures for Children with Special Health Care Needs are required for the State to receive Maternal and Child Health Block Grant funds and this program helps to meet that need while meeting goals to decrease preventable hospital costs. The program focuses on:

- Assuring access to high-quality, family-centered, preventive care for children who are likely to have long-term health and developmental concerns.
- Through evidence-informed interventions, development of care management plans, initial assessments, developing family centered goals and community referrals, and follow-up.

Target Population

- Children with special health care needs as defined by the Title V Maternal Child Health Block Grant:
 - Chronic physical, developmental, behavioral or emotional condition
 - Expected to last at least 12 months
 - Requires health & related services of a type & amount beyond that required by children

- Children exposed to toxic stress in early childhood, including but not limited to:
 - Extreme poverty in conjunction with continuous family chaos
 - Recurrent physical or emotional abuse
 - Chronic neglect
 - Severe and enduring maternal depression
 - Persistent parental substance abuse
 - Repeated exposure to violence in the community or within the family
- Children in the foster care system and in custody of the Local Department of Social Service (DSS). In SFY14-15, the rate of children ages birth to five in foster care was 6.7 per 1000.
- Children in the neonatal intensive care unit who need assistance as they transition back to the community and linkage to a medical home
- Children flagged as priority populations based on above-expected potentially preventable costs, or specific pediatric high risk populations.
- Children identified potentially high cost or in need of care management services identified on data provided through claim based reports and real time admission, discharge and transfer hospital data.

The goals of the program are to provide care management services for the established risk group and to:

1. Identify and reduce barriers to care for identified children
2. Identify and link to community services for identified children
3. Encourage early identification and treatment of needs and medical conditions
4. Strengthen and empower the family to manage the child's care
5. Strengthen the relationship to the medical home
6. Improve quality of care, health outcomes, and reduces medical costs.

Program Activities:

Local Health Departments provide care management services to children based on the amount of funding they receive for Medicaid eligible children, which includes children age birth to five years who are:

- Children with special health care needs
- Neonatal Intensive Care Unit (NICU) babies

- In foster care and not linked to a medical home
- Exposed to toxic stress in early childhood
- High cost / high users of services

Care managers use assessments to identify the needs of the child and family and assuring the child is well-linked to a medical home that serves as the “home” to provide coordination for the child’s care. Additional functions include:

- Links the family with services in the community and uses available resources to promote self-management. Empowering the family to develop a vision of how to assume responsibility in managing their child’s health is powerful.
- Contact patients identified as being in the CC4C Priority Population through claims data analysis or through a CC4C Referral Form.
- Develop a list of community resources available to meet the specific needs of the population as a locally-developed resource manual.
- Communicate regularly with the medical homes serving children.
- Prioritize face-to-face family interactions
- Identify and coordinate care with community agencies/resources to meet the specific needs of the population
- Continually assess whether interventions are reaching the desired goal(s) and if progress is not being made, determine whether revisions are needed, or whether deferral should be considered.
- Work with local Community Care Network to ensure program goals are met.

Statutorily Required Functions:

SUBCHAPTER 45C - PUBLIC HEALTH SERVICES. 10A NCAC 45C .0101, ESSENTIAL PUBLIC HEALTH SERVICES, G.S. 130A-1.1(b) establishes categories of essential public health services and directs the Department to assure, within the resources available to it, that these services are available and accessible to all citizens of the State. Child care coordination is a specific service listed in statute to be provided under these essential public health services.

FUNDING
(Data source BD 701)

SFY 14-15 Funding Source	Funding Type	Amount
State Appropriations	Non-Federal	\$6,982,895*
	Federal	\$12,802,779
GRAND TOTAL		\$19,785,675

*Non Federal includes true up payments made at 100% State dollars. DMA plans to draw down the Federal share before the current FY ends.

Federal and State law direct NC DHHS to assure that the ten essential public health services are available and accessible to all citizens of the State [45 C.F.R. Part 156 and N.C.G.S. § 130A-1.1(b)]. Furthermore, the Title V Maternal and Child Health Services Block Grant legislation at 42 U.S.C. §705 requires States to use at least 30 percent of block grant funds for children with special health care needs and 30 percent of block grant funds for preventive and primary care services for children.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Children birth to 5 years of age who are at risk (as described above) are referred to CC4C by NICUs, hospitals, pediatric specialists, Department of Social Services (child welfare) or identified through other data sources. Those at risk or with special needs are then contacted by a CC4C case manager. Roughly two thirds of those contacted will go on to receive CC4C services.

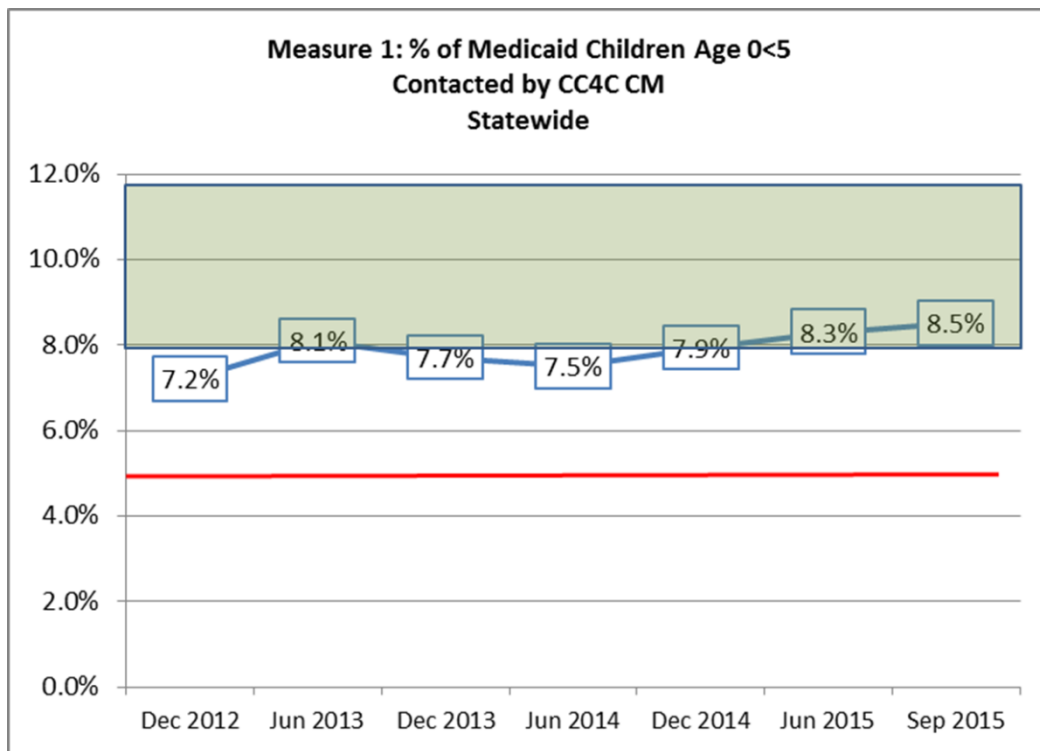
CC4C services are provided based on patient need and according to risk stratification guidelines. A comprehensive health assessment is completed to assist the care manager in identifying the child's needs, plan of care and frequency of contacts required to effectively meet desired outcomes. Patient-centered goals are developed based upon the needs of the child and in agreement with the family or caregiver. Contacts occur in multiple settings including the medical home, hospital, community, child's home, and by phone. All documentation for CC4C services is completed in the case management information system (CMIS.) CC4C care manager's work in close collaboration with NCCCN care managers and the medical home to meet the needs of the population.

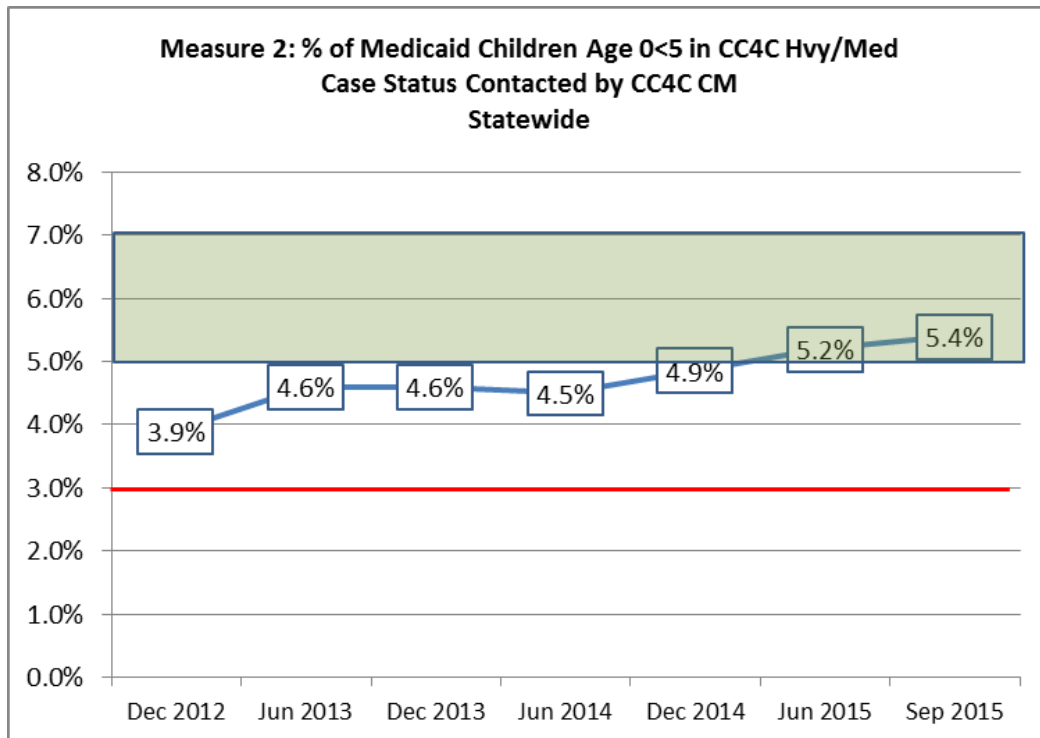
The Life Skills Progression (LSP) assessment is used in children identified as having experienced toxic stress to help identify the needs of the family and measures a parent's life skills (the abilities, behaviors and attitudes) that help a family achieve a healthy and self-sufficient level of functioning. The tool assesses 35 dimensions that look at relationships/support systems; education and employment; health and medical care, mental health and substance use/abuse and access to basic essentials. The LSP also assesses the child's developmental progress.

Medical Home Relationship

Each medical home serving children birth to 5 years of age has a specific CC4C care manager(s) assigned to work with their clients. This stable relationship supports effective and complete communication between the medical home and CC4C care manager and builds upon the medical home/ patient relationship.

Program performance measure data is listed in the table below:





Have Objectives Been Achieved?

- Objectives have been achieved.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended to provide care management services to the at risk population.

Consequences of Discontinuing Funding:

Without CC4C, Care Management services would not be provided to at risk population. Loss of these services would hamper the efforts of primary care clinicians who are identifying these children and families for early interventions affecting foster care children and for children discharged from the NICU. For Foster care and NICU population, this would have significant implications for short term costs. For all targeted populations served in CC4C, evidence indicates long term costs associated with increases in heart disease, diabetes, hypertension and obesity (Duncan et al).

Recommendations to Improve Efficiency and Effectiveness

None

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

None

Policy Issues or Other Relevant Information:

None

Child and Adult Care Food Program (CACFP)

Open Window Service: Child and Adult Care Food Program

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The mission of the Child and Adult Care Food Program (CACFP) is to ensure that children and adults who attend non-residential care facilities receive nutritious meals.
- The goals, objectives, and functions of the CACFP are to increase the participation, increase the number of breast-feeding friendly child care facilities participating in the CACFP, and increase access to healthy foods.
- Resources were developed in North Carolina as a part of a U.S. Department of Agriculture Team Nutrition Grant: CACFP Kids Eat Smart and Move More Nutrition Standards for Child Care
 - Physical Activity Standard for Child Care
 - Healthy Menus Planning Toolkit
- The CACFP is administered by the DHHS Division of Public Health and through schools and organizations including child care centers, family day care homes, at-risk after school programs, homeless shelters and adult day care centers. Services are provided statewide.

Program Activities:

This program provides financial support to non-residential care facilities to provide supplemental foods and nutrition education. Specific areas of focus include:

- Approving applications for at least 685 childcare institutions annually
- Monitoring and providing technical assistance to at least 33.3% of participating Institutions
- Increasing the number of Breastfeeding-Friendly Child Care facilities by 20%
- Increasing access to healthy foods by increasing the number of meals served by 600,000
- Providing nutrition and physical activity training to at least 50% of the Institutions participating on the CACFP
- Providing programmatic training to at least 50% of the Institutions participating on the CACFP

Statutorily Required Functions:

7 Code of Federal Regulations (CFR) Part 226

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Child and Adult Care Food Program Grant	Federal	\$101,515,767
Appropriations	State	\$307
GRAND TOTAL		\$101,516,174

27 FTEs

Program Performance**Problem or Need Addressed:**

There are approximately 113,500 children annually enrolled in day care institutions participating in the Child and Adult Care Food Program. The Child and Adult Care Food Program provides reimbursement to institutions to serve nutritious meals to their enrolled participants. This program provides healthy meals to children and adults who may otherwise not have access to healthy meals.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

The SFY 2014-2015 performance measure is as follows:

Average daily attendance of 130,000 participants

SFY 2014-2015 actual: 116,000 participants

Have Objectives Been Achieved?

Performance data indicates the program has an opportunity to improve performance to meet objectives. The CACFP experienced staff turnover and extended duration of resulting vacancies over the course of the reporting period. Significant effort has been put forth to fill vacancies and train staff to perform the activities outlined to meet performance objectives going forward.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification**Rationale for Recommended Funding Level:**

The Program is fully federally funded, is evidence-informed and is providing reimbursement for nutritious meals served to enrolled individuals in qualifying institutions. At least current funding level is recommended to maintain the required federal activities associated with this grant funding.

Consequences of Discontinuing Funding:

If the funding for the Child and Adult Care Food Program was discontinued, children and adults enrolled in day care may not be served healthy, nutritious meals.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

Conducting outreach activities to eligible but not enrolled adult and child day care centers and child day care homes.

Recommendations for Change (Statutory, Budgetary, or Administrative):

A national Institute of Medicine (IOM, 2011) study recommended changes in the meal pattern requirements for the program. If the changes were implemented, the report also recommended an increase in reimbursement for the meals served.

External Factors

Policy Issues or Other Relevant Information:

None

Child Health Services (Local Health Department Clinics)

Open Window Service: Children's Preventive Health Services

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The mission of Child Health Services clinics in local health departments (LHDs) is to promote improved child health by focusing on providing access to preventive health care for underinsured or uninsured children and Medicaid recipients. In providing this care, child health clinics:
 - Utilize Best Practice models in clinical service by adhering to Bright Futures (American Academy of Pediatrics standard of care for preventive health) guidelines in delivery of child health services.
 - Provide program services that are evidence-based or evidence-informed and targeted to local child health issues as identified by review of Action for Children County Reports, Eat Smart Move More data, local community assessment and other data sources.
 - Adhere to the Medicaid Health Check policies in delivery of care.
 - Use evidence-based health literacy strategies in child health clinics and home visits for newborn assessment and care to assure parents and clients can read, understand, and apply health information to make informed decisions to improve health outcomes.
- In addition to providing preventive care for children, Child Health Services' functions also include:
 - Using data for strategic planning to improve community level child health services.
 - Encouraging community partnerships, particularly between LHDs and Community Care of North Carolina, to address local issues regarding access and care.
 - Aligning workforce requirements and training to assure continuing competency for nurses.
 - Using continuous quality improvement models to focus on and improve clinic efficiency through Regional Child Health Consultants support.

- Participating in Regional Child Health Meetings that provide a community forum for information and discussion about clinical topics, policy, data and other relevant issues.
- Participating in Child Health Enhanced Nurse Training that provides registered nurses (RNs) an avenue for certification that allows them to deliver Medicaid for Children (HealthCheck/ EPSDT) periodic well-child checkups.
- Maintaining a written agreement with the local school district(s)/Local Education Agency (LEA) within its service area to reflect joint planning which includes:
 - Program goals and objectives;
 - Roles and responsibilities defined for each agency including a formal plan for emergency and disaster use of school nurses;
 - A description of the process for developing written policies and procedures; and
 - Provisions for annual revision of the agreement.
- Local health departments use best practices in clinical care and they use evidence-based or evidence-informed services in their community work (**see Resources**).
- Child Health Services are administered by 85 local health departments (LHDs) in collaboration with the North Carolina DPH Children and Youth Branch. Each LHD either serves directly as the child's medical home (those providing primary care) or links children, whenever possible, to a medical home. The children seen in LHD are usually children who are unable to pay and not served by the private medical providers.
- Services are available statewide.

Program Activities:

- Direct health care services include:
 - Child health information, referral, immunizations, and hemoglobinopathy screening upon request.
 - Follow-up of infants with conditions identified through newborn screening (e.g., PKU, hypothyroidism) upon request or as needed.
 - Routine periodic well-child preventive care to children not served by another health care resource.
 - Routine periodic well-child preventive care includes at a minimum: initial and interim health history; physical assessment and laboratory services; developmental evaluations; nutrition assessment; counseling, including anticipatory guidance; and referrals for further diagnosis and treatment.
 - In compliance with North Carolina Administrative Rules (10A NCAC 46.2040), LHDs may assure the provision of routine periodic well-child preventive care instead of providing them by maintaining a Memorandum of Understanding/Agreement with local health care providers documenting how these services are provided by them.
- In addition to direct medical services for the non-Medicaid population, local health departments can elect to use some of their funding for other evidence-based or evidence-informed child health initiatives. The following is a menu of initiatives from which they may choose, based on their communities' needs:
 - Innovative Approaches for Children with Special Health Care Needs
 - Child Fatality Prevention Strategies
 - School Nursing / School Nurse Supervision
 - Child Care Health Consultation

- School Nurse Case Management
- Whole School, Whole Community, Whole Child Model
- Reach Out and Read
- Triple P (Positive Parenting Program)
- Family Connects Home Visiting
- Nurse-Family Partnership Home Visiting
- Healthy Families America Home Visiting
- Youth Mental Health First Aid
- Child and Adolescent Depression Screening
- Obesity Prevention (Energizers, Families Eating Smart and Moving More, Eat Smart Cook Smart)
- Adolescent Pregnancy Prevention Programs (Straight Talk, Making Proud Choices, Wise Guys, Draw the Line/Respect the Line)
- Asthma Prevention Coalition Activities
- Child Injury/Death Prevention (Bike Helmet Education and Distribution, Car Seat Education and Distribution, Safe Child Care Programs, Safe Sleep Campaigns)

Statutorily Required Functions:

SUBCHAPTER 45C - PUBLIC HEALTH SERVICES. 10A NCAC 45C .0101, ESSENTIAL PUBLIC HEALTH SERVICES, G.S. 130A-1.1(b) establishes categories of essential public health services and directs the Department to assure, within the resources available to it, that these services are available and accessible to all citizens of the State. Child health services are listed in statute to be provided under these essential public health services. **SECTION .0200 - STANDARDS FOR LOCAL HEALTH DEPARTMENTS, 10A NCAC 46 .0201, MANDATED SERVICES** lists mandated services, including Child Health Services, which are required to be provided in every county of the State (and which local health departments shall provide, or ensure the provision of these services).

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$2,993,065
Appropriations	State	\$2,450,829
GRAND TOTAL		\$5,443,894

5 State and Regional FTEs

Program Performance

Problem or Need Addressed:

- Limited access to preventive health care for uninsured and Medicaid eligible children results in late identification of preventable illness and injury creating poor quality of life and unnecessary medical costs.
- Per the Kaiser Family Foundation State Health Facts and based on the March 2014 Current Population Survey: Annual Social and Economic Supplements, North Carolina's child uninsured rate is 7.8%.

- Per the Centers for Medicare and Medicaid Services (CMS) 416 data for FY14 (divided by the population estimates for CY14), the percent Medicaid eligible is 46.6% for children birth to age 20.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

- Unduplicated Non-Medicaid clients that had a well-child visit, age birth -21:
Baseline=9,923
Target=11,806
Actual SFY14-15=16,105
- Unduplicated Non-Medicaid clients that had a pediatric primary care visit, age birth-21:
Baseline=10,930
Target=11,454
Actual SFY14-15=15,461

Have Objectives Been Achieved?

Program objectives have been met.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this program uses evidence-based or evidence-informed interventions and is meeting its stated objectives.

Consequences of Discontinuing Funding:

- The numbers of uninsured children receiving preventive health visits (well child care) will decrease. Preventive health visits provide screenings and vaccinations to maintain health and identify illness early and prevent future illness and injury. These visits keep children healthy and ready to learn and help save health care costs associated with unidentified or advanced stage illness.
- Local Health Departments also act as a safety net for low income children in the community, and this function would disappear without ongoing funds.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

NC Childhood Lead Poisoning Prevention Program (NC CLPPP)

Open Window Service: Environmental Health

Current Environment

Description of Mission, Goals, Objectives and Functions:

- The goal of the NC Childhood Lead Poisoning Prevention Program (NC CLPPP) is coordinating clinical and environmental services and primary prevention activities aimed at reducing and eliminating childhood lead poisoning.
- Programmatic activities work towards assuring healthy and safe housing conditions and appropriate testing of children at risk for lead exposure.
- The program's objectives to meet this goal include providing preventive education and establishing screening guidelines; collecting, processing, and analyzing laboratory blood lead test results; monitoring and assisting in early case identification and medical follow-up; training investigators, contractors, and environmental health specialists in exposure source identification and remediation; and coordination of other activities related to lead poisoning prevention.
- NC CLPPP functions to provide for early identification, surveillance, clinical case management, health education, environmental investigation, and remediation enforcement in regards to children with elevated lead exposure.
- The program uses evidence-informed strategies or interventions and best practices (**see Resources**) set forth by the Centers for Disease Control and Prevention, U.S. Department of Housing and Urban Development Office of Lead Hazard Control and Healthy Homes, and the Environmental Protection Agency.
- The program is administered by the Division of Public Health, Environmental Health Section, Children's Environmental Health Unit, and is available statewide. Populations served include health care providers of services to children, child-occupied facilities, Head Start agencies, blood lead testing laboratories, property owners, housing contractors, expectant parents and families of young children including Medicaid recipients.

Program Activities:

- Conducting environmental state of practice workshops for local health department (LHD) staff concerning the content, organization and delivery of program services to ensure program goals are met in accordance with appropriate practice standards.
- Conducting clinical workshops for LHD staff and private health care providers concerning testing of children for lead poisoning and appropriate clinical follow-up and case management of children with elevated blood lead levels.
- Providing environmental investigations statewide for children with elevated blood lead levels and proactively at child-occupied facilities with suspected lead hazards.
- Providing technical assistance to property owners and managers in developing a remediation plan to reduce and safely control identified lead hazards.

- Managing a statewide surveillance system with an automated notification system used by clinical and environmental health care providers for identification of children in need of clinical and environmental follow-up services. The system also provides tracking of properties identified with lead hazards and those remediated.
- Providing ongoing consultation and technical assistance to LHDs and private health care providers to assure a coordinated system of service provision for all children including referral of children to WIC and the Children's Developmental Service Agency as appropriate and to Social Services and housing authorities as needed for lead-safe housing or additional medical and family support services.
- Providing ongoing technical assistance to blood lead testing laboratories for timely reporting of all blood lead test results for children under the age of 6 and technical support for electronic reporting including the maintenance of a secure site for upload of confidential laboratory files.
- Providing ongoing technical assistance, training and site consultation to parents, guardians, property owners, housing contractors and others on residential lead-safe maintenance, renovation and repair practices, and demonstrating methods to effectively and safely reduce environmental lead hazards.
- Providing ongoing surveillance of properties previously identified with lead poisoning hazards to ensure all maintenance and renovation activities are in compliance with an approved remediation plan.
- Assisting Head Start Agencies with meeting Program Performance Standards 45 CFR 1304.20(a)(1)(ii) by providing blood lead test results for children enrolled in Head Start.

Statutorily Required Functions:

- Monitoring of blood lead test results for children under 6 years old, which are received through a mandatory laboratory reporting requirement (N.C. General Statute 130A-131.8)
- Performing risk assessments and inspections to determine the presence of lead-containing hazards when the Department learns of a child with an elevated blood lead level or suspects lead hazards at a child-occupied facility (N.C. General Statute 130A-131.9A)
- Approving remediation plans for lead hazards found during these inspections (N.C. General Statute 130A-131.9C)
- Verification of compliance with remediation requirements and annual monitoring when necessary (N.C. General Statute 130A-131.9D and E)

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014*):

SFY 14-15 Funding Source	Funding Type	Amount
Medicaid	Federal	\$1,262
Appropriations	State	\$156,409
TOTAL		\$157,671

***Additional resources not captured in SFY 14-15 certified budget as of 9/18/2014**

CDC Childhood Lead Poisoning Prevention Surveillance Grant	Federal	\$311,705
Appropriations	State	\$336,513
Medicaid Federal Financial Participation (FFP)	Federal	\$165,195

9 FTEs

Program Performance

Problem or Need Addressed:

- As North Carolina housing stock ages, lead paint becomes accessible to children through the dust in their homes, direct mouthing of paint, and ingesting lead from the soil.
- In addition, the program continues to find non-paint related sources of lead exposure such as jewelry, toys, imported spices, herbal remedies and candy, and parental hobbies and occupations.
- Therefore, the program continues to monitor and coordinate blood lead testing of children ages 1 to 5 and environmental inspection of homes and child-occupied facilities, with the goal of prevention and reduction of health effects for children at risk for lead poisoning.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Outcome Performance Measure	Results
<p>The number of children tested for lead poisoning, ages one and two in SFY 2014-2015, out of the number of live births of North Carolina children in the previous years.</p> <p><u>Explanation:</u> GS 130A-131.8 requires all laboratories doing business in NC to report all blood lead test results for children less than six years of age and for individuals whose ages are unknown. Reports shall be made within five working days after test completion.</p>	<p>Data are not yet complete for this time period.</p> <p>To date, our reporting system indicates that approximately 48% of one- and two-year-old children were tested for lead poisoning in calendar year 2014; however, this is likely an underestimate. (<i>See Notes on Data below</i>)</p>

Notes on Data

- *Prior to 2013, the screening rate had increased every year since 1995. For 2013, it was 52.3%; and for 2012, it was 55.6%.*
- *Test results from the State Laboratory of Public Health, LabCorp and Mayo feed directly into the program's surveillance system.*

- *Results from other laboratories must be manually processed to conform to certain file specifications before being uploaded to the system. Therefore, there is a lag time before these results are incorporated.*
- *In addition, the availability of a point-of-care (POC) blood lead analyzers has resulted in a growing number of health care provider offices also serving as blood lead laboratories. Data quality from many of these POC laboratories is incomplete or inaccurate and requires considerable labor intensive follow-up by State program staff. This follow up can result in back-logs for data entry.*
- *Additional funding for support positions has been awarded through a grant from the Centers for Disease Control and Prevention (CDC). One new epidemiologist position was recently established and filled utilizing these federal funds; thus, the follow-up of incomplete/inaccurate data will be feasible going forward.*
- *A communication clarifying proper usage of the POC analyzers and reporting requirements was sent to all Medicaid providers in September 2015.*
- *Other trainings in October and November 2015 and new technical assistance resources have been added to the NC CLPPP website aimed at improving overall data quality as well.*

Have Objectives Been Achieved?

With recent changes noted above in Notes on Data, the percent of children ages one and two tested for lead poisoning is expected to rise.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continue current funding, as lead hazards still exist in North Carolina, and program service improvements have already been implemented.

Consequences of Discontinuing Funding:

- If the NC CLPPP did not exist, the likelihood of lead-poisoned children receiving the care that they need would be extremely low.
 - There would be no central office to provide coordination of multiple agencies to ensure proper case clinical and environmental coordination for lead-poisoned children.
 - Partners involved in this statewide effort include the State Public Health Laboratory, local health departments, pediatric health care providers, county public health nurses, county and state environmental health specialists, Medicaid, WIC and Head Start programs, refugee health services, and occasionally the Adult Blood Lead Surveillance program.
- Local health departments (LHDs), tribal governments, pediatric health care providers, and environmental health specialists would also not have access to lead poisoning prevention training or technical assistance on laboratory result reporting, clinical case management, and best practices for lead inspections.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None except as already noted.

Recommendations for Change (Statutory, Budgetary, or Administrative):

No recommendations at the present time, however, the program will continue to investigate options for improving the quality and timeliness of data provided by POC laboratories.

External Factors

Policy Issues or Other Relevant Information:

The Centers for Disease Control and Prevention (CDC) is scheduled to reevaluate the current reference value (blood lead action level) in 2016. Any changes to the current reference value of 5 ug/dL could have substantial impact on public and private health care providers since the number of children requiring clinical case management is determined by this action level.

Childhood Lead Poisoning Prevention Program – Laboratory Component *Open Window Service: State Laboratory Services – Testing, Training and Consultation*

Description of Mission, Goals, Objectives, and Functions:

- The laboratory component of the Childhood Lead Poisoning Prevention Program (CLPPP) is partially conducted by the State Laboratory of Public Health (NCSLPH), which follows prescribed procedures to ensure high-quality screening and communication of results and information.
- This ensures follow up as previously described, including appropriate mitigation and education activities.
- The State Laboratory of Public Health's Blood Lead Lab provides laboratory testing results to the North Carolina Childhood Lead Poisoning Prevention Program. The laboratory provides outputs to the Program which, in turn, develops evidence-based or evidence-informed strategies, best practice recommendations, and outcomes (**see Resources**).
- The service is statewide. The number of blood lead tests performed in SFY 2014-2015 was 92,856.

Program Activities:

- Performing blood lead test results for Medicaid-eligible children under 6 years old and in compliance with N.C. General Statute 130A-131.8.
- The laboratory administers a Quality Assurance Office that addresses quality issues associated with blood lead testing. The Office assures that the laboratory participates in proficiency testing, training, support, technical assistance, and consultation to blood lead testing stakeholders.

Statutorily Required Functions:

N.C. General Statute 130A-131 references the performance of blood lead test results for Medicaid-eligible children under 6 years old.

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Medicaid	Federal	\$422,844
GRAND TOTAL		\$422,844

4 FTEs

Program Performance**Problem or Need Addressed:**

See previous description

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

NCSLPH provides outputs which, in turn, assist with the development of evidence-based or evidence-informed strategies, best practice recommendations, and outcomes.

Have Objectives Been Achieved?

NCSLPH testing objectives are being achieved.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification**Rationale for Recommended Funding Level:**

Continue current funding, as lead hazards still exist in North Carolina.

Consequences of Discontinuing Funding:

- Approximately 92,856 Medicaid-eligible children in North Carolina will not be screened for blood lead levels.
- The identification of lead elevations that impact the lives of young children, prevent medical problems, reduce the severity of medical problems and provide patient management and treatment at the point in the medical system where it is the least expensive will not be available to North Carolina Medicaid-eligible children.
- Discontinuing funding for blood lead testing could result in higher cost burden for hospitals and healthcare providers that may result in providing care for children afflicted with elevated lead levels due to complications resulting from childhood lead poisoning.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

Cochlear Implant Services

Open Window Service: Genetics and Newborn Screening

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The purpose of this contract is to support comprehensive and multidisciplinary evaluation and treatment of communicative disorders related to hearing loss for children in North Carolina ages birth to 21.
- The contract pays for certain hearing-related equipment, physician, audiological, and speech-language services for families who cannot afford the high costs of these devices or services, and who do not qualify for other public assistance programs.
- The goal of early hearing detection and intervention (EHDI) is to maximize listening and language competence, school readiness, and literacy development for children who are deaf or hard of hearing.
 - Children with hearing impairment will fall behind their hearing peers in communication, cognition, reading, and social-emotional development without appropriate access to sound and opportunities to learn language.
 - Children diagnosed with significant hearing loss frequently need costly hearing-related equipment, otolaryngologic, audiologic, or speech-language services to achieve these goals.
 - While this hearing-related equipment may not restore or create normal hearing, it does give a deaf person a useful auditory understanding of the environment and/or help him/her to understand speech and learn language.
 - In order to be effective, the use of hearing-related equipment must be accompanied by appropriate and ongoing intervention services which include, but are not limited to, ongoing audiologic management, speech-language services, and otolaryngologic management.
- Medical best practices are utilized in these services (**see Resources**).
- The services are administered by the University of North Carolina (UNC) at Chapel Hill, which has the only resident cochlear implant team in the UNC system. Services are available to citizens statewide.

Program Activities:

- Provide hearing devices, including cochlear implants, hearing aids, and, when not provided by other resources, Frequency Modulation systems to children for whom these devices are medically appropriate and are enrolled in the program.
- Provide assistance to parents of children with cochlear implants in educational planning and placement.
- Provide ongoing audiological care of children with cochlear implants.
- Provide audiological evaluations of children who are deaf or hard of hearing. Many, but not all, evaluations will determine cochlear implant candidacy.
- Provide communication assessments on children who are deaf or hard of hearing. Enroll by the end of the contract period at least 35 new children not previously served by the program.
- Ensure by the end of the contract period that 100% of newly enrolled children receive hearing devices and that 75% of total enrolled children receive otologic, audiology, or speech related services at UNC Hospitals.
- Ensure by the end of the contract period that 17 newly enrolled children have or are candidates for cochlear implant.
- Ensure by the end of the contract period that 50% of newly enrolled children who are candidates for cochlear implantation will be age birth to three years.

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$519,919
GRAND TOTAL		\$519,919

No state FTEs. This service is provided through a contract.

Program Performance**Problem or Need Addressed:**

- The North Carolina Office of State Budget and Management 2012 State Population Projections indicated North Carolina had 2,732,181 residents under age 21 years.
- Women's and Children's Services (WCS) Web data indicated an incidence of hearing loss for infants born in North Carolina in 2011 of 1.6/1000.
- Based on this data, at least 4,371 children in North Carolina have significant hearing loss.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

- The number of unduplicated clients to receive comprehensive and multi-disciplinary treatment was projected at 250. 236 children were actually served.
- Percent of clients who achieved maximum communication competence through the use of hearing-related equipment and/or services, regardless of communication modality, by

showing positive speech, language and listening outcomes as measured by routine assessments in the their individualized case plans = 100%

- Cost per unduplicated client = \$2,079.68.
- Clients enrolled in Medicaid significantly increased in the contractor's overall caseload and those without coverage decreased. Since the program only pays for those children without another source of coverage, the contractor's caseload was 14 children short of the projected services for the contract. The contractor served all those without insurance who presented for care.

Have Objectives Been Achieved?

Objectives have been achieved in that the contract served all eligible clients for this service who were referred and met the financial criteria of having no other available funding. The actual number served varies slightly each year due to financial status of the clients referred.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since medical best practices are utilized in these services and the contract is meeting its stated objectives.

Consequences of Discontinuing Funding:

The consequences of not executing this contract are that approximately 250 children per year will not have access to appropriate hearing-related equipment and services. Children diagnosed with hearing loss will fall behind their hearing peers in communication, cognition, reading, and social-emotional development, leading to lower educational and employment levels in adulthood.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

Craniofacial Services

Open Window Service: Genetics and Newborn Screening

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The purpose of the Craniofacial Disorders Center contract is to provide optimal care for children birth to 21 with cleft lip, cleft palate, and other craniofacial anomalies through an interdisciplinary team-oriented approach.
- The service uses medical best practices (**see Resources**) determined for multiple disciplinary fields and an interdisciplinary, child/family-centered team approach.
- The University of North Carolina at Chapel Hill provides craniofacial treatment, and services are available to citizens statewide.

Program Activities:

- Provide quality comprehensive specialty medical care that is otherwise unavailable to children with cleft palate and other craniofacial anomalies. According to the American Cleft Palate-Craniofacial Association, these children are best managed by a multidisciplinary team with extensive experience in diagnosis and treatment of craniofacial anomalies.
- Provide multiple services, such as social work, pediatric dentistry, orthodontics, pediatric otolaryngology, pediatric genetics, craniofacial surgery, oral and maxillofacial surgery, plastic surgery, speech and language pathology, and psychology.
- Provide requisite ongoing comprehensive follow-up by a multidisciplinary team devoted to patient and family-centered care. This level of clinical expertise and multidisciplinary support is not locally available to most children and families in this state. Support provided through this contract improves access to this level of clinical expertise and multi-disciplinary follow-up for children throughout the state.

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$234,846
Appropriations	State	\$52,225
GRAND TOTAL		\$287,071

No State FTEs. This service is provided through a contract.

Program Performance

Problem or Need Addressed:

- The American Academy of Pediatrics defines children with special health care needs (CSHCN) as children or youth who have or are at risk for chronic physical, developmental,

behavioral or emotional conditions that require health and related services of a type or amount beyond that generally required. It is estimated that 16-18% of children age birth to 21 who have craniofacial anomalies would meet this definition.

- Genetic and environmental factors are the leading cause of birth defects; 5.7% of NC babies are born with a birth defect.
- Birth defects are the leading cause of infant mortality in North Carolina.
- Seventy percent of admissions to children's hospitals are due to genetically caused or influenced medical problems.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Genetic Craniofacial Contract:

Name	Measures	Baseline	Targets	Actuals
UNC-CH Craniofacial Genetic Center	Number of unduplicated patients who shall receive genetic evaluation, genetic counseling, and/or genetic test(s) with no other reimbursement mechanism	285	285	# of Unduplicated Clients—396 # of Units of Service Provided--2220

Have Objectives Been Achieved?

The program has met the stated objectives.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this service uses medical best practices and its meeting its stated objectives.

Consequences of Discontinuing Funding:

Approximately 400 children with craniofacial anomalies per year would not be served.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

Ongoing funding is recommended to continue these specialty services for children with no insurance coverage or financial source to provide the service.

External Factors

Policy Issues or Other Relevant Information:

None

Early Intervention

Open Window Service: Early Intervention

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The Early Intervention Branch (EI Branch) is the lead agency for North Carolina's Infant-Toddler Program which is implemented through local lead agencies, called Children's Developmental Services Agencies (CDSAs).
- Early Intervention's role is to provide supports and services to families and their children, from birth to three years of age, who have developmental delays and established conditions known to lead to such delays, with the ultimate goal of helping children achieve their maximum potential for learning.
- Early intervention services are designed to meet the developmental needs of an infant or toddler with a disability and the needs of the family to assist appropriately in the infant's or toddler's development, as identified by a team including the family, in any one or more of the following areas:
 - Physical development
 - Cognitive development
 - Communication development
 - Social or emotional development
 - Adaptive development
- Research shows that the 0-3 time period is critical. It offers a window of opportunity to make a positive difference in how a child develops and learns.
- Evidence-based, evidence-informed, and best practices (**see Resources**) suggest that providing routines-based assessments and interventions in children's natural environments are most effective in helping families of children with disabilities and serve to empower families to parent and teach their infants and toddler most effectively.
- The Early Intervention program is administered by the DHHS' Division of Public Health, Women's and Children's Health Section, Early Intervention Branch.
- Services are available statewide. 16 Children's Developmental Services Agencies (CDSAs) serve all children ages birth to age three with developmental disabilities and their families, in all 100 counties. Each CDSA covers a multi-county catchment area, with the exception of Raleigh and Mecklenburg, which each cover one county.

Program Activities:

- There are 16 local agencies, CDSAs that cover North Carolina's 100 counties. 12 of the 16 CDSAs are State CDSAs and four are contracted.
- Each CDSA has similar responsibilities and is required to, at a minimum:
 - Determine program eligibility

- Inform and explain to families what early intervention services are, explain billing processes, inform and explain parents' legal rights under IDEA
 - Provide eligibility evaluations or conduct assessments if an infant or toddler has an established condition that has a high probability of resulting in developmental delay
 - Provide service coordination and ensure a smooth transition from early intervention services to Part B services or other appropriate related or other services.
- Types of early intervention services, without limitation, include:
 - Assistive technology devices
 - Audiological services
 - Provision of auditory training and aural rehabilitation, speech reading and listening devices, orientation and training, and other services; provision of services for prevention of hearing loss and determination of child's individual amplification needs
 - Family training, counseling and home visits by social workers, psychologists, and other qualified personnel to assist the family of an infant or toddler with a disability in understanding the special needs of the child and enhancing the child's development;
 - Health services
 - Medical services
 - Nursing services
 - Nutrition services
 - Occupational therapy
 - Physical therapy
 - Psychological services
 - Service coordination (i.e., services provided by a service coordinator to assist and enable an infant or toddler with a disability and the child's family to receive the services and rights, including procedural safeguards, required under part C. Each infant or toddler with a disability and the child's family must be provided with a service coordinator).
- The EI Branch, as the identified lead agency for the State, helps to ensure compliance with the Individuals with Disabilities Education Act, as amended (IDEA), and specifically, with Part C of the IDEA and its implementing regulations (34 Code of Federal Regulations, or CFR § 303.1 through § 303.734).
- The EI Branch ensures compliance with these federal regulations through quality assurance and monitoring activities, including, but not limited to:
 - Reporting State performance on regulatory based indicators and annual progress on both compliance and results to the federal Office of Special Education Programs (OSEP) at the United States Department of Education and to the public via its website and other public means
 - Maintaining a State data system
 - Providing technical assistance, training and financial support to local programs
 - Ensuring that state and federal funds are spent timely and appropriately
 - Ensuring that appropriate early intervention services are based on scientifically based research, to the extent practicable, and are available to all infants and toddlers with disabilities and their families, including Indian infants and toddlers with disabilities and their families residing on a reservation geographically located in the State and infants and toddlers with disabilities who are migrant and/or homeless children and their families
 - Maintaining a comprehensive child find system

- Maintaining a central directory that is accessible to the general public and includes accurate, up-to-date information about – public and private early intervention services, resources and experts in the State; professional and other groups (including parent support, and training and information centers) that provide assistance to infants and toddlers with disabilities eligible under IDEA Part C and their families
- Includes a comprehensive system of personnel development

Statutorily Required Functions:

Individuals with Disabilities Education Act (IDEA), Part C's implementing regulations (34 Code of Federal Regulations, CFR § 303.1 through § 303.734)

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Infant and Toddler Grant	Federal	\$12,193,146
Appropriations	State	\$20,665,452
Medicaid	Federal	\$34,116,759
Insurance & Family Payments	State receipts	\$265,203
GRAND TOTAL		\$67,240,560

674 FTEs

Program Performance

Problem or Need Addressed:

- According to population data from North Carolina (April 30, 2015), there are 358,709 children ages birth to three in the State. Early Intervention provides services to slightly more than 10,100 children, which equates to about 2.8% of the population in this age group. The North Carolina Early Intervention program is at approximately the national median, in terms of percent of population served.
- From July, 2015 through October, 2015, there have been over 7,600 referrals to the Early Intervention program.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Required federal Annual Performance Reporting Indicators which are reported to the granting agency are:

1. Percent of Infants and toddlers with Individualized Family Service Plans (IFSPs) who receive the early intervention services on their IFSPs in a timely manner (within 30 days).
Target: 100%
Actual: 98.11%
2. Percent of infants and toddlers with IFSPs who primarily receive early intervention services in the home or community-based programs.
Target: 98.50%
Actual: 99.51%
3. Percent of infants and toddlers with IFSPs who demonstrate improved:

- a. Positive social-emotional skills (including social relationships)
 - Summary Statement 1*: Target: 73.50%
Actual: 70.74%
 - Summary Statement 2*: Target: 60.00%
Actual: 58.75%
- b. Acquisition and use of knowledge and skills (including early language communication)
 - Summary Statement 1: Target: 80:00%
Actual: 76.88%
 - Summary Statement 2: Target: 51.10%
Actual: 51.92%
- c. Use of appropriate behaviors to meet their needs
 - Summary Statement 1: Target: 78.00%
Actual: 77.14%
 - Summary Statement 2: Target: 58.00%
Actual: 57.42%

** Summary Statement 1: Of those children who entered the program below age expectations in this outcome area, the percent who substantially increased their rate of growth by the time they exit the program.*

** Summary Statement 2: The percent children who are functioning within age expectations in this outcome area by the time they exit the program.*

- 4. Percent of families participating in Part C who report that early intervention services have helped the family:
 - a. Know their rights Target: 75%
Actual: 80.45%
 - b. Effectively communicate their children's needs
Target: 72%
Actual: 77.19%
 - c. Help their children develop and learn
Target: 83%
Actual: 85.84%5.

5. Percent of infants and toddlers birth to 1 with IFSPs compared to national:

	Children Aged Birth to One	Population Aged Birth to One	Percent of Population Aged Birth to One
State Target:			1.10%
State Actual:**	1,358	119,904	1.13%

** State-wide population data are based on US Census Annual State Resident Population Estimates provided by federal Office of Special Education Programs (OSEP).

6. Percent of infants and toddlers birth to 3 with IFSPs compared to national:

	Children Aged Birth to Three	Population Aged Birth to Three	Percent of Population Aged Birth to Three
State Target:			2.70%
State Actual:**	10,010	360,826	2.77%

** State-wide population data are based on US Census Annual State Resident Population Estimates provided by OSEP.

7. Percent of eligible infants and toddlers with IFSPs for whom an evaluation and assessment and an initial IFSP meeting were conducted within Part C's 45-day timeline.
Target: 100%
Actual: 99.36%
8. Percent of all children exiting Part C who received timely transition planning to support the child's transition to preschool and other appropriate community services by their third birthday, including:
 - a. IFSPs with transition steps and services Target: 100%
Actual: 99.62%
 - b. Notification to LEA, if child potentially eligible for Part B
Target: 100%
Actual: 99.66%
 - c. Transition conference, if child potentially eligible for Part B
Target: 100%
Actual: 99.81%
9. Percent of hearing requests that went to resolution sessions that were resolved through resolution session settlement agreements. North Carolina does not need to report on this Indicator as Part B complaint processes have not been adopted by Part C program.
10. Percent of mediations held that resulted in mediation agreements. North Carolina did not need to report on this Indicator as there were less than 10 mediations. Our minimum "n" for reporting is 10.
11. The State's State Performance Plan (SPP)/Annual Performance Report (APR) includes a State Systemic Improvement Plan (SSIP) that meets the requirements set forth for this indicator. The SSIP is due April 1, 2016, so these data will be identical to those reported for Indicator 3(a) since this is the State identified Measurable Result (SiMR). The complete SSIP is due to OSEP on April 1, 2016 and will provide a comprehensive update on the strategies and implementation plan that was submitted to OSEP on April 1, 2015.

The above 11 indicators are reported on annually, in addition to data collection reports that are submitted. For FFY 2014-15, the U.S. Department of Education determined that North Carolina "meets requirements" of the IDEA.

- This determination was based on submission of the Annual Performance Report (Indicators 1-10), and
- The submission of the State Systemic Improvement Plan (Indicator 11).

Have Objectives Been Achieved?

The Early Intervention Branch's Infant-Toddler Program (EI ITP) was substantially compliant on Indicators (Indicator 1, 7 and 8(A)-(C)). OSEP sets the targets for each of these Indicators at 100%. The EI ITP:

- Provided timely services (30 days) to children and families at a 98.11% rate;
- Completed evaluations, assessments and conducted initial Individualized Family Service Plans (IFSPs) in a timely manner (45 days) at a rate of 99.36% of the time; and
- Ensured children and families had timely (at least 90 days prior to 3rd birthday) smooth transition plans with transition steps at 99.62% of the time, with appropriate notification to the State and Local Lead Agencies 99.66% of the time, and conducted the transition planning conference with the approval of the family 99.81% of the time.

In comparison, for Federal Fiscal Year (FFY) 2013, for these same three Indicators, the program was at 98.31% compliance for Indicator 1, 100% for Indicator 7, 100% for Indicators 8A and 8B, and at 98.87% for Indicator 8C,

The remaining Indicators (Indicators 2, 3(a)-(c), 4, 5, 6, 9, 10 and 11 are results indicators that have targets established by State stakeholders utilizing trend and baseline data over a period of approximately (5 years).

Data comparison for these results indicators are as follows:

	FFY 2013	FFY 2014
Indicator 2 - Services provided in home or community based settings	99.59%	99.51%
Indicator 3 - Infants and toddlers with IFSPs who demonstrate improved: (a) Positive social/emotional skills (including social relationships) Summary Statement 1: Summary Statement 2:	SS 1: 73.13% SS 2: 62.59%	SS 1: 70.74% SS 2: 58.75%
3(b) Acquisition and use of knowledge and skills, (including early language communication) Summary Statement 1: Summary Statement 2:	SS 1: 78.80% SS 2: 53.79%	SS 1: 76.88% SS 2: 51.92%
3(c) Use of appropriate behaviors to meet their needs Summary Statement 1: Summary Statement 2:	SS 1: 78.94% SS 2: 61.12%	SS 1: 77.14% SS 2: 57.42%
Indicator 4 - EI Services help: a Families know their rights b Effectively communicate their children's needs c Help their children develop and learn	a. 76.94% b. 73.98% c. 85.20%	a. 80.45% b. 77.19% c. 85.84%

	FFY 2013	FFY 2014
Indicator 5 - % of Infants and Toddlers Aged Birth to 1 with IFSPs compared to National	1.22%	1.13%
Indicator 6 - % of Infants and Toddlers Aged Birth to 3 with IFSPs compared to National	2.83%	2.77%
Indicator 9	N/A	N/A
Indicator 10 - Mediations that resulted in settlement agreements	Did not have minimum <i>n</i> of 10	Did not have minimum <i>n</i> of 10

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended because the program uses evidence-based practices and is meeting its stated objectives in a statewide manner and consistent with the Individuals with Disabilities Education Act.

Consequences of Discontinuing Funding:

- Failure to comply with federal requirements could result in loss of federal grant funding for the program.
- The IDEA grant represents a small percentage of funding for the Early Intervention program. The program relies largely on State funding and receipts from Medicaid.
- Failure to fund the Early Intervention program would result in loss of services to approximately **10,000** children annually.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

As part of the State Systemic Improvement Plan (SSIP), an analysis has been conducted on many aspects of the State program, including financial resources, governance, professional development and the overall infrastructure.

Recommendations for Change (Statutory, Budgetary, or Administrative):

- To effectively meet statutory and regulatory requirements, sufficient personnel are needed to evaluate, assess, and coordinate services for children.
- In some areas of the State, it is difficult to find qualified personnel who will travel to families' homes to conduct necessary assessments and evaluations within required federal timelines. Some CDSAs have less than 5 teams who are qualified and have different disciplinary expertise to conduct the required multidisciplinary evaluation for eligibility.
- Once a child is found eligible for services, some CDSAs have difficulty securing enough providers to provide early intervention services.

- Unfortunately many highly skilled clinicians, such as speech-language therapists, occupational therapists and physical therapists, are in short supply. When they are available and willing to work with infants and toddlers, they can earn more money working in clinics since they can see more individuals who travel to the clinic in a shorter period of time than they can if they were to travel to a family to provide intervention services in natural environments.
- As a result, one of several events may occur:
 - (1) A family is unable to obtain services because there is no available provider; the State is noncompliant in providing services within the statutory timeline of 30 days; and the child and family miss the opportunity to obtain critical services at an optimal time for effective intervention.
 - (2) A family may agree to travel to a clinic to obtain services, but the services are provided in a location/manner that is contrary to evidence-based practices and not in functional, natural environments.
 - (3) The services might be contingent on the provider being accessible to the parent; accepted by the parent; and affordable, if the parent is responsible for payment through his/her insurance co-pay, insurance deductible, if any, and a possible qualification for a reduction in out of pocket cost based on income and a sliding fee scale.
 - (4) Some families may also have to make difficult choices between reducing the number of sessions they decide to participate in based on factors such as travel, cost, and time.
- Based on the data provided in this report, the EI Branch is continuing to explore options to address these challenges, including any potential need for future restoration of previous FTE reductions in the 12 State-owned CDSAs.

External Factors

Policy Issues or Other Relevant Information:

Over the last few State fiscal years, the Early Intervention Branch has experienced a loss of positions and State appropriations, with the most recent reduction of 160 FTEs and \$10 million in State appropriations in SFY 2013-2015.

These financial and personnel losses have negatively impacted how CDSAs interact with families within their catchment areas.

- Staff caseloads have increased approximately 20%.
 - In November 2015, 56% (9 of 16) of the CDSAs reported increased caseloads for their Service Coordinator staff since funding reductions occurred. All 9 of these CDSAs are State-owned and operated CDSAs, which were significantly more impacted by funding reductions as compared to the 4 contract CDSAs.
 - This has resulted in less frequent contact with families and challenges in monitoring the compliance of service delivery by community providers (see **Figures 1 and 2**).
 - As noted in Figure 2, additional reduced revenues to the program (from Targeted Case Management billing) are an unintended but factual consequence of previous funding reductions.
- CDSAs are functioning without personnel that can focus on continuous quality improvement and direct resources towards self-assessment activities that would lead to improved services,

better results for families, and increased compliance with federal performance indicators. Since the funding reductions, the number of Quality Improvement/Assurance staff in the CDSAs has declined from 16 to 7. The task of ensuring quality services and data falls onto other staff positions, which often do not have the time or knowledge/skills to effectively serve in that role. **Figure 3** depicts an increase in the percentage of CDSAs with findings of federal non-compliance between SFY 2011-2012 and SFY 2014-2015.

- CDSAs have had to ask families to come to their offices in order to meet regulatory timelines, which is a practice contrary to what is known to be evidence-based and better for infants, toddlers and their families. Evidence supports the delivery of early intervention services in natural environments. **Figure 4** depicts this negative service delivery trend.

Figure 1: Total minutes of Early Intervention Targeted Case Management Provided FY 11-12 to FY 14-15

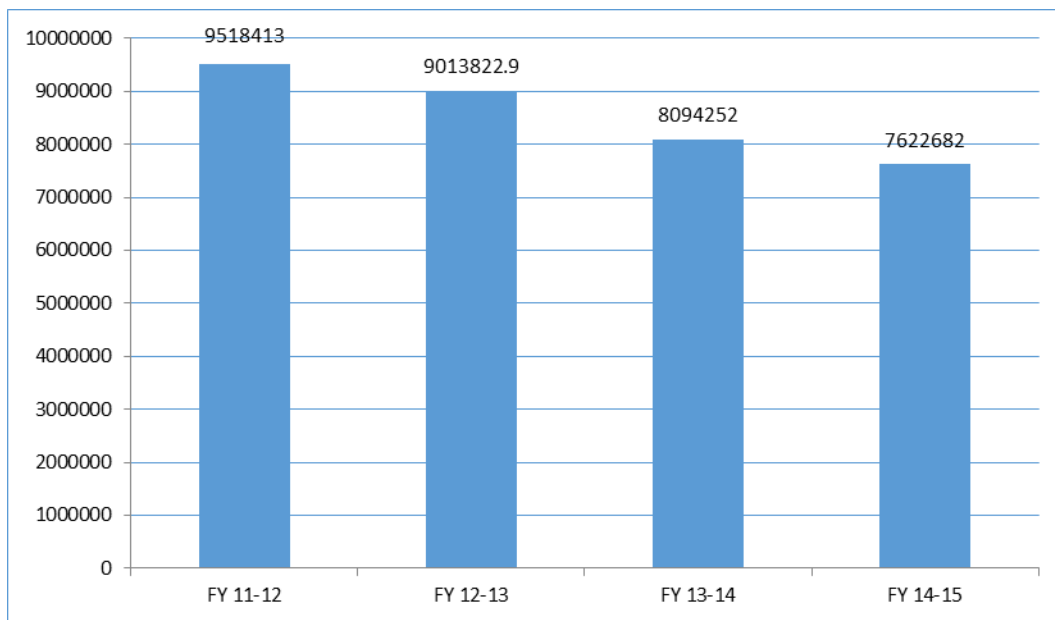
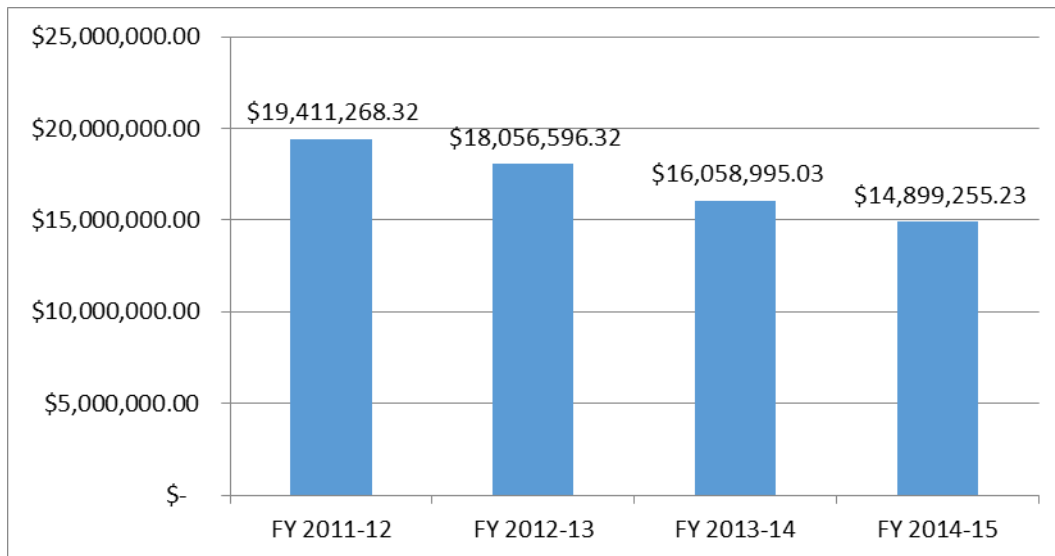


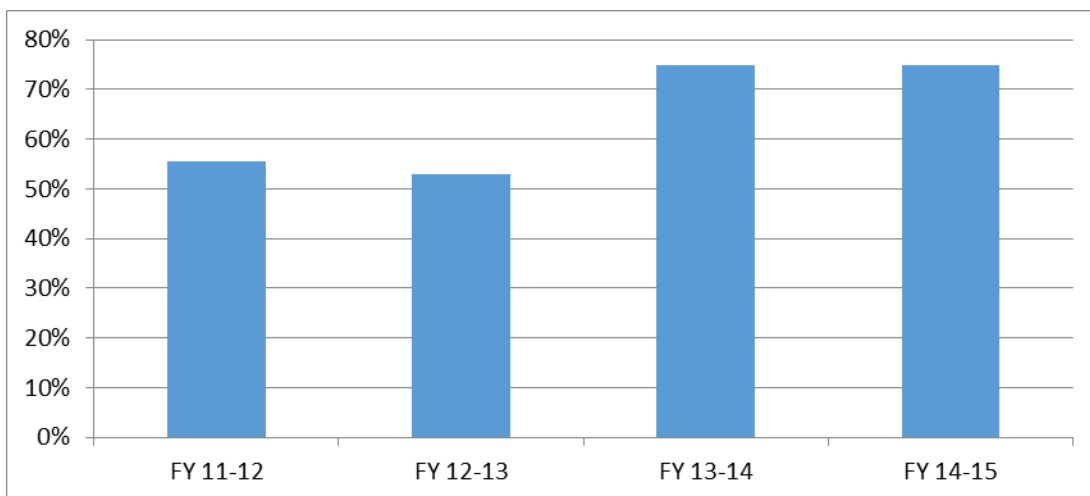
Figure 2: Total revenue from Targeted Case Management FY 11-12 to FY 14-15



Both charts indicate there has been a significant reduction in the amount of Targeted Case Management delivered by CDSAs in 2014-2015 when compared with 2011-2012. This reduction can be attributed to fewer Service Coordinators, who are the primary providers of Targeted Case Management. In addition, the remaining Service Coordinators are experiencing greater caseloads, and therefore are not able to see families for Targeted Case Management as often as needed.

Data Source: DPH Early Intervention Branch

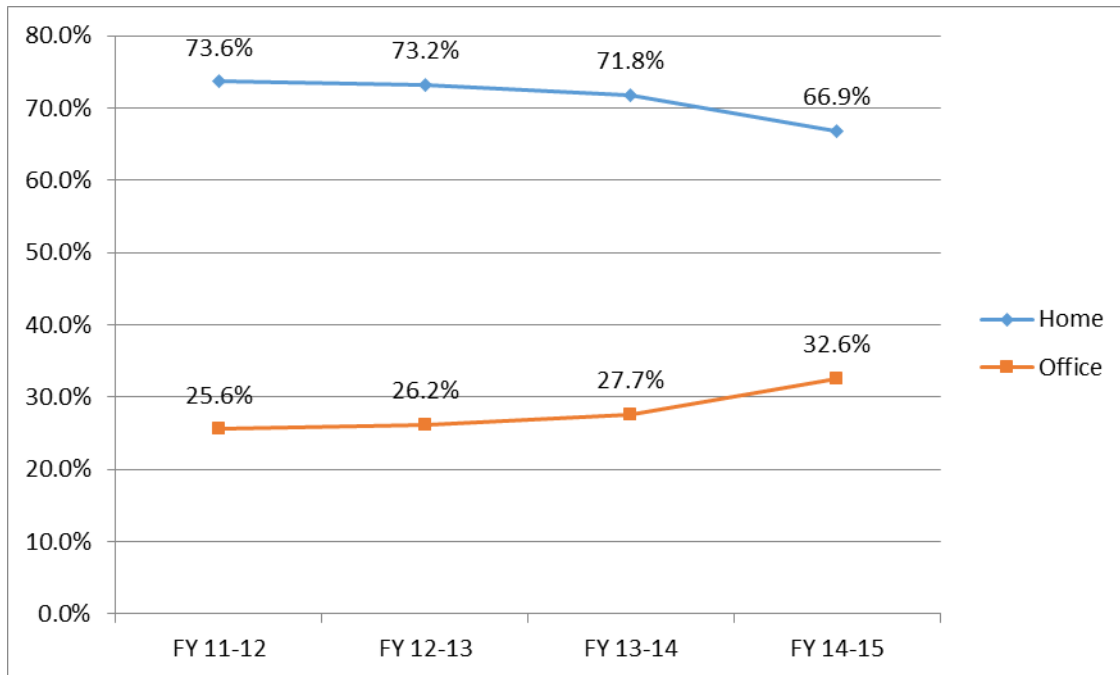
Figure 3: Percentage of CDSAs with Findings of Federal Non-Compliance FY 11-12 to FY 14-15



There has been an increase in the number of CDSAs with findings of non-compliance. As CDSAs are faced with staff and provider shortages, a larger number are having difficulty meeting federal Individuals with Disabilities Education Act (IDEA) requirements, such as referral, service delivery and transition timelines, timely and accurate entry of data into the State data system (HIS), and compliance with other statutory requirements as identified during monitoring activities.

Data Source: DPH Early Intervention Branch

Figure 4: Location of CDSA Evaluations FY 11-12 to FY 14-15



The percentage of evaluations for developmental delays being done in the Office setting has increased 27% (from 25.6% to 32.6%) from FY 2011-2012 to FY 2014-2015.

Data Source: DPH Early Intervention Branch

- Budget reductions have prompted program staff to examine the current Early Intervention model and how services might be delivered more effectively and efficiently with the program's current resources. As part of the State Systemic Improvement Plan (SSIP), an analysis has been conducted on many aspects of the State program, including financial resources, governance, professional development and the overall infrastructure.
 - One of the 5 implementation teams working on the SSIP, utilizing principles of implementation science, is focusing on the State's infrastructure and how to support the CDSAs to enable better and timelier provision of services to infants, toddlers and their families with current resources.
 - The program has examined other states' Early Intervention models, practices and systems. While some states have structures to their programs that are similar to what is currently in North Carolina, the model our State has is quite unique and any improvements to it will require a North Carolina specific solution. Specific areas of Early Intervention's infrastructure, such as governance, finance, personnel/workforce, accountability and quality improvement, quality standards, and data governance and management are being assessed to inform prioritization of change and to identify areas requiring change. This same information will also be used to inform our State Systemic Improvement Plan.
 - The Early Intervention (EI) Branch is also exploring the use of technology similar to telehealth to provide services to families in areas where there are insufficient numbers of clinical providers to meet the needs of families.

- Additionally, the EI Branch is exploring utilization of a centralized billing process that will serve to maximize reimbursement levels from insurance.
- While these are positive steps, it will likely take several years before benefits are yielded.

Genetic Counseling Services

Open Window Service: Genetics and Newborn Screening

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- Many genetically inherited or influenced abnormalities are not detectable immediately at birth and may take weeks, months or years to develop signs. The earliest possible detection of birth defects and genetic disorders may lead to the reduction of severity and prevention of complications which can save families and the State costly services for medical care, lost productivity and institutionalization.
- Early diagnosis and genetic counseling benefits patients and families by preventing or reducing the severity of complications, increasing treatment compliancy, and by understanding a disorder's risk of recurrence.
- The purpose of Genetic Counseling is to:
 - Reduce mental retardation, mortality, and morbidity from genetic disease and birth defects.
 - Provide genetic counseling follow-up to families and individuals for newborns with inherited metabolic or cystic fibrosis disorders and for children/family members with identified genetic diseases.
 - Promote awareness, prevention, and treatment of genetic diseases through education, early identification, diagnosis and intervention.
 - Coordinate genetic satellite clinics (12-30) per year - a safety net for North Carolina residents living in rural areas of the State.
 - Provide local health care professionals with information regarding appropriate reasons for a genetic referral and the importance of timeliness in making referrals, and serve as a resource for helping them determine when and how referrals are made.
- Use of best practices in clinical settings (**see Resources**) is based on the American Academy of Pediatrics (AAP) and the American College of Medical Genetics and Genomics (ACMG).
- Genetic counselors in North Carolina must be Board Certified through the national board of certification exam which is administered by the American Board of Genetic Counseling (ABGC).
- The DPH Children and Youth Branch lacks requisite facilities, technology and medical staff to provide the clinical services directly and it is more cost-efficient and effective to contract with facilities that have the appropriate infrastructure to provide such service. Administering agencies include private and public medical centers and state and private universities, the North Carolina DHHS State Laboratory of Public Health for metabolic testing, and State-funded genetic counselors. The services are available statewide.

Program Activities:

- The contract supports diagnostic, clinical management and genetic counseling services for infants and children with highly complex needs and their families.
- Contracted genetic services are intended to serve children (birth-21) and their families statewide who are at-risk for or have a genetic, teratogenic, or metabolic disorder and who are uninsured or underinsured as “payment of last resort.”
- Provide clinical genetic services, genetic counseling services, and genetic testing for patients from a variety of referral sources with highly complex needs and their families regardless of their ability to pay. Services conducted at medical facilities and outreach satellite clinics include clinical evaluations/services, laboratory studies, genetic counseling, follow-up, and management.
- Genetic services are provided to patients for:
 - Hereditary diseases such as neurofibromatosis, cystic fibrosis, and Marfan syndrome.
 - Hereditary and teratogenic induced deafness and blindness.
 - Congenital anomalies, chromosome defects and dysmorphic syndromes.
 - Intellectual Disabilities, autism and developmental delays.
 - Late onset genetic disorders including but not limited to hereditary cancer.
- Metabolic services are provided to patients with diagnoses identified through Tandem Mass Spectrometry Screening.

Statutorily Required Functions:

SUBCHAPTER 45C - PUBLIC HEALTH SERVICES. 10A NCAC 45C .0101, ESSENTIAL PUBLIC HEALTH SERVICES, G.S. 130A-1.1(b) establishes categories of essential public health services and directs the Department to assure, within the resources available to it, that these services are available and accessible to all citizens of the State. Genetic services is a specific service listed in statute to be provided under these essential public health services.

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$967,601
Appropriations	State	\$239,239
GRAND TOTAL		\$1,206,840

4 FTEs

Program Performance**Problem or Need Addressed:**

- Birth defects are a leading cause of infant mortality in North Carolina [NC State Center for Health Statistics, Birth Defects Monitoring Program, 2014].
- About one in every 33 babies is born with a birth defect [CDC, Center on Birth Defects and Disabilities, 2014].
- Forty percent of neonatal deaths are due to problems that are genetically based or influenced [National Centers for Health Statistics, 2012].

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

<u>Name of Contractor</u>	<u>Counties Served</u>	<u>Target # of Unduplicated Clients</u>	<u># of Unduplicated Clients</u>
UNC-Chapel Hill	All counties	2,030	3,715
East Carolina University	33 counties	76	11
Mission Hospital	16 counties	180	196
Carolinas Medical Charlotte	10 counties	900	747
Wake Forest Baptist Hospital	20 counties	800	715

Genetic Counseling Services four genetic counselors

<i>Pediatric Encounters</i> A “pediatric encounter” may be to facilitate genetic services for families, to explain a genetic diagnosis or testing, to arrange needed follow-up, to share resources or assist in a referral to another agency/support group, or any other contacts to assist the family who has a child with a confirmed or suspected genetic disorder	1051
<i>Specialty Clinics / Satellite Clinics</i> Specialty clinics are conducted by entities such as Cystic Fibrosis clinic, muscular dystrophy clinics, neurology, etc. where are genetic counselors take the opportunity to meet families on their caseloads while they already have an appointment to help reduce the days parents have to miss work. Satellite clinics are genetic travel clinics that are coordinated by Regional Genetic Counselors and staffed by genetic centers medical geneticists.	176
Consultations with Medical Providers about genetic information	95
Intake services such as obtaining family histories	207
Number of educational presentations (providers, schools, grand rounds, etc.)	24
Number trained at educational presentations	500

Have Objectives Been Achieved?

Two of the five hospitals met their performance measures. Program objectives have been achieved in that the contracts served all eligible clients for this service who were referred and met the financial criteria of having no other available funding. The actual number served varies each year due to financial need of the clients referred and hospital vacancies in this specialty area of service. Medical geneticists are difficult to recruit nationwide.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification**Rationale for Recommended Funding Level:**

Continued funding is recommended because this program uses best practices in clinical settings and is meeting its stated objectives.

Consequences of Discontinuing Funding:

- The most critical funding is to support metabolic services provided through the UNC-Chapel Hill contract center, and for the two FTEs that complete metabolic follow-up.
- The loss of other funding would eliminate a resource for 5,384 individuals with genetic service needs and with no other coverage, which may result in higher medical costs without the early identification and intervention accomplished through the contract services.

Recommendations to Improve Efficiency and Effectiveness**Recommendations for Improving Services, or Reducing Costs or Duplication:**

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors**Policy Issues or Other Relevant Information:**

None

Healthy Families America (Home Visiting)

Open Window Service: Children's Preventive Health Services

Current Environment**Description of Mission, Goals, Objectives, and Functions:**

- To work with overburdened families who are at-risk for adverse childhood experiences, including child maltreatment, abuse, and neglect.
- To support pregnant woman and parents of young children with the goal of preventing family violence, increasing self-sufficiency, and enhancing school readiness.
- Improve pregnancy outcomes by helping women engage in preventative health practices, including obtaining prenatal care, improving diet and nutrition, and reducing use of tobacco, alcohol, and drugs.
- To identify and provide comprehensive services to improve outcomes for families who reside in at risk communities.
- HFA uses documented evidence-based strategies and interventions (**see Resources**).
- This evidence-based home visiting model is being implemented by the following three agencies in North Carolina:
 - Non-profit entity: The Center for Child and Family Health, Inc. administers Healthy Families Durham (HFD) and serves approximately 55 families in Durham County within the East Durham Children's Initiative Neighborhood.
 - Non-profit entity: Barium Springs Home for Children administers Catawba Valley Healthy Families (CVHF) and serves approximately 45 families in Burke County in the Lesser Burke Geographic Catchment Area

- Local Health Department: Toe River District Health Department administers Mitchell-Yancey Healthy Families America (MYHF) and serves approximately 41 families in Mitchell and Yancey County.

Program Activities:

The funded Contractor is expected to serve a specific number of eligible families based on funding amount and to operate a Healthy Families America (HFA) program with model fidelity.

- Maintain a specific number of FTEs per staff type, including supervision, with staffs that meet the minimum education, background, and experience required by the Healthy Families America model developers.
- Complete orientation to the program and required HFA education sessions.
- Maintain resource and referral systems.
- Conduct outreach activities to educate community partners on the Healthy Families America program.
- Facilitate and support a leadership team and community advocacy board, and maintain an active community HFA advisory committee that is diverse, representative of counties served and not limited to health and human services professionals.
- Achieve HFA accreditation through the model developer within three years of implementation.
- Family Support Workers carry a caseload of no more than 25 families at any given time and provide home visits to enrolled participants per HFA model and with the prescribed frequency and duration. This includes weekly visits for at least the first six months after the child's birth or after enrollment if the family enrolls after the infant is born; visits after this time period may be less frequent. Home visits should, at a minimum, last one hour.
- Participate in ongoing training and technical assistance, and collect and review data using appropriate software.

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Grant	Federal	\$1,015,946
GRAND TOTAL		\$1,015,946

1 FTE

In addition, there are 5 FTE MIECHV staff that provide support for both Nurse Family Partnership and HFA (MIECHV sites only)

Program Performance

Problem or Need Addressed:

- In SFY 2013-14, 128,005 children received assessments for child maltreatment in North Carolina. Of these children, 23,529 were substantiated.

- HFA aims to address needs of families who may have histories of trauma, intimate partner violence, mental health, and/or substance abuse issues

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

- Decrease the percentage of children who have Emergency Department and/or urgent care visits related to child injuries, abuse and neglect, and/or maltreatment.
Baseline: 29%, Target: 0, Actual 2014: 36%.
- Increase the percentage of pregnant women entering prenatal care in the first or second trimester. **Baseline: 88%, Target: 100%, Actual 2014: 98%.**
- Increase the percentage of well-child visits received between birth and six months of age:
Baseline: 65%, Target: 100%, Actual 2014: 67%.

Notes on Data

- *For the federally-supported (MIECHV) parenting programs, DPH maintains aggregate data for reporting purposes so HFA data and Nurse Family Partnership data (next section) are assessed jointly,*
- *Emergency room usage is very difficult to affect positively in North Carolina because many emergency departments (EDs) actually advertise to the general public encouraging them to choose EDs over regular medical homes as the best avenue for medical care.*
- *The second and third data outcomes are both showing progress, but still need more work. Targets are values set which the program would like to attain over time. Trend data shows how much progress is being made, but it takes years to start seeing the desired impacts.*

Have Objectives Been Achieved?

Program objectives have improved from the baseline, but have not yet met the projected outcome objectives. Targets are values set which the program would like to attain over time, but it is anticipated multiple years are required before seeing the desired impacts.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended for this evidence-based program. Evidence supports the need for sustained investment over time to reach desired impacts. The program is trending positively and above baseline program objectives (excluding Emergency Department and/or urgent care visits; see Notes on Data).

Consequences of Discontinuing Funding:

There would be fewer opportunities to intervene effectively in supporting families through evidence-based programs, and fewer effective interventions to prevent child maltreatment for families. Number of families served in FFY 2014-2015 was 141.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

Nurse Family Partnership (Home Visiting)

Open Window Service: Children's Preventive Health Services

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The Nurse Family Partnership (NFP) is an evidence-based home visiting program developed on the basis of randomized controlled trial research to yield certain benefits for low-income, first-time mothers and their children. These benefits include helping mothers develop behaviors that enable them to have healthier pregnancies, to be better parents, to have emotionally and physically healthier children, and to attain greater economic self-sufficiency.
- Outcomes are achieved by implementing or enhancing evidence-based home visitation programs, replicated with model fidelity, that fill gaps to meet the needs of these families living in high risk communities in the State. Outcomes include, but are not limited to: improved pregnancy outcomes, prevention of child abuse and neglect, improved child health, and improved readiness for school.
- NFP uses documented evidence-based strategies or interventions (**see Resources**) and was administered by the following local health departments and non-profits in SFY 2014-2015 (11 State-funded Nurse Family Partnership sites covered 19 counties)
 - Gaston County NFP served 131 families
 - Robeson County NFP (Robeson and Columbus) served 119 families
 - Buncombe County NFP served 167 families
 - Northeast NFP (Northampton, Halifax, Hertford and Edgecombe Counties) served 128 families
 - R-P-M District Health Department NFP (Rutherford, Polk and McDowell Counties) served 123 families
 - Wake County NFP served 136 families
 - Guilford County NFP served 42 families
 - Southwest Partnership for Children NFP (Jackson, Macon, Swain and Haywood Counties) served 31 families
 - Rockingham Partnership for Children (Rockingham County) served 38 families
 - CareRing NFP (Mecklenburg County) served 90 families

Program Activities:

The funded Contractor is expected to serve first-time low-income mothers along with their children within a specified area and with model fidelity. This includes:

- NFP program staffs require prior approval from the National Service Office – Nurse Family Partnership (NSO-NFP) in collaboration with DPH. Minimum requirements for all nurse home visitors includes a Bachelor's degree in Nursing and current North Carolina Registered Nurse license. In addition, the nurse supervisor must hold a Master's degree in Nursing (or related degree).
- Mandatory education sessions include introduction to the theory base of the program model and model fidelity, research findings, client centered principles and therapeutic relationships.
- Maintain resource and referral systems that are kept current and made accessible to the team of nurse home visitors.
- Conduct outreach activities to educate community partners.
- Continue to maintain an active community NFP advisory board/committee that is diverse and not limited to health and human services professionals.
- Enroll first-time, low-income mothers in the NFP program. Nurse home visitors shall carry a caseload of no more than 25 mothers at any given time. Ideally, participants are enrolled early in the second trimester (14-16 weeks gestation); however, participants must be enrolled by 28 weeks gestation.
 - Provide home visits to enrolled participants per NFP curriculum and with the prescribed frequency and duration:
 - Data specified by the State and model developer must be collected for eligible families who receive services funded through this agreement addendum.
 - Each benchmark area required by the Federal funding includes multiple constructs. Funded sites must collect data for all constructs under each benchmark area.
- Nurses make weekly home visits with the mothers starting no later than the 28th week of gestation until their child's second birthday. Nurse-Family Partnership is a voluntary program and includes fathers whenever possible.

Statutorily Required Functions:

- There are no statutorily required functions.
- The Appropriations Act of 2013 appropriated \$509,018 of Title V funds and \$675,000 of State line-item appropriation for a total of \$1,184,018 to support Nurse Family Partnership in North Carolina. State appropriations were non-recurring for the biennium.

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$1,080,418
Appropriations	State	\$1,103,600
GRAND TOTAL		\$2,184,018

2 FTEs (1 FTE funded by Maternal and Child Health Block Grant/State Match; 1 FTE funded by 100% Federal Maternal, Infant and Early Childhood Home Visiting Grant-MIECHV)

In addition, there are 5 FTE MIECHV staff who provide support for both NFP and HFA (MIECHV sites only)

Program Performance

Problem or Need Addressed:

- In SFY 2014-2015, there were 20,454 first-time low-income mothers who gave birth in North Carolina.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

The following chart and narrative provide NFP program measures and results for SFY 2014-2015.

Nurse-Family Partnership Site	Health Department or Non-Profit	Total # Families Served	Total Nurse Home Visitor (NHV) FTEs	MIECH V NHV FTEs	Families served by MIECH V FTEs	Title V (Federal/State Match) NHV FTEs	Families served by Title V FTEs	General Assembly (GA) Appropriation (OO, AR, 1V) NHV FTEs	Families served by State GA FTEs	Non-State/Federal NHV FTEs	Families Served – Non-State/Federal Funding
Forsyth	Health Dept.	155	5							5	155
*Gaston	Health Dept.	131	4	4	131						
*Robeson / Columbus	Health Dept.	244	8	4	119					4	125
*Buncombe	Health Dept.	219	8	1	36	1.5	37	3	94	2.5	52
*NE NFP Collaborative	Health Dept.	128	4	4	128						
Cleveland	Health Dept.	129	4							4	129
Pitt	Health Dept.	114	4							4	114
*Rutherford /Polk/McDowell	Health Dept.	123	4			4	123				
*Wake	Health Dept.	136	4			4	136				
*Guilford	Non-Profit	165	5					1.5	42	3.5	123
*SW Child Development	Non-Profit	62	4					2	31	2	31
*Rockingham Partnership for Children	Non-Profit	38	2					2	38		
*CareRing	Non-Profit	206	7					3	90	4	116
Eastern Band of Cherokee	Tribal	69	2							2	69
NFP Totals		1919	65	13	414	9.5	296	11.5	295	31	914

*State-funded, in whole or part.

MIECHV = Maternal, Infant and Early Childhood Home Visiting Grant

NHV = Nurse Home Visitor

FTE = Full-Time Equivalent

Title V = Maternal and Child Health Block Grant with State Match

1V/00 = State Appropriation; AR = 100% Federal Title V

Additional NFP Measures and Results are as follows:

- Increase the percentage of pregnant women entering prenatal care in the first or second trimester. **Baseline: 88%, Target: 100%, Actual 2014: 98%.**
- Increase the percentage of well-child visits received between birth and six months of age: **Baseline: 65%, Target: 100%, Actual 2014: 67%.**

Notes on Data

- *For the federally-supported (MIECHV) parenting programs, DPH maintains aggregate data for reporting purposes so HFA data and Nurse Family Partnership data (next section) are assessed jointly,*
- *Emergency room usage is very difficult to affect positively in North Carolina because many emergency departments (EDs) actually advertise to the general public encouraging them to choose EDs over regular medical homes as the best avenue for medical care.*
- *The second and third data outcomes are both showing progress, but still need more work. Targets are values set which the program would like to attain over time. Trend data shows how much progress is being made, but it takes years to start seeing the desired impacts.*

Additional Outcome Data for January – December 2014

- There was a 15.2% reduction in clients who reported at 36 weeks gestation having smoked one or more cigarettes in the previous 48 hours and those same clients who reported at intake that they had smoked one or more cigarettes in the previous 48 hours.
- 84.6% of clients initiated breastfeeding at birth. Two years (2012, last year reported) after the launch of a North Carolina Department of Health and Human Services program aimed at encouraging breastfeeding at hospital maternity centers, a new report released by the U.S. Centers for Disease Control and Prevention (CDC) shows that 68.2% of all new mothers in North Carolina start breastfeeding. That number is up from 67.3% in 2011.
- 96.6% of children were up-to-date with immunizations at 24 months.
- 99.7% of children received a Ages and Stages; Questionnaire: Social Emotional (ASQ:SE, a developmental evaluation tool) at 6 months of age; 98.7% received an ASQ:SE at 12 months of age; 99.4% received an ASQ:SE at 18 months of age; and 99.1% received an ASQ:SE at 24 months of age.

Notes on Data

- *January – December 2014 was the last special request data set that DPH received from the NFP National Service Office.*
- *The NFP National Service Office is currently not accepting any special data requests as their data system is undergoing a major revision. Special data requests will not be available until early 2016.*

Have Objectives Been Achieved?

Program objectives have improved from the baseline, but have not yet met the projected outcome objectives. Targets are values set which the program would like to attain over time, but it is anticipated multiple years are required before seeing the desired impacts.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended for this evidence-based program. Evidence supports the need for sustained investment over time to reach desired impacts. The program is trending positively and above baseline for its program objectives.

Consequences of Discontinuing Funding:

There would be fewer opportunities to intervene effectively in supporting families through evidence-based programs. The service would not be available for approximately 1,919 families per year if funding was discontinued. Fewer effective interventions would be available to families to prevent child maltreatment.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

Immunization Program

Open Window Service: Vaccine Distribution and Administration

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The DHHS Division of Public Health's Immunization Branch promotes public health through the identification and elimination of vaccine-preventable diseases like polio, hepatitis B, measles, chickenpox, whooping cough, rubella (German measles), meningitis and mumps (using the national Advisory Committee on Immunization Practices, or ACIP, guidelines).
- The Immunization Branch's goals, objective and functions are to promote a core public health function in North Carolina through partnership and collaboration with local partners, collectively striving to eliminate the transmission of vaccine preventable diseases through effective immunization programs and outbreak control measures.

- The program uses evidence-based strategies and best practices as recommended by the U.S. Advisory Committee on Immunization Practices, or ACIP (**see Resources**). It is administered by 85 local health departments and greater than 1,200 private providers across the State, and is available statewide.

Program Activities:

- The program provides support to over 1,200 private and public medical providers for statewide vaccine program. This includes all North Carolina Local Health Departments, nearly all Pediatricians, and a significant number of Family Practices.
- The DPH Immunization Branch's activities provide a link between the federal Vaccines for Children (VFC) and Section 317 Programs, which helps families by providing vaccines at no cost to children who might not otherwise be vaccinated because of inability to pay.
 - The Centers for Disease Control and Prevention (CDC) buys vaccines at a discount and distributes them to State health departments — which in turn distribute them at no charge to those private physicians' offices and public health clinics registered as VFC providers.
 - Enrolled VFC providers are able to order VFC vaccine through the N.C. Immunization Program (NCIP) and receive ACIP routinely recommended vaccines at no cost. This allows them to provide routine immunizations to eligible children without high out-of-pocket costs.
- The program further:
 - Enrolls willing and eligible providers in the statewide NCIP.
 - Assesses provider and statewide inventories and ordering patterns, making adjustments in inventory to avoid vaccine waste.
 - Monitors providers for compliance with State and Federal requirements regarding vaccine management and storage, as well as administrative and reporting requirements.
 - Assists providers with strategies to increase immunization rates and avoid missed opportunities.
 - Assesses immunization rates in schools and childcare centers and colleges, and conducts record audits to assure compliance with State immunization requirements.
 - Conducts vaccine-preventable disease surveillance and case investigation, provides clinical and medical consultation to Local Health Departments and monitors occurrences of vaccine preventable diseases and reported disease cases to the CDC.
 - Investigates outbreaks occurring in schools, child care and institutional facilities, and offers control efforts through provision of vaccine in public clinics or by referrals to primary health care providers in outbreak settings.
 - Develops and conducts education for:
 - Providers to help assure providers understand program requirements and strategies to reach children, adolescents and adults to assure more immunizations are administered to more people.
 - The public to help them better understand the benefits of vaccines and vaccine requirements for schools and child care facilities.
 - For schools for distribution to parents concerning the benefits of vaccines.
 - Collaborates with Division of Public Health Office of Public Health Preparedness and Response to:
 - Develop a community based response plan for vaccine distributed to VFC and community vaccinators during a pandemic event.

- Exercise these pandemic plans.
- Develop and maintain a database of community vaccinators and critical infrastructure personnel that may be prioritized for vaccination in a severe pandemic scenario.
- Maintains a website with 3 separate components: 1) providers – This portion of the website includes information on program requirements, strategies to increase immunization rates, vaccine administration techniques, available resources, report forms, memorandums and educational opportunities; 2) school and childcare centers – This portion of the website includes immunization laws and rules and reporting requirements; 3) public – This portion of the website includes information about vaccine preventable diseases, benefits of vaccines, vaccines recommended for children, adolescents and adults, vaccines required for travel abroad, immunization requirements and how to locate immunization records.
- Provides on-call services. On call registered nurses answer questions from providers and the public related to vaccines, vaccine safety, vaccine administration and vaccine preventable diseases.
- Maintains a reminder/recall system of infants enrolled in the perinatal hepatitis B prevention program so that they receive all required vaccine doses of the hepatitis B vaccine series on schedule.
- Maintains a statewide secure, web-based immunization registry (NCIR) which is available for all providers enrolled in the program.
 - The NCIR supports the NCIP by tracking vaccine orders, shipments, transfers and doses administered reporting, and VFC eligibility.
 - Providers generate reminder recall notifications for patients due or overdue for immunizations, and track doses administered data to help determine vaccine needs, vaccination coverage reports.
 - Local Health Departments (LHD) utilize the NCIR to track immunization coverage of children 19-35 months old, that reside in the county and children being served at the LHD annually.
 - Data integrity and quality is of the utmost importance as the registry serves as the official Certificate of Immunization for providers, and individuals.
 - Schools use the registry to assess immunization status of students for school entry.

Statutorily Required Functions:

- Federal Public Law: Section 317(j) of the Public Health Service Act (42 U.S.C. 247b(j)) reauthorized in Section 4204 of the Patient Protection and Affordable Care Act.
- Federal Public Law: Social Security Act, Title XIX, Section 1928, 42 U.S.C. 1396s - Vaccines for Children Program (VFC)
- State Administrative Rules: Section .0400 - Immunization 10A NCAC 41A .0401
- North Carolina General Statutes 130A 152 through 130A 157.

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Immunization Grant	Federal	\$7,294,800
Infrastructure and Performance Grant	Federal	\$1,023,484
Appropriations	State	\$1,184,039
Vaccine Restitution	State Receipts	\$2,000
GRAND TOTAL		\$9,504,323

54 FTEs

Program Performance**Problem or Need Addressed:**

- Infants are particularly vulnerable to infectious diseases; it is critical to protect them through immunization. Each year, over 120,000 babies are born in North Carolina who will need to be immunized before age two against 14 vaccine-preventable diseases.
- The largest category of children eligible for the VFC program is Medicaid-enrolled children. Children who are eligible for VFC vaccines are entitled to receive all vaccines recommended by the Advisory Committee on Immunization Practices (ACIP). These vaccines protect babies, young children, and adolescents from 16 diseases.
- Failure to vaccinate is costly. Vaccines are one of the most successful and cost-effective tools available for protecting the public's health, both at individual and population levels.
 - According to an extensive cost-benefit analysis by the CDC, every dollar spent on immunization saves \$6.30 in direct medical costs.
 - When including indirect costs to society (a measurement of losses due to missed work, death and disability) as well as direct medical costs, the CDC notes that every dollar spent on immunization saves \$18.40.
 - Another recent economic report indicated that vaccination of each U.S. birth cohort with the current childhood immunization schedule prevents approximately 42,000 deaths and 20 million cases of disease annually, with net savings of nearly \$14 billion in direct costs and \$69 billion in total societal costs.
 - When comparing these costs to the 2014 population of North Carolina, it is estimated that vaccination prevents approximately 1,300 deaths and 620,000 cases of disease in North Carolina annually. Similarly, net savings are estimated at \$434,000,000 in direct medical costs and over 2 billion in total societal costs (CDC).
- An important component of an immunization provider's practice is ensuring that the vaccines reach all people who need them.
 - While attention to appropriate administration of vaccinations is essential, it cannot be assumed that these vaccinations are being given to every person at the recommended age.
 - Immunization levels in North Carolina are high, but gaps still exist, and providers can do much to maintain or increase immunization rates among patients in their practice.
 - There is a need for increasing immunization levels and educating providers on strategies that providers can adopt to increase coverage in their own practice.

- Resurgence of some vaccine-preventable diseases such as pertussis, expanded recommendations for influenza vaccination and HPV vaccination, and gaps in sustainable immunization efforts highlight the need to focus on immunization rates.
 - The viruses and bacteria that cause vaccine-preventable disease and death still exist and can be passed on to unprotected persons or imported from other countries, as demonstrated by pertussis outbreaks that occurred in 2010.
 - Diseases such as measles, mumps, or pertussis can be more severe than often assumed and can result in social and economic as well as physical costs: sick children miss school, parents lose time from work, and illness among healthcare providers can severely disrupt a healthcare system.
 - Levels of disease are a late indicator of the soundness of the immunization system. Immunization coverage levels are the best early indicator for determining if there is a problem with immunization delivery.

Performance Measures Defined and State Fiscal Year 2014-2015 Status

The following are the 2014 measurable performance targets tracked by the calendar year (federal funds awarded on a calendar year schedule; 2015 performance data will not be available until March 2016):

- Ensure that provider returns are submitted to CDC's centralized distributor within six months of expiration of product.
Percent of returns entered into CDC's tracking system. Target = 100% (MET)
- Conduct compliance visits to each enrolled VFC provider at least every other year.
Number of active and enrolled provider sites receiving VFC compliance site visits during the calendar year. Target = 687 (MET)
- Conduct unannounced storage and handling visits based on awardee selection methodology.
Number of provider sites receiving unannounced storage and handling visits during the calendar year. Target = 31 (MET)
- **Number of provider sites receiving unannounced storage and handling site visits during the calendar year that are non-compliant for one or more storage and handling compliance related questions. Target = 21 (MET)**
- Ensure routine disease surveillance; submit timely and complete electronic case and/or death notifications to CDC for cases that are reportable. Notify CDC about cases immediately by phone and electronically transmit complete case reports and supplemental surveillance information to CDC via the National Notifiable Diseases Surveillance System (NNDSS) within one month of diagnosis for CRS, diphtheria, measles, polio, rubella, and pediatric (<18 years of age) influenza deaths. Collect and electronically transmit complete case reports and supplemental surveillance information to CDC via NNDSS within one month of diagnosis for *Haemophilus influenzae*, meningococcal disease, mumps, pertussis, invasive pneumococcal disease, tetanus, hepatitis A, hepatitis B, and varicella.
Case notifications provided to CDC through North Carolina Electronic Disease Surveillance System (NC EDSS), Target = 100% (MET)
- Evaluate timeliness and completeness of each case/death investigation, reporting and notification for cases of VPDs that are reportable in the jurisdiction. Monitor the quality of VPD surveillance by reviewing surveillance data and surveillance indicators to identify problems and strategies to resolve the problems. Assess the proportion of measles cases with complete vaccination history, the proportion of measles cases or chains of transmission that

have an imported source, and implement activities to ensure appropriate case investigation and completeness of data.

Proportion of measles cases with complete vaccination history. Target = 100% (MET)

- Work with stakeholder organizations that focus on prenatal, postpartum, and pediatric care to develop and disseminate education on screening all women during every pregnancy for HBsAg which is the surface antigen of the hepatitis B virus (HBV). HBsAg educational content should include: when to test; what serologic markers to order in test; how to interpret results; and what steps to implement when a pregnant woman's HBsAg results are positive.

Change in percent of identified births to HBsAg-positive women by awardee compared to expected births to HBsAg-positive women by awardee. Target = 2% (MET)

- Assess NCIR progress towards meeting IIS Functional Standards of operations.

Percentage of functional standards attained. Target = 90% (MET)

- Develop and implement a data quality process for incoming NCIR data feeds.

Percentage of records that are accurate (IIS data reflects what occurred during the encounter), complete, and submitted in a timely manner. Target = 75% (MET)

- Perform vaccination coverage assessments for local areas (e.g., counties, Census tracts, zip codes, etc.) by age group and vaccine/vaccine series, using NCIR to identify areas of lagging coverage and/or pockets of need.

Number of vaccination coverage assessments conducted using NCIR. Target = 300 (MET)

Have Objectives Been Achieved?

This program is achieving its stated objectives.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended for this core public health function for which current objectives are being met.

Consequences of Discontinuing Funding:

- The CDC provides the State with 100% federal funding to support the VFC and Section 317 Vaccine Program. Should federal funding be discontinued, the program would not be able to provide vaccines, education and promotion services. Furthermore, 100% of Medicaid-enrolled children would not receive vaccinations from the VFC entitlement.
- Diseases that are almost unknown would stage a comeback. Our State would see epidemics of diseases that are nearly under control today. More children would get sick and more would die.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

Many strategies are used to increase immunization rates.

- Some, such as school entry laws, have effectively increased demand for vaccines.
- Some proven strategies, such as reducing costs, linking immunization to Women Infants and Children (WIC) services, and reminder/recall systems, are evidence-based strategies appropriate for increasing rates among specific populations, such as persons with low access to immunization services.

The DPH Immunization Branch is constantly seeking ways to improve the State's immunization rates and customer service.

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

Development of interface technology between the North Carolina Immunization Registry (NCIR) and electronic health records is currently being piloted.

<p>National Society to Prevent Blindness North Carolina Affiliate, Inc. <i>Open Window Service: School Health Services</i></p>

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The Mission of the National Society to Prevent Blindness North Carolina (PBNC) Affiliate, Inc. is to prevent blindness and preserve sight.
- The Agency provides vision screening, education, advocacy, and training, and supports research.
- In North Carolina, the Affiliate provides Pre-K vision screening and training/certification for volunteers and school staff including school nurses who will then screen and refer school age children grades K-6 for vision problems.
- Prevent Blindness North Carolina is the only organization in the State uniquely positioned to address the rising demand for free or low-cost eye care services. The program offers access to a full continuum of vision care through screening, screener certification and a voucher program for eye glasses and professional eye care.
- The pre-school contract serves the following North Carolina Counties:
Alamance, Brunswick, Buncombe, Burke, Cabarrus, Caldwell, Cumberland, Durham, Edgecombe, Forsyth, Greene, Franklin, Granville, Guilford, Harnett, Henderson, Johnston, Lee, Lenoir, Mecklenburg, Nash, New Hanover, Orange, Pender, Robeson, Rowan, Rutherford, Sampson, Stanly, Stokes, Wake, Wayne, Wilkes and Wilson.
- The contract providing training and certification of vision screeners serves all 100 counties.

- The program uses documented evidence-based strategies or interventions from the U.S. Preventive Services Task Force (USPSTF) and the American Association for Pediatric Ophthalmology and Strabismus (**see Resources**). Screenings conducted by trained vision screeners based on recommendations from the USPSTF and the American Association for Pediatric Ophthalmology and Strabismus.

Program Activities:

Pre K

Screen approximately 29,500 unduplicated preschool age children in the Pre-K Program through the following activities:

- Train and certify screeners in the use of photo-refractive or auto-refractive technology.
- Contact child care centers in 34 counties across the State to provide onsite vision screening for preschoolers ages two to no later than six months prior to enrollment into kindergarten. Parents of preschoolers receive educational materials prior to the screening and receive the actual photo and/or interpretation following the screening.
- Track and report referrals and confirmed care as a result of screening efforts.
- Make available to qualified referred children in financial need, free eye examinations and glasses.
 - Financially needy children not qualified for Medicaid or Health Choice are offered help through in-kind vouchers from Vision Service Plan, National Society to Prevent Blindness North Carolina Affiliate, Inc. (NSPBNC) Donor Docs Program or the Healthy Eyes Eyeglass Program upon meeting eligibility requirements.
 - NSPBNC conducts extensive phone and mail follow-up with all referred children to ensure that they have been seen by an eye doctor.

Training Screeners

- Certify 2,058 unduplicated vision screeners in the Star Pupils/Kenneth Royall Vision Screening Improvement Program.
- Conduct vision screening for approximately 332,400 local school children in grades K-6 for possible vision problems.
- Maintain a training and certification program for participants in 100 counties.
- Provide screening materials and charts needed to conduct screenings and record results. Provide a Resource Guide outlining follow-up resources for obtaining free or low-cost medical eye care. Invite school designated personnel and nurses in health departments to register to attend the courses. Provide certified personnel with a certificate upon completion of the course. The certification shall be good for two years.
- Collect screening data from county coordinators in each county.
- Offer access to vision care through Prevent Blindness North Carolina voucher programs for financially needy children referred through school vision screening for comprehensive eye care.
- Identify children in financial need through collaboration with school staff.
- Process applications, match children to appropriate resources, notify and provide redemption instructions.
- Track vouchers issues, redeemed and program success stories.

Statutorily Required Functions:

- There are no statutorily required functions.

- Session Law 2013-360, Section 12.A.2 directed DHHS to implement a competitive grants process beginning SFY 2014-2015 for nonprofit organizations that had a capacity to provide services statewide which were consistent with the State's health and wellness initiatives. The legislation also included a list of specific services to be covered through non-profit services, and vision screening was included in this list. Funds were made available for a nonprofit Request for Applications (RFA), and The National Association to Prevent Blindness, North Carolina Affiliate, Inc. applied to that RFA and was awarded funds.

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014*):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$560,837
TOTAL		\$560,837

No State FTEs. This service is provided through a contract.

*In addition to the Title V funds specified above, Session Law 2013-360 made \$456,926 dollars of State appropriations available to support the Pre K portion of the work accomplished by Prevent Blindness making the combined total \$1,017,763

Program Performance

Problem or Need Addressed:

- Vision problems impact one in 20 preschoolers increasing to one in four school-age children.
- Amblyopia, strabismus and significant refractive error are the most common children's visual disorders, which may cause permanent damage to children's eyes and negatively impact success in school, athletic performance and self-esteem.
- Vision screening is an efficient and cost-effective method to identify children with vision problems or eye conditions.
- Program effectiveness depends on well-trained staff, strong parental education, follow-up processes and routine evaluation of program quality. Successful visual acuity testing using a vision chart is highly dependent on patient age and screener experience;
 - In children younger than 3 years, few professionals can reliably determine acuity in each eye by using a vision chart.
 - Instrument-based screening is quick, requires minimal cooperation of the child, and is especially useful in the preverbal, preliterate, or developmentally delayed child.
 - For three to five year-old children, the preferred methodology is instrument-based detection of risk factors for amblyopia.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

- 3,372 vision screeners (volunteers, school staff, and school nurses) were certified in vision screening protocols in SFY 2014-2015, and 181 workshops were held in 91 counties with attendees drawn from all 100 counties.
- During SFY 2014-2015, the Pre-K vision screening activities of PBNC provided screening for young children in pre-K classrooms in 36 counties using 20 contracted vision screeners.

There were 30,182 children screened and 3,016 were referred for follow-up vision care. 75% of children referred confirmed follow-up care.

- 471,051 school aged children (K-6th grade) were screened by the certified vision screeners. Of those screened, 37,232 were referred for follow-up professional care. These follow-up services are provided and tracked by school nurses across the State.
- There were 601 vouchers issued by PBNC as part of the Sight for Students Program for students who could not afford professional eye care follow-up.
- The Healthy Eyes Eyeglass Program provided eye glasses for 248 children.
- During SFY 2014-2015, 132 doctors volunteered to donate a total of 413 eye exams and 274 pairs of glasses to students who could not otherwise afford them as part of the Donor Docs program at PBNC.

Have Objectives Been Achieved?

Program objectives have been achieved.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this program uses documented evidence-based strategies or interventions and is meeting its stated objectives.

Consequences of Discontinuing Funding:

- Pre-K screening utilizing scientifically based photo-refractive screening would not occur in pre-K classrooms. Most, if not all, pediatricians do not purchase, maintain or use the specialty cameras (cost of approximately \$7,000 each) required to provide accurate vision screening for very young children.
- The quality of school age vision screening may suffer without the certification and training provided by PBNC for screeners in the schools across the State. Children who are not screened are more likely to suffer adverse vision consequences which may negatively impact their school performance, eye health and quality of life.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

- School Districts across the State do not all select the same school grades which will be screened for vision. A child transferring from one school district to another could potentially miss the screening altogether or get screened two years in a row. If a school elects to screen kindergarten children, they may screen children who had a vision screening performed during the required kindergarten health assessment (to reduce the chances of this occurring, the DPH contract stipulates that Prevent Blindness will not screen children six months prior to the Kindergarten Health Assessment).

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

Newborn Screening – Laboratory

Open Window Service: State Laboratory Services – Testing, Training and Consultation

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The laboratory component of the Newborn Screening Program is conducted by the State Laboratory of Public Health (SLPH), which follows prescribed procedures to ensure high-quality screening and communication of results and information with other segments of the newborn screening system, including the Follow-up Program, hospitals and health-care practitioners.
- The State Laboratory of Public Health also plays an important role in conducting translational research by identifying and validating new newborn screening tests and focusing on quality improvement of current screening tests.
- The State Laboratory of Public Health's Newborn Screening Lab is one of multiple elements of the Newborn Screening Program. The laboratory provides outputs to the Newborn Metabolic Screening Follow Up Program which, in turn, uses documented evidence-based strategies or interventions (**see Resources**). The program provides statewide services, and the number of newborns screened in SFY 2014-2015 was 137,709.

Program Activities:

- A dried blood spot specimen is required by State law to be submitted to the North Carolina SLPH for each infant born in North Carolina.
- The specimen is tested for conditions that may cause mental retardation or death, if untreated. These conditions include:
 - **Amino Acid Disorders**
 - Argininosuccinic aciduria (ASA)
 - Citrullinemia (CIT I)
 - Homocystinuria (cystathionine beta synthase) (HCY)
 - Maple syrup urine disease / Branched-chain ketoacid dehydrogenase (MSUD)
 - Phenylketonuria / Hyperphenylalaninemia (PKU)
 - Tyrosinemia type II (TYR-II)
 - Tyrosinemia type III (TYR-III)
 - **Organic Acid Disorders**
 - Glutaric acidemia type I (GA-I)
 - Multiple carboxylase deficiency (MCD)
 - 3-Hydroxy-3-methylglutaryl-CoA lyase deficiency (HMG)

- Isobutyryl-CoA dehydrogenase deficiency (IBD)
- Isovaleric acidemia / Isovaleryl-CoA dehydrogenase deficiency (IVA)
- Beta-ketothiolase (BKT) / Short-chain keto acylthiolase deficiency (SKAT)
- Methylmalonic aciduria (MMA)
- 2-Methylbutyryl-CoA dehydrogenase deficiency (2-MBD)
- 3-Methylcrotonyl-CoA carboxylase deficiency (3-MCC)
- Propionic acidemia (PPA, PROP)
- **Fatty Acid Disorders**
 - Carnitine uptake defect/carnitine transport defect (CUD)
 - Carnitine/acylcarnitine translocase deficiency (CAT)
 - Carnitine palmitoyltransferase II deficiency (CPT II)
 - Medium-chain acyl-CoA dehydrogenase deficiency (MCAD)
 - Multiple acyl-CoA dehydrogenase deficiency (GA-II)
 - Long-chain 3-hydroxyacyl-CoA dehydrogenase deficiency (LCHAD)
 - Short-chain acyl-CoA dehydrogenase deficiency (SCAD)
 - Trifunctional protein deficiency (TFP)
 - Very long-chain acyl-CoA dehydrogenase deficiency (VLCAD)
- **Disorders detected by biochemical and other technologies**
 - Biotinidase deficiency (BIO)
 - Congenital adrenal hyperplasia (CAH)
 - Cystic Fibrosis
 - Galactosemia/ galactose-1-phosphate uridyl transferase deficiency (GALT)
 - Primary congenital hypothyroidism (CH)
 - Hemoglobin C disease (FC)
 - Hemoglobin E disease (FE)
 - Sickle cell disease (FS, HB S/S)
 - Sickle/hemoglobin C disease (FSC, HB S/C)
 - Sickle/hemoglobin E disease (FSE, HB S/E)
- The SLPH administers a Quality Assurance Office that addresses quality issues of dried blood spot measurements for all conditions for which newborn screening is available. The Office assures that the laboratory participates in proficiency testing, training, support, technical assistance, and consultation to newborn screening stakeholders.

Statutorily Required Functions:

General Statute 130A-125 addresses screening of newborns for metabolic and other hereditary and congenital disorders

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Newborn Screening Fees	State Receipt	\$1,655,701
Medicaid	Federal	\$1,525,478
GRAND TOTAL		\$3,181,179

30 FTEs

Program Performance

Problem or Need Addressed:

See Newborn Metabolic Screening Follow Up.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

- See Newborn Metabolic Screening Follow Up Program.
- NCSLPH provides outputs to the Program which, in turn, assists with the development of evidence-based or evidence-informed strategies, best practice recommendations, and outcomes.

Have Objectives Been Achieved?

Program objectives have been achieved.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended for this core public health function that uses documented evidence-based strategies or interventions and is meeting its stated objectives.

See also Newborn Metabolic Screening Follow Up Program.

Consequences of Discontinuing Funding:

- Approximately 125,000 newborn babies who are born annually in North Carolina will not be screened for the disorders and conditions identified on the U.S. DHHS Secretary's Recommended Uniform Screening Panel (RUSP) that is implemented in all 50 states.
- The identification of disorders and conditions that impact the lives of newborns, prevent medical problems, reduce the severity of medical problems and provide patient management and treatment at the point in the medical system where it is the least expensive will not be available to North Carolina newborns.
- Discontinuing funding for newborn screening could result in higher health care costs (including those to the Medicaid program) that may result in providing care for children afflicted with inherited metabolic and genetic disorders and conditions due to complications resulting from not identifying these conditions early in life.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

- Provide the NC DHHS Secretary with statutory authority to adjust the newborn screening fee by using a Cost Finding Methodology developed by the DHHS Office of the Controller and reflects current costs and is in accordance with the OMB A-87 Circular (2 CFR Part 225). The fee would not exceed the cost of Newborn Screening conducted at the SLPH.

- This will allow the SLPH to add tests to the North Carolina Newborn Screening panel in a timely manner for new disorders and conditions that are added to the US DHHS RUSP. This may reduce the State's liability associated with undiagnosed disorders or conditions in North Carolina newborns when a screening method has been recommended by the US DHHS RUSP.

Recommendations for Change (Statutory, Budgetary, or Administrative):

Provide the NC DHHS Secretary with statutory authority to adjust the newborn screening fee and the authority to adjust the rate for added or deleted tests by using a Cost Finding Methodology developed by the DHHS Office of the Controller. This is in accordance to the OMB A – 87 Circular (2 CFR Part 225). The fee would not exceed the cost of Newborn Screening conducted at the SLPH.

External Factors

Policy Issues or Other Relevant Information:

None

Newborn Metabolic Screening Follow Up
Open Window Service: Genetics and Newborn Screening

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The primary purpose of the Newborn Screening follow-up program is to collaborate with the State Laboratory of Public Health (SLPH) to provide follow-up for infants born in North Carolina who have abnormal newborn metabolic screening results.
- The follow-up program is responsible for the reporting of abnormal newborn metabolic screening results to the appropriate health care provider and providing recommendations for diagnostic testing and referral recommendations.
- Follow-up duties are divided among the Division of Public Health (DPH) Children and Youth Branch (congenital hypothyroidism, congenital adrenal hyperplasia, galactosemia, biotinidase deficiency, and cystic fibrosis), the DPH Women's Health Branch (sickle cell anemia and Hemoglobinopathies), and the University of North Carolina at Chapel Department of Genetics and Metabolism (amino acid, fatty acid oxidation, and acylcarnitine disorders detected by tandem mass spectrometry). The follow-up coordinators make recommendations for confirmatory testing and continue to monitor outcomes until a normal result is received or until a medical specialist has determined diagnosis and appropriate treatment has been initiated.
- The goal of this program is to provide Newborn Screening Follow-up in a time sensitive manner in order to prevent devastating physical or neurological consequences for the newborn, thereby reducing neonatal morbidity and mortality and associated health care costs.
- The program uses documented evidence-based strategies or interventions (**see Resources**), is administered by DHHS' Division of Public Health (Children and Youth and Women's Health Branches) and UNC-Chapel Hill, and is available statewide.

Program Activities:**Division of Public Health**

- Report abnormal Newborn Screening results and recommendations to primary care providers.
- Develop and revise follow-up protocols in collaboration with State laboratory staff, medical specialists, and the newborn metabolic screening advisory committee.
- Document follow-up activities, diagnostic testing, and medical interventions.
- Provide technical assistance and training to health care professionals related to Newborn Screening results and follow-up recommendations.
- Participate in meetings of the Newborn Screening Advisory Committee and consult with staff at the SLPH and the DPH Health Genetics and Newborn Screening Unit.

UNC Chapel Hill (contract)

- Provide expertise and consultation to the SLPH on technical and medical content regarding tandem mass spectrometry.
- Provide expertise and consultation to the SLPH on follow-up care for infants identified through tandem mass spectrometry.
- Provide expertise and consultation to the DPH Genetics and Newborn Screening Unit on follow-up coordination for newborn screening through tandem mass spectrometry and other conditions (e.g., biotinidase deficiency and galactosemia).
- Monitor results of screening and provide timely interpretation of normal, abnormal, and borderline screens.
- Provide expertise and consultation and follow-up to primary care providers and families of infants identified with conditions through tandem mass spectrometry according to established medical protocols.
- Provide expert content knowledge to the Newborn Screening Advisory Committee and its sub committees.
- Participate in meetings of the Newborn Screening Advisory Committee and consult with staff at the SLPH and the DPH Health Genetics and Newborn Screening Unit.
- Confirm suspected diagnoses identified in the State newborn screening laboratory.
- Provide inpatient dietary services including mixing of formula and extra teaching.
- Provide consultation to referring healthcare providers regarding patient diagnosis, care, and management.

Statutorily Required Functions:

General Statute 130A-125 addresses screening of newborns for metabolic and other hereditary and congenital disorders.

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014*):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$848,805
Appropriations	State	\$1,237,923
GRAND TOTAL		\$2,086,728

Program Performance

Problem or Need Addressed:

- Babies are at risk for death or poor health outcomes if metabolic disorders are not identified and addressed as soon as possible after birth.
- Over time, poor health outcomes for these babies financially impact the State's Medicaid program.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Hospitals screen newborns and results are sent to the State Laboratory of Public Health for testing. The program usually receives screening results on about 97+ % of infants born. Several factors may impact this reporting:

- Death of the infant
- Parent declines the service
- Home births (although the program does work with the midwives to include these births as frequently as possible)
- Hospital does not provide screening for various reasons and babies are lost to follow-up
- Delays or missed screening because babies are in the NICU or they have moved to a different location and switch hospitals

Most recent performance data is:

Year	Measure	Number
2013-2014	Number of births	120,948
2013-2014	Newborns screened for conditions that may cause serious illness, disability, or death (metabolic disorders).	117,801 (97.4%)
2013-2014	Newborns confirmed to have a condition	220

Have Objectives Been Achieved?

Program objectives have been achieved.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this program uses documented evidence-based strategies or interventions and is meeting its stated objectives.

Consequences of Discontinuing Funding:

- The consequences of discontinuing this service are that children will not have access to appropriate newborn screening follow-up services through the State.
- Children who are diagnosed with metabolic conditions and do not have follow up in a timely manner will have significant physical or neurological damage. Some of the conditions are life-threatening if not identified and treated within a short timeframe. Failure to treat may also result in increased morbidity and health care costs in our State.

Recommendations to Improve Efficiency and Effectiveness**Recommendations for Improving Services, or Reducing Costs or Duplication:**

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors**Policy Issues or Other Relevant Information:**

None

Newborn Hearing Screening***Open Window Service: Genetics and Newborn Screening*****Current Environment****Description of Mission, Goals, Objectives, and Functions:**

- Hearing loss is the most common congenital birth defect, affecting as many as three infants per thousand born.
 - Left undetected, hearing loss in infants can negatively impact speech and language acquisition, academic achievement, and social and emotional development.
 - If detected, however, these negative impacts can be diminished and even eliminated through early intervention.
- The goal of early hearing detection and intervention (EHDI) is to maximize listening and language competence, school readiness, and literacy development for children who are deaf or hard of hearing by:
 - Ensuring that all infants are screened for hearing loss by 1 month of age.
 - Ensuring that children with congenital hearing loss are identified by 3 months of age.
 - Ensuring that children identified with congenital hearing loss are provided access to appropriate audiological, educational, and medical intervention by 6 months of age.
- The primary objective of the North Carolina EHDI Program is to:
 - Support birthing facility universal newborn hearing screening programs, in order to ensure that infants receive additional hearing screening and follow-up when needed.
 - Support families through the process if necessary.

- Provide consultation, technical assistance and resources to public and private agencies for the development and implementation of effective Early Hearing Detection and Intervention programs.
- The program uses documented evidence-based strategies or interventions (**see Resources**); is administered by the North Carolina Division of Public Health, public and private birthing facilities, public and private health care providers, public and private early intervention agencies and providers; and is available statewide.

Program Activities:

- Provide technical assistance to birthing facilities for hearing screening, rescreening and tracking of infants born at each facility.
- Provide consultation and technical assistance to public and private agencies (other stakeholders) focusing on identification and intervention for children with hearing loss or communication delays.
- Develop and maintain a sustainable, centralized tracking and surveillance system capable of accurately identifying, matching, collecting, and reporting data on all births that is unduplicated and individually identifiable through the three components of the EHDI process (screening, diagnosis, and early intervention).
- Provide technical assistance regarding the Women's and Children's Services Web (WCSWeb) Hearing Link, North Carolina's direct data entry and tracking system.
- Coordinate regional educational and networking meetings about newborn hearing screening for personnel from birthing facilities and other involved stakeholders.
- Keep track of data concerning the efficiency and effectiveness of each birthing facility in the region and intervene when a facility appears to be missing hearing screenings on children or has an excessive number of children who fail the screening.
- Identify community resources and systems that identify and refer infants and children with suspected late onset or progressive hearing loss or communication deficits.
- Collaborate with care managers, private providers, local health departments, and others for the tracking of infants and children with or at risk for hearing loss.
- Supply educational materials about hearing loss and communication delays to agencies working with families of young children.
- Collaborate with community resources to screen children as part of special health promotion events or part of Head Start or other community mass screening initiatives.
- Provide support to individual families whose children have not had a newborn hearing screening or have failed a hearing screening to ensure that they obtain the needed repeat hearing screenings or diagnostic evaluations to determine the absence or presence of hearing loss.
- Provide support to individual families whose children have been diagnosed with hearing loss to ensure that they obtain the needed intervention services and family support services.
- Promote public awareness related to the benefits of early hearing detection and intervention.
- Coordinate with professionals in the Early Intervention program regarding service delivery and transition issues for children with hearing loss.
- Consult with public and private agencies and families in the selection and procurement of communication-related equipment and other assistive devices and technology.

- Implement use of quality improvement methodology to ensure high quality hearing health care for children.
- Ensure all infants and children with late onset, progressive, or acquired hearing loss will be identified at the earliest possible time.
- Develop and implement policies and procedures for the efficient collection, management, and analyses of childhood hearing health data.

Statutorily Required Functions:

General Statute 130A-125 addresses screening of newborns for metabolic and other hereditary and congenital disorders.

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014*):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$346,545
Medicaid	Federal	\$162,547
State Appropriations	State	\$740,029
TOTAL		\$1,249,121

***Additional resources not captured in SFY 14-15 certified budget as of 9/18/2014**

Health Resources and Services Administration (HRSA) Universal Newborn Hearing Screening Grant	Federal	\$285,883
CDC Early Hearing Detection and Intervention Cooperative Agreement	Federal	\$163,962

10.8 FTEs

Program Performance

Problem or Need Addressed:

- In 2013, there were 3,904,742 infants born in the United States and Territories, and 3,794,124 (97.2%) were screened for hearing loss. The number of children diagnosed with significant hearing loss was 5,296 (a rate of 1.5 per 1,000 screened), according to Centers for Disease Control and Prevention (CDC) data.
 - The North Carolina Office of State Budget and Management 2015 State Population Projections indicated North Carolina had 2,734,100 residents under age 21 years.
 - WCSWeb data indicated an incidence of hearing loss for infants born in North Carolina in 2013 of 2.0 per 1,000.
 - Though from 2 different calendar years, this data indicates at least 5,469 children and youth under age 21 years in North Carolina would have significant hearing loss.
- In 2013, there were 120,551 children born in North Carolina and 119,399 (99.0%) were screened for hearing loss. The number of children diagnosed with significant hearing loss in North Carolina in 2013 was 238 (a rate of 2.0 per 1,000 screened).

- Preliminary data for infants born in North Carolina in 2014 indicate 199 (24.6%) infants who did not pass their final hearing screening were diagnosed with permanent hearing loss.
 - Of the 380 infants who received a diagnosis of either normal hearing or permanent hearing loss, 26.8% were diagnosed with permanent hearing loss by 3 months of age.
 - However, only 47% of the infants who needed follow-up testing completed their diagnostic evaluation.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

- *Number of live births that received initial hearing screening prior to one month of age*
 Baseline SFY 2014-2015: 92.8%
 Target value SFY 2014-2015: 95%
 Actual data for SFY 2014-2015 will be available May 2016
 Target value SFY 2013-2014: 95%
 Actual data SFY 2013-2014: 97.9%
- *Percent of infants categorized as "loss to follow-up/documentation" who have not passed a physiological newborn hearing screening*
 Target value SFY 2014-2015: 30%
 Actual data for SFY 2014-2015 will be available in May 2016
 Target value SFY 2013-2014: 30%
 Actual data SFY 2013-2014: 34.2%
- *Proportion of newborns who receive audiologic evaluation no later than age 3 months for infants who did not pass the hearing screening*
 Target value SFY 2014-2015: 50%
 Actual data for SFY 2014-2015 will be available in May 2016
 Target value SFY 2013-2014: 50%
 Actual data SFY 2013-2013: 54.1%
- *Percent of infants with confirmed hearing loss who are enrolled in early intervention services by six months of age*
 Target value SFY 2014-2015: 50%
 Actual data for SFY 2014-2015 data will be available in May 2016.
 Target value SFY 2013-2014: 50%
 Actual data SFY 2013-2013: 54.1%

Have Objectives Been Achieved?

Program objectives have been achieved.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this program uses documented evidence-based strategies or interventions and is meeting its stated objectives.

Consequences of Discontinuing Funding:

- Two of every 1,000 children born who would be diagnosed with hearing loss will not be diagnosed and will fall behind their hearing peers in communication, cognition, reading, and social-emotional development.
- This would lead to lower educational and employment levels in adulthood and higher costs for needed multi-disciplinary interventions over time.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

- The program has previously experienced delays in provider reporting.
- WCSWeb Hearing Link began receiving birth records from North Carolina Vital Records Office in 2014, which included infants previously unreported to the Newborn Hearing Screening Program. This process has resulted in higher quality data, which did result in a temporary increase in loss to follow-up/documentation.
- The program continues to search for methods to improve follow-up time and data entry information from agencies to document diagnostic and follow-up services.

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

Safe Sleep

Open Window Service: Maternal Health

Current Environment

Description of Mission, Goals, Objectives, and Functions:

The Safe Sleep Campaign is a bilingual campaign that addresses infant health in regards to

- Safe sleep positioning and environments
- Co-sleeping and exposure to secondhand smoke in order to reduce the risk of Sudden Infant Death Syndrome (SIDS)
- Accidental infant asphyxiation, and suffocation deaths

The campaign's objective is to increase practices that reduce the risk of Sudden Infant Death Syndrome (SIDS) and which prevent other infant sleep-related deaths. It achieves this by providing a media presence (through online, television and radio sources) and creating educational materials for the public using current research and information.

Safe Sleep activities are evidence-based (American Academy of Pediatrics; **see Resources**), administered by the North Carolina Healthy Start Foundation, and available statewide.

Program Activities:

The program disseminates infant safe sleep messages to pregnant women, parents, caregivers and also provides education, training, and technical support to healthcare providers, community-based organizations and hospitals in North Carolina.

Statutorily Required Functions:

None. The enacted budget directed spending for this program.

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$45,000
Appropriations	State	\$846
GRAND TOTAL		\$45,846

No State FTEs. This service is provided through a contract.

Program Performance

Problem or Need Addressed:

- Since 1990, the overall rate of SIDS deaths has decreased by over 50% in the US. The trend is also consistent in North Carolina; however, in North Carolina deaths attributed to other sleep-related causes have increased. Since 2009, the number of SIDS death in our State has declined from 98 to 28 in 2014. Some of this improvement has been due to improved reporting and investigation processes.
- Educating families and caregivers about the importance of a safe sleeping environment have proved beneficial in helping to lower the risk for preventable infant sleep-related deaths.

Performance Measures Defined and State Fiscal Year 2014-2015 Status:

Outcome Performance Measures	Results
Provide a minimum of two exhibits to display safe sleep information on behalf of the Safe Sleep Campaign to improve knowledge and behavior about Safe Sleep.	3 exhibits were displayed at NC Society of Public Health Educators conference, Alamance Safe Kids and Greenville Maternity Fair that promoted Safe Sleep practices.
Provide a minimum of 1 exhibit and/or training in the community to improve knowledge and behavior about Safe Sleep practices and available resources.	There were 23 participants in Safe Sleep trainings; 50 cribs and sheets were purchased and distributed to complement safe sleep classes for families who were referred by local community agencies and attend training sessions.
Respond to 100% of the requests for information, statistics, interviews and referrals on safe sleep received by the public.	100% of requests for information, statistics, interviews and referral were responded to in a timely fashion. The contractor responds to two to three calls per month related to safe sleep efforts.

Have Objectives Been Achieved?

Program objectives have been achieved.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended since this program uses documented evidence-based strategies or interventions and is meeting its stated objectives.

Consequences of Discontinuing Funding:

- If this funding is discontinued, the campaign will not be able to provide messages via print, television, and web media to influence families and caregivers nor provide the tangible resources to reinforce adherence to the safe sleep protocols, thus inevitably increasing our rates of infant mortality.
- Continuing to fund the coordination of this multimedia campaign increases the awareness of the problem and provides a platform for policy creation, resource provision, and education to strengthen the adoption of infant safe sleep practices that reduce the risk of SIDS and prevent sleep-related deaths such as accidental infant asphyxiation and suffocation.
- Increasing awareness and providing actionable education with resources will address preventable sleep-related infant deaths.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

None

Triple P

Open Window Service: Children's Preventive Health Services

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- The mission of Triple P is to strengthen parenting at a population level. The goals are to reduce out of home placements, reduce emergency department visits related to maltreatment injuries, and to reduce the number of substantiated child abuse cases. The objectives are to increase positive parenting, reduce coercive parenting, lower social emotional and behavioral health problems, improve parent-child relations, and decrease parenting stress.
- Triple P is a coordinated, multi-level system of programs that increase from a population-based social media information strategy in Level One to an intense one-on-one clinical intervention in Level Five. The program is delivered by trained professionals (anyone in a community that provides services to a family with a child, ages birth to 16) through age-appropriate parenting and family support interventions by teaching 17 specific parenting skills.
- Triple P, when implemented to scale in a community, is a population health perspective that de-stigmatizes parenting support, is efficient and cost effective, provides families with easy access to evidence-based preventive interventions, and achieves substantial penetration/reach within a community.
- Regarding the use of evidence-based strategies or interventions (**see Resources**): South Carolina clinical trials were completed in 2010 after four years of implementation with the following results:
 - Standardized prevention rates per 100,000 children ages birth to eight yrs.
 - 240 fewer out of home placements per year
 - Triple P counties were 16% lower than comparison counties
 - 60 fewer hospitalizations/emergency room visits for child maltreatment injuries per year
 - Triple P counties were 17% lower than comparison counties
 - 688 fewer substantiated child abuse cases/year
 - Triple P counties were 22% lower than comparison counties
- Triple P is administered by local health departments, and is available as follows:

- For the SFY 14-15, Triple P served 33 counties including the following State funded counties: Alamance, Appalachian Health District (Alleghany, Ashe, Watauga), Albemarle Health District (Camden, Currituck, Chowan, Bertie, Pasquotank, Perquimans, Gates), Buncombe, Cabarrus, Durham, Washington, Mecklenburg, Nash, and Edgecombe, Beaufort, Hyde, Halifax, Hertford, Northampton, Lenoir, Greene, Jones, Greene, Martin, Tyrrell, Washington, Pitt, Vance, and Warren.

Program Activities:

The Triple P--Positive Parenting Program is a multilevel system of parenting and family support strategies for families with children from birth to age 12, with extensions to families with teenagers ages 13 to 16. The program is:

- Developed for use with families from many cultural groups, and
- Designed to prevent social, emotional, behavioral, and developmental problems in children by enhancing their parents' knowledge, skills, and confidence.

The program, which can also be used for early intervention and treatment, is founded on social learning theory and develops on cognitive, developmental, and public health theories. Triple P has five intervention levels of increasing intensity to meet each family's specific needs. Each level includes and builds upon strategies used at previous levels:

Level 1 (Universal Triple P) is a media-based information strategy to increase community awareness of parenting resources.

Level 2 (Selected Triple P) provides specific advice on how to solve common child developmental issues and minor child behavior problems. Included are parenting tip sheets and videotapes that demonstrate specific parenting strategies.

Level 3 (Primary Care Triple P) targets children with mild to moderate behavior difficulties.

Level 4 (Standard Triple P and Group Triple P), an intensive strategy for parents of children with more severe behavior difficulties designed to teach positive parenting skills.

Level 5 (Enhanced Triple P) is an enhanced behavioral family strategy for families in which parenting difficulties are complicated by other sources of family distress.

Variations of some Triple P levels are available for parents of young children with developmental disabilities (Stepping Stones Triple P), parents of children who are overweight, and for parents of children who have been abused (Pathways Triple P).

The contracted local health department (LHD) coordinates training for individuals in a county who come in contact with children that provide a wide range of services. There are five levels of training becoming increasingly complex. Once trained, providers apply information they have learned that improve parenting skills and address behavioral problems in children. LHDs must:

- Adhere to standards set by Triple P America to ensure that the project is implemented with model fidelity.
- Collect and provide to the Division of Public Health and to Triple P America all required data to document delivery of services and outcomes as specified below.
 - Maintain and update as needed an implementation plan using the template provided by Triple P America with guidance from the Division of Public Health and Triple P America which includes:

- A training schedule for providers to access the various levels of Triple P to be implemented in the county
- Identification of the target population in the county
- Community education and media strategies
- Written evaluation and sustainability plans beyond the current funding cycle.
- Participate in the North Carolina Triple P State Learning Collaborative that will:
 - Share best practices
 - Determine cost effective strategies for addressing social marketing, and develop a statewide data reporting and evaluation plan.

Statutorily Required Functions:

None

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Maternal and Child Health Block Grant	Federal	\$580,859
Appropriations	State	\$662,438
GRAND TOTAL		\$1,243,297

1 FTE

Program Performance

Problem or Need Addressed:

- In SFY 2013-14, 128,005 children received assessments for child maltreatment in North Carolina. Of these cases, 23,529 were substantiated.
- In SFY 2013-2014, there were 8.25 per 1,000 children in foster care in North Carolina, or 14,697 children.

Performance Measures Defined and Status:

- *In previous clinical trials, it took at least four years of full implementation of Triple P in a community before population-level indicators began to drop. In fact, rates of child maltreatment and out-of-home placements tended to rise during the initial years because it became more socially responsible to report abuse and neglect.*
- Cohort One (Alleghany, Ashe, Watauga, Cabarrus, and Madison) counties are just beginning their fourth year of implementation.
- In SFY 2012-2013, 5 counties were funded as Cohort One = Alleghany, Ashe, Watauga, Cabarrus, Madison.
- In SFY 2013-2014, an additional 28 counties were funded - Alamance, Beaufort, Bertie, Buncombe, Camden, Chowan, Currituck, Durham, Edgecombe, Gates, Greene, Halifax, Hertford, Hyde, Jones, Lenoir, Martin, Mecklenburg, Nash, Northampton, Pasquotank, Perquimans, Pitt, Tyrell, Vance, Wake, Warren, and Washington.

Measure: The incidence of child maltreatment (SFY 2014-2015 data is not available)

Child maltreatment rate SFY 2012-2013 (first year of implementation for Cohort One counties): Baselines for the 5 counties in Cohort One=10.35 incidence per 1,000

Child maltreatment rate SFY 2013-2014: 5 counties= 9.59 incidence per 1,000
Baseline for the 33 counties =8.45 incidence per 1,000

Measure: The incidence of out of home placements (SFY 2014-2015 data is not available)

Out of home placement rate SFY 2012-2013 (first year of implementation for Cohort One counties): Baseline for the 5 Counties=4.78 incidence per 1,000

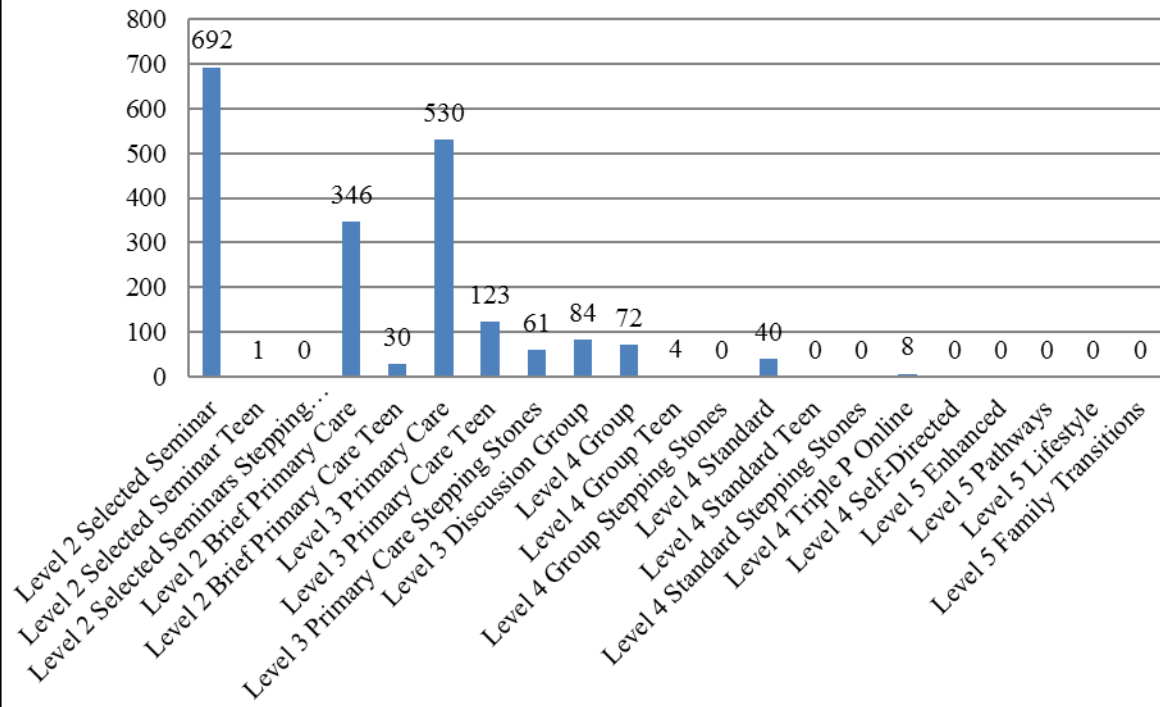
Out of home placement rate SFY 2013-2014: 5 counties=5.51 incidence per 1,000
Baseline for the 33 counties=4.87 incidence per 1,000

Service Data:

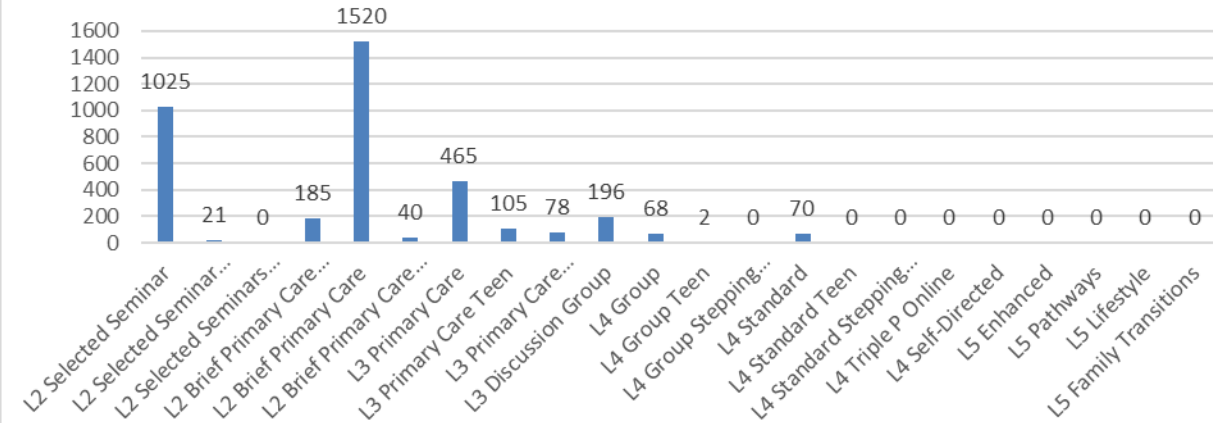
	Jan-Mar 2014	April-June 2014	July-Sept 2014	Oct-Dec 2014	Jan-Mar 2015	April-June 2015	Cumulative Total
# of newly accredited practitioners	481	389	516	411	242	257	2,296
# of caregivers served	786	873	1,446	1,750	1,860	2,247	8,962
# children served	1,209	1,153	1,310	2,097	3,254	2,584	11,607

The following graphs provide additional service data detail for the Triple P program.

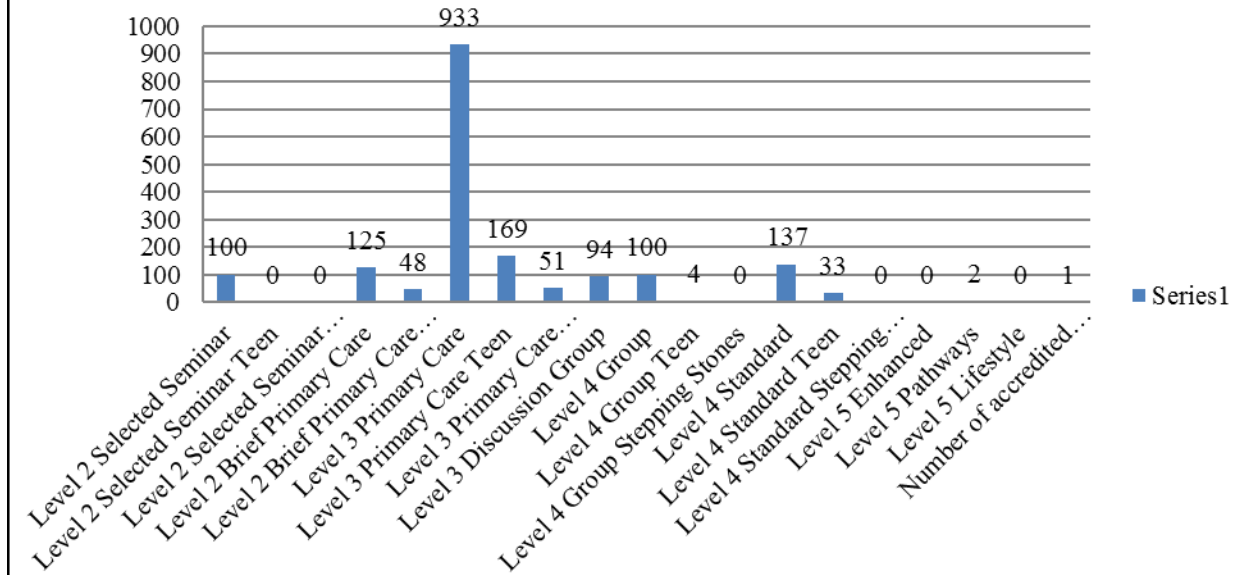
NC 2014: Number of Families Completing per Level



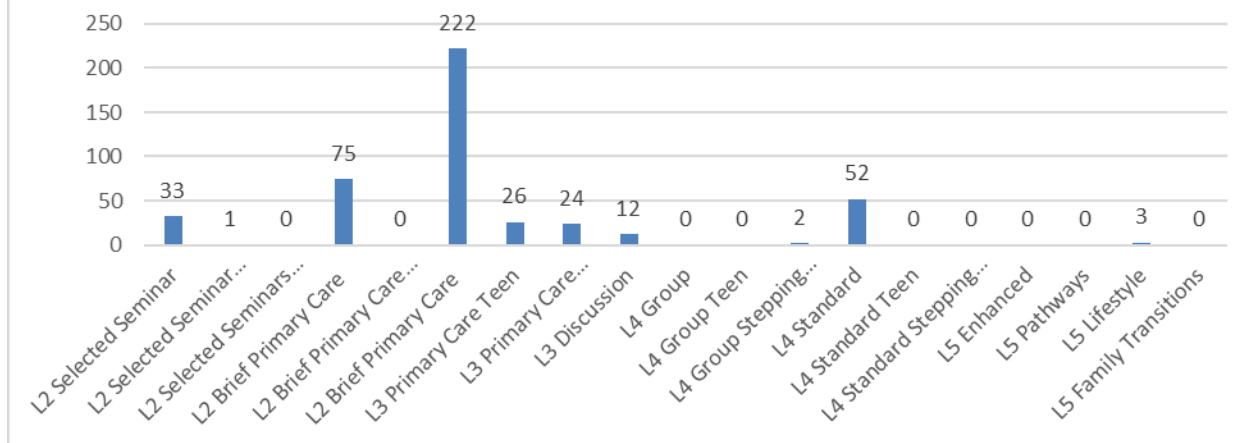
NC January-June 2015: Number of Families Completing per Level



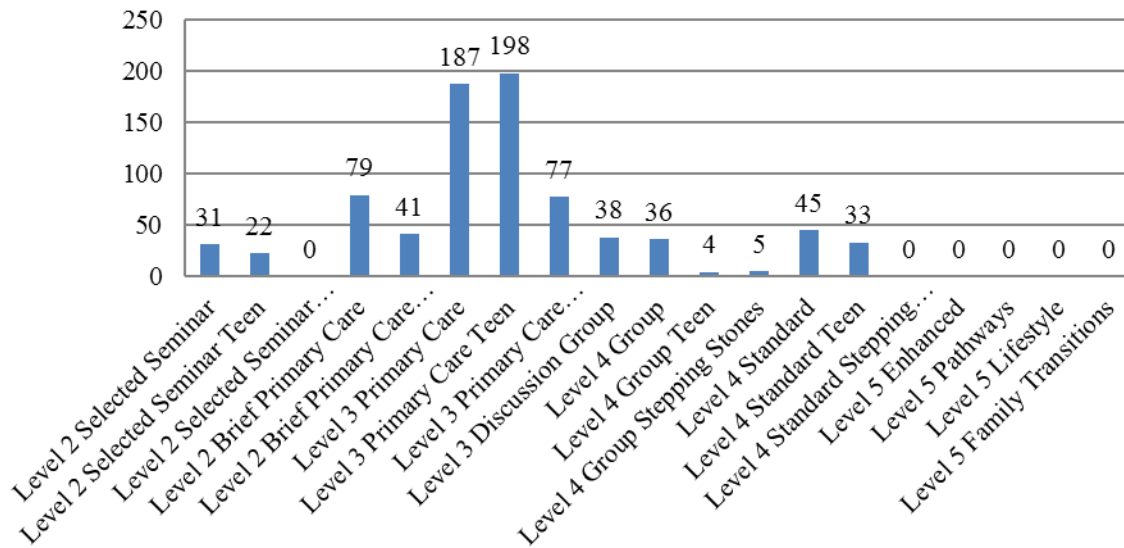
NC 2014: Number of Accredited Providers per Level



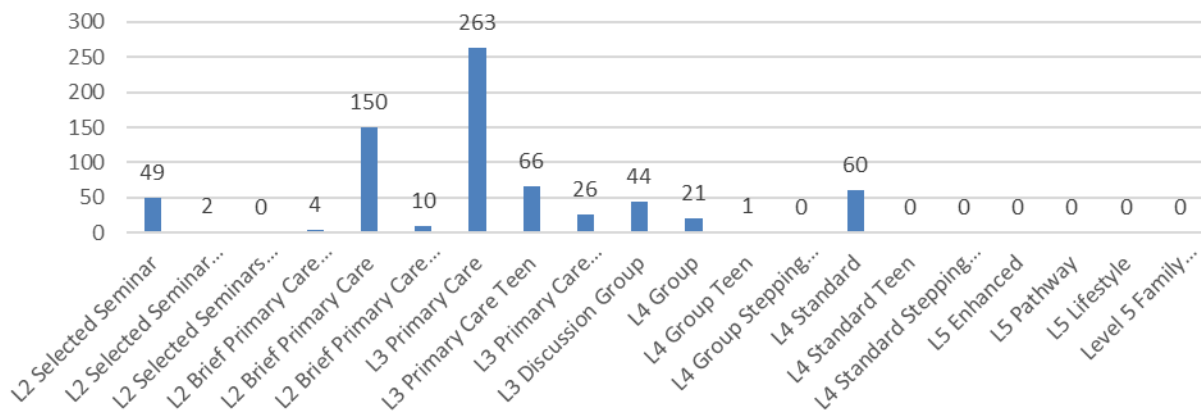
NC January-June 2015: Number of Newly Accredited Providers per Level



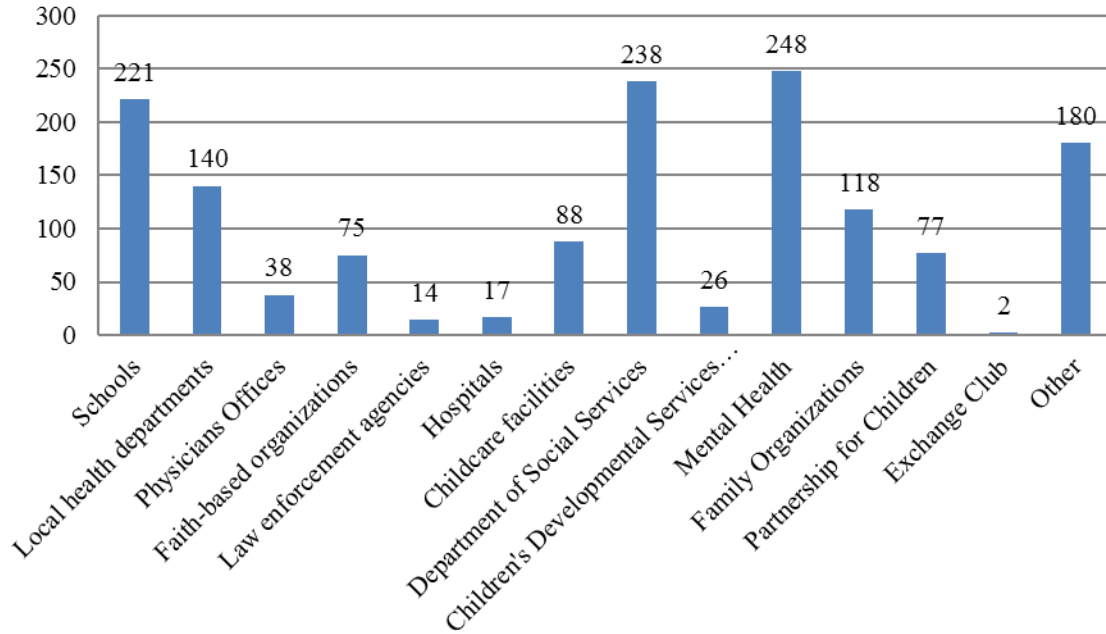
NC 2014: Number of Participating Providers per Level



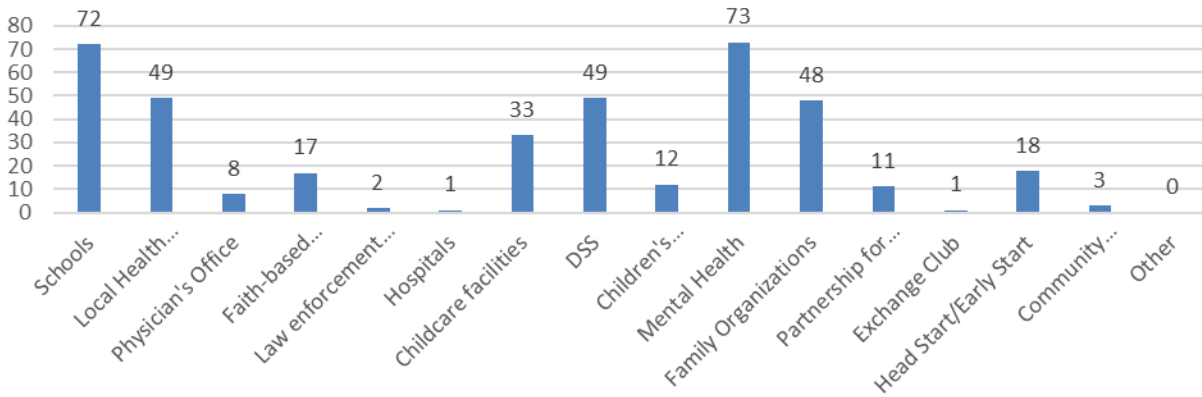
NC January-June 2015: Triple P Participating Practitioners by Level



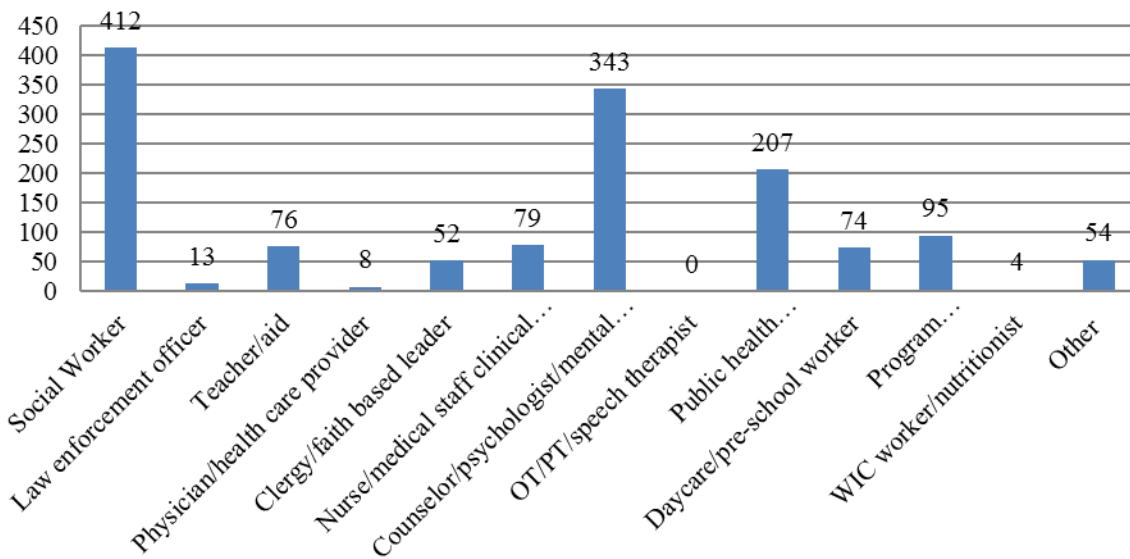
NC 2014: Triple P Providers by Work Setting



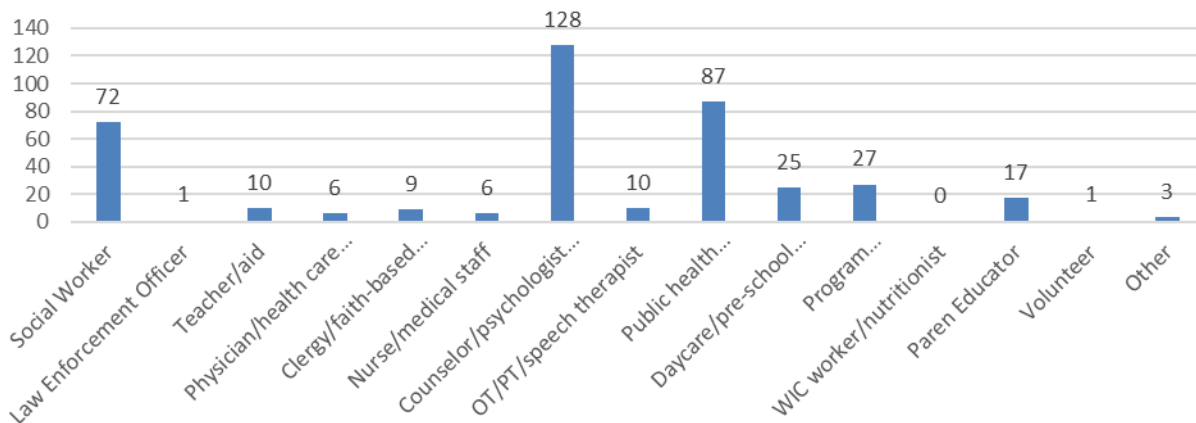
NC January-June 2015: Triple P Newly Accredited Practitioners by Work Setting



NC 2014: Number of Trained Providers By Discipline



NC January-June 2015: Number of Newly Accredited Practitioners by Discipline



Triple P Cumulative Caregiver Data (January 2014 – June 2015)	Cumulative Average
*In your opinion, "How is your child's behavior at this point?" ¹ (Rate 1-7)	5.87
**Has Triple P helped you deal more effectively with your child's behavior? ² (Rate 1-7)	6.24

Both of these caregiver questions are given post-intervention as part of the Client Satisfaction Survey.

*Caregiver question #1: 1=considerably worse. 7=greatly improved.

**Caregiver question # 2: 1=No, it made things worse. 7=Yes, it helped a great deal.

Have Objectives Been Achieved?

Data for SFY 2014-2015 is not yet available for child maltreatment and out of home placements. A recent Return on Investment (ROI) study in a few counties indicated varied results including: (1) reductions in out of home placement of up to 43%; (2) a 49% reduction in Emergency Department use; (3) a 28% reduction in drop-out rates; and (4) a 25% reduction in child maltreatment.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

Continued funding is recommended for this evidence-based program.

- As previously noted, in previous clinical trials, it took at least four years of full implementation of Triple P in a community before population-level indicators began to drop. In fact, rates of child maltreatment and out-of-home placements tended to rise during the initial years because it became more socially responsible to report abuse and neglect.
- Recent Return on Investment studies in counties currently funded indicate positive trends in social indicators are being achieved (see *Have Objectives Been Achieved?*)

Consequences of Discontinuing Funding:

- Research has shown that the implementation of Triple P reduces child maltreatment, improves parent-child relationships, reduces child abuse and neglect, reduces out-of-school suspensions related to behavioral problems, and increases the use of positive parenting skills to manage behavior.
- To discontinue an evidence-based program at this point in time would negate investments in 33 counties across North Carolina that are at a point in time (4 years) when they should start demonstrating some change in outcomes based on historical results of other programs.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

None

Recommendations for Change (Statutory, Budgetary, or Administrative):

- Triple P is most effective when implemented to scale in a community and therefore has the greatest impact on reducing costs associated with out-of-home placements, emergency department use related to maltreatment injuries, and substantiated cases of abuse and neglect. When taken to scale, Triple P becomes a common language for parents and providers, reducing the conflicting messages across service agencies and organizations.
- Triple P, as a population-based approach, is a very complementary program with other evidence-based, targeted family strengthening programs, such as Strengthening Families and Incredible Years. Strengthening Families and Incredible Years can be incorporated into the Triple P system as a substitute for group Triple P. Current users of these two programs include local mental health and social services agencies (with the endorsement of their State counterparts) and local Smart Start agencies.
- Triple P can also be used by the court system, juvenile justice or social services to meet their mandated family strengthening training requirement.

External Factors

Policy Issues or Other Relevant Information:

Since Triple P is one of the few evidence-based programs that has been demonstrated to effectively reduce child maltreatment, state and local agencies in North Carolina that offer family strengthening initiatives would benefit from including Triple P as an evidence-based family strengthening option for local funding opportunities.

- DPH has shared this information with the DHHS Division of Social Services' staff to explore funding opportunities for its home visiting programs.
- Local Smart Start agencies are also beginning to provide funding for staff training for Triple P.

WIC, or Special Supplemental Nutrition Program for Women, Infants and Children

Open Window Service: Women, Infants and Children

Current Environment

Description of Mission, Goals, Objectives, and Functions:

- WIC Program's mission is to provide food to low-income pregnant, postpartum and breastfeeding women and their infants and children until the age of five, and offer a combination of nutrition education, supplemental foods, breastfeeding promotion and support, and referrals for health care.

- The WIC Program's goals, objective and functions are to improve pregnancy outcomes, reduce maternal and early childhood morbidity and mortality, and optimize the growth and development of children through improved nutritional status.
- WIC uses evidence-based and best practice strategies (**see Resources**) as follows:
 - Research shows that women who participate in WIC give birth to healthier babies who are more likely to survive infancy. There is a link between prenatal WIC participation and lower infant mortality.
 - While women participating in WIC are less likely to choose to breastfeed, the gap has narrowed in recent years. For example, the percentage of infants participating in WIC who were breastfed rose by 39 percent, from 44.5% to 67.1%, between 2000 and 2012.
 - Data shows that low-income children participating in WIC have vaccination rates comparable to higher-income children.
 - WIC has an important positive influence on participants' diets. Studies show that after WIC updated its food packages to reflect current dietary guidance, WIC participants buy and eat more fruits, vegetables, whole grains and low-fat dairy products. Studies also show that the newer requirements have increased the supply of healthy foods, especially in low-income communities.
 - With the support of sound nutrition provided during critical periods of growth, new research suggests that prenatal and early childhood participation in WIC is associated with improved cognitive development. Children whose mothers participated in WIC while pregnant scored higher on assessments of mental development at age 2 than similar children whose mothers did not participate.
- WIC is administered by 82 Local health departments and 3 non-profit health agencies (Tri-County Community Health Center, Lincoln Community Health Center, and Piedmont Health Services). It is available statewide.

Program Activities:

This program provides support to state and local agency WIC Program services to provide supplemental foods, nutrition education and breastfeeding support and promotion to serve pregnant, breastfeeding and, postpartum women, infants and children up to age five. Specific areas of focus include:

- Provide WIC Program Services to children 1 to 5 years of age enrolled in Medicaid
- Provide WIC Program Services to children 1 to 5 years of age who are served in Local Health Department Child Health Clinics
- Provide WIC Program Services to pregnant women who participated in WIC during the first trimester of pregnancy
- Provide WIC Program Services to children less than 12 months of age enrolled in Medicaid
- Provide WIC Program Services to Medicaid enrolled pregnant women
- Provide WIC Program Services to children less than 12 months of age who were served in the Local Health Department Child Health Clinic
- Provide WIC Program Services to pregnant women who participated in WIC during pregnancy and were recertified for WIC by 6 weeks postpartum

Statutorily Required Functions:

Code of Federal Regulations (CFR) - 7 CFR Part 246

Source of Funds (SFY 2014-2015 certified budget as of 9/18/2014):

SFY 14-15 Funding Source	Funding Type	Amount
Infant Formula Rebates	State Receipt	\$64,893,718
Vendors Refunds	State Receipt	\$288,094
Medicaid	Federal	\$283,477
WIC Grant	Federal	\$232,058,830
Farmer's Market Grant	Federal	\$518,804
Breast Feeding Peer Counseling Grant	Federal	\$2,379,884
Appropriations	State	\$357,485
GRAND TOTAL		\$300,780,292

44 FTEs

Program Performance

Problem or Need Addressed:

- Low income WIC target population (pregnant, breastfeeding, and post-partum women, infants and children up to age 5) are at a higher risk of medical-based or dietary-based conditions. Examples of medical-based conditions include anemia, underweight or poor pregnancy outcomes such as, low birth weight, pre-term delivery and fetal death. Dietary-based conditions include a poor diet, which can lead to overweight and obesity.
- Studies have shown that low income families who participate in WIC have improved pregnancy outcomes, resulting in healthier babies and reduced newborn medical costs. WIC benefits the infants and saves Medicaid millions of dollars in intensive neonatal care.
- The WIC Program has proven effective in preventing and improving nutrition related health problems within its population.

Performance Measures Defined and State Fiscal Year 2014-2015 Status

There are 10 performance measures defined for each local health department and non-profit health agencies. The SFY 2013-2014 statewide performance measures results are as follows (SFY2014-2015 performance data will not be available until December 2015):

- 60.0 % of children 1 to 5 years of age enrolled in Medicaid who received WIC Program Services. SFY 2013-2014 achieved: 56.8%
- 75.0% of children less than 12 months of age enrolled in Medicaid who received WIC Program Services. SFY 2013-2014 achieved: 71.0%
- 75.0% of Medicaid enrolled pregnant women who received WIC Program Services. SFY 2013-2014 achieved: 73.9%
- 80.0% Percent of pregnant women who participated in WIC during pregnancy and were recertified for WIC by 6 weeks postpartum. SFY 2013-2014 achieved: 75.1%
- 28.1% of pregnant women who participated in WIC who received WIC program services during the first trimester of pregnancy. SFY 2013-2014 achieved: 28.1%
- 265,000 Average Monthly WIC Participation. SFY 2013-2014 achieved: 255,065
- 25.0% of infants enrolled in WIC are breastfeeding at six months of age. SFY 2013-2014 achieved: 20.0%

- 40.0% of infants enrolled in WIC are breastfeeding at six weeks of age. SFY 2013-2014 achieved: 36.1%
- 60.0% of women enrolled in WIC initiated breastfeeding. SFY 2013-2014 achieved: 58.6%

Have Objectives Been Achieved?

- Not all stated performance objectives have been met. The percent of pregnant women who participated in WIC who received WIC program services during the first trimester of pregnancy met the goal of 28.1%. Other performance objectives remain below stated goals.
- Overall, the North Carolina WIC Program has seen a decrease in participation from an average participation in Federal Fiscal Year (FFY) 2011 of 265,854 to an average participation of 247,793 in FFY 2015. This is consistent with what is being seen nationally. Nationally, FFY 2014 participation was 8,258,000 and FFY 2015 preliminary participation estimates are 8,024,000.
- Outreach efforts are underway at Local, State, Regional and National levels to help stabilize participation levels. The Program is dedicated to making strides in serving this vulnerable population. The implementation of the Crossroads system in North Carolina WIC will establish new baseline data against which future years' performance will be benchmarked and evaluated.

Link between Funding/Resources and Statewide/Societal Impact

See chart in Appendix 3

Program Justification

Rationale for Recommended Funding Level:

The program is fully federally funded, is evidence-based and is meeting at least one of its stated objectives. At least current funding level is recommended to maintain the required federal activities associated with this grant funding.

Consequences of Discontinuing Funding:

The United States Department of Agriculture provides the State with most of the funding to support the WIC program. Should funding be discontinued, the program would not be able to provide supplemental foods, nutrition education or breastfeeding support and promotion to approximately 255,000 participants served each month. Participants would likely experience unsatisfactory health outcomes as previously noted, including associated increased medical costs.

Recommendations to Improve Efficiency and Effectiveness

Recommendations for Improving Services, or Reducing Costs or Duplication:

The WIC program is in the planning phase of Electronic Benefits Transfer (EBT), which will allow participants to utilize payment cards instead of paper checks to obtain supplemental foods. The following are anticipated benefits of EBT implementation:

- Increased efficiency and greater control over program management.
- Ability to assist in identifying fraud by analyzing vendors' redemption patterns to identify high risk vendors.

- Reduction in banking fees for processing and editing food instruments.
- Participant satisfaction – more seamless and confidential transactions at the checkout lane in grocery stores, in addition to being able to purchase items on multiple shopping trips versus purchasing all items that are on a food instrument at one time.
- Nutrition outcome – Participants will be able to maximize their benefits by purchasing foods at different times throughout the month. Additionally, local staff will be able to tailor food packages based on actual redemption.
- Reduction in hardware costs via elimination of printers.

Recommendations for Change (Statutory, Budgetary, or Administrative):

None

External Factors

Policy Issues or Other Relevant Information:

Not Applicable

APPENDIX 3
Chart of DHHS Program Links between Funding/Resources
and Statewide/Societal Impact

Chart of DHHS Program Links between Funding/Resources And Statewide/Societal Impact

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
17P (progesterone)	17P provided free of charge to pregnant women; provider education on use of 17P	Number of pregnant women receiving 17P	Reduced preterm labor	Decreased cost of medical care in NC; improved birth outcomes
Care Coordination for Children, CC4C (for Children Ineligible for Medicaid)	Assures provision of preventive care for children who are likely to have long-term health and developmental concerns using evidence-informed interventions	Number of non- Medicaid eligible children receiving care management services	Reduced negative results of toxic stress by disrupting the causal mechanisms that link early adversity to later impairments in learning, behavior, and both physical and mental well-being.	Strengthens the foundations of physical and mental health over the lifespan; decreases unhealthy life styles; Reduces chronic illnesses and poor birth outcomes
Carolina Pregnancy Care Fellowship	Operational support to pregnancy resource centers to expand and improve program services	Number of pregnancy centers who receive technical assistance and training	Increased access to resources to women who face challenging pregnancy situations in their local communities.	Increased resources for pregnant women to promote healthy outcomes.
Care Coordination for Children, CC4C (for Medicaid Eligible Children)	Assures provision of preventive care for children who are likely to have long-term health and developmental concerns using evidence-informed interventions	Number of Medicaid eligible children receiving care management services	Promotes wellness, and improved health outcomes, as well as reduced negative results of toxic stress by disrupting the causal mechanisms that link early adversity to later impairments in learning, behavior, and both physical and mental	Strengthens the foundations of physical and mental health over the lifespan; decreases unhealthy life styles; Reduces chronic illnesses and poor birth outcomes

			well-being.	
DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
Child and Adult Care Food Program (CACFP) (multiple pathways exist)	Increasing access to healthy food for children and adults who may otherwise not have access to food through reimbursement to institutions that serve nutritious meals to enrolled participants.	Number of children and adults who receive healthy meals (average daily attendance of 116,000)	Healthy weight gain and growth for children; health and wellness of older adults and chronically impaired disabled persons	Decreased cost of medical care and social services in NC. Increased child readiness to start school; increased educational attainment
Child Health Services for Local Health Department Clinics	Assures preventive and sick care, immunizations, and developmental screening for children in low income families	Number of children receiving preventive care, immunizations and sick care	Decreased rates of infectious diseases in childhood; improved health of children; improved school attendance & educational outcomes for children	Decreased cost of medical care and social services in NC. Increased child readiness to start school; increased educational attainment
Childhood Lead Poisoning Prevention Program Example 1 (multiple pathways exist)	Surveillance of elevated blood lead levels/ confirmed lead poisoning cases through monitoring of blood lead tests and follow-up for children less than six years of age (and refugee children through 16 years)	Number of children tested for blood lead levels, number of elevated blood lead levels, number of confirmed lead poisoning cases	Decreased lead poisoning in children less than 6 years of age and refugee children	Decreased medical, welfare, correctional, and educational costs for NC; improved cognitive and behavioral outcomes for children

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
Childhood Lead Poisoning Prevention Program Example 2 (multiple pathways exist)	Investigation of homes, schools, and child care facilities with children under six years old for environmental sources of lead; Education of property owners and parents on interventions to prevent continued lead exposure; Promotion of lead-safe renovation and repair	Number of environmental lead investigations performed	Decreased sources of lead in homes and surrounding properties with children, increased knowledge of lead poisoning prevention among families	Decreased medical, welfare, correctional, and educational costs for NC; improved cognitive and behavioral outcomes for children; Decreased environmental contamination
Childhood Lead Poisoning Prevention Laboratory Testing (State Laboratory of Public Health)	Laboratory testing at State Laboratory of Public Health for children less than six years of age (and refugee children through 16 years)	Number of children tested for blood lead levels and number of elevated blood lead levels	Decreased lead poisoning in children less than 6 years of age	Decreased medical, welfare and educational costs; improved cognitive outcomes for children.
Cochlear Implant Program	Comprehensive and multidisciplinary evaluation and treatment of communicative disorders related to hearing loss for children in North Carolina ages birth to 21	Number of children receiving cochlear implants, family training and related follow up services.	Improved listening and language competence, school readiness, and literacy development for children who are deaf or hard of hearing.	Reduction in health care costs over each child's lifetime. Increased child readiness to start school; increased educational attainment
Craniofacial Services	Provides optimal care for children birth to 21 with cleft lip, cleft palate, and other craniofacial anomalies through an interdisciplinary team-oriented approach	Number of children receiving comprehensive craniofacial services and follow-up by a multidisciplinary team	Improved child health; reduction in child hospitalizations for this population of children.	Decreased cost of medical care and social services in NC. Increased child readiness to start school; increased educational attainment

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
Early Intervention (EI)	Evaluation, Assessment, Service Coordination and provision of services for infants, toddlers with developmental delays & their families	Number of infants and toddlers (with developmental delays and established conditions known to result in developmental disabilities) provided EI services	Increased developmental functioning of infants and toddlers (cognitively, social/emotionally and in language)	Increased child readiness to start school; improved educational outcomes for children. Decreased medical, welfare and educational costs
Genetic Counseling Services	Care for children birth to 21 with genetic disorders.	Number of children and families receiving genetic testing and counseling services	Reduction in child hospitalizations for children with genetic disorders; improved health outcomes; improved pregnancy planning	Reduced long term medical costs in NC
Healthy Beginnings Example 1 (Multiple pathways exist)	Assessment of tobacco use; assessment and education of minority pregnant and postpartum women on folic acid use	Number of minority women who use tobacco, and number of minority women who use folic acid	Improved folic acid use, reduction in tobacco use, and improved birth outcomes	Decreased cost of medical care in NC
Healthy Beginnings Example 2 (Multiple pathways exist)	Education of minority pregnant & postpartum women of importance of breastfeeding & well child visits	Number of minority women who breastfeed; number of minority babies who receive well child care	Improved health of minority babies; improved health outcomes for children up to age two	Decreased cost of medical care in NC

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
Healthy Families America	Parenting education and guidance to overburdened families who are at-risk for adverse childhood experiences, including child maltreatment, abuse, and neglect	Number of families receiving parenting education and guidance	Reduced family violence, increased self-sufficiency, and enhanced of school readiness. Improved pregnancy outcomes; increased prenatal care, improved diet and nutrition, and reduction of tobacco, alcohol, and drug use.	Decreased medical costs in NC. Improved social emotional health of children; increased school readiness and school attainment. Reduced societal costs in social services.
Immunization Program	Vaccine provided free of charge to eligible children; providers monitored for compliance with State and federal requirements; providers educated on ACIP schedule and strategies to increase immunization coverage levels; vaccine preventable disease surveillance conducted and outbreaks investigated; statewide secure, web-based immunization registry maintained.	Number of citizens receiving vaccines according to best practice guidelines	Increased in immunization coverage levels and access to immunization records. Decreased vaccine preventable disease cases; improved health outcomes for infants, children and adults	Reduced morbidity and mortality from vaccine preventable diseases; reduced direct and indirect financial burden to NC
March of Dimes Example 1 (Multiple pathways exist)	Multivitamins with folic acid provided to women of reproductive age	Number of women of reproductive age taking multivitamins	Decreased birth defects	Decreased cost of medical care in NC

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
March of Dimes Example 1 (Multiple pathways exist)	Preconception health education provided to women of reproductive age	Number of women provided education before pregnancy	Decrease in negative maternal and infant health issues such as gestational diabetes; improved birth outcomes	Decreased cost of medical care in NC
Maternal Health Clinical Services	Clinical prenatal care, screenings, tobacco cessation counseling, referrals for Medicaid and WIC services, administration of 17P and provision or referral for nutrition consultation provided to low-income pregnant women	Number of pregnant women served; number of services provided to pregnant women	Improved prenatal care; early entry into prenatal care; improved birth outcomes	Decreased cost of medical care in NC
Maternal Health Clinical Services (high risk)	High risk maternity clinic services provided to low-income, high risk pregnant women	Number of unduplicated patients served at the High Risk Maternity Clinics	Improved birth outcomes	Decreased cost of medical care in NC
National Society to Prevent Blindness	Vision screening, education, and training	Number of pre-kindergarten children screened and school personnel trained to screen school age children	Early treatment and remediation of Amblyopia, strabismus and significant refractive errors, which may cause permanent damage to children's vision.	Reduced medical costs by preventing permanent damage to children's eyes. Improved educational achievements and success in school
Newborn Hearing Screening Program	Hearing screening and follow-up in a timely manner for infants identified at birth	Number of infants screened for hearing and the number successfully followed up for early identification of hearing loss, and intervention	Improved speech and language acquisition, academic achievement, and social and emotional development.	Increased education success for children. Higher employment levels in adulthood and lower social costs.

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
Newborn Metabolic Screening and Follow-up	Laboratory newborn screening and reporting of abnormal newborn metabolic screening results to the appropriate health care provider, and provision of recommendations for diagnostic testing, follow-up and referrals.	Total number of newborns screened; number of newborns successfully screened for metabolic disorder; number of borderlines and abnormal results followed in a timely manner	Early identification treatment and follow-up prevents mental retardation, death and a variety of costly morbidities	Reduction in medical costs, morbidity and mortality of children
NC Baby Love Plus Example 1 (Multiple pathways exist)	Motivational Interviewing techniques to promote healthy behaviors	Number of women who initiate and sustain breastfeeding; number of women and infants who have insurance and participate in a medical home	Increased minority women initiating and sustaining breastfeeding; improved birth outcomes	Decreased cost of medical care in NC
NC Baby Love Plus Example 2 (Multiple pathways exist)	5As Smoking Cessation (ask, advise, assess, assist, arrange) - for counseling and referral for smoking cessation services	Number of women who smoke during pregnancy	Decreased minority women utilizing tobacco products; improved birth outcomes	Decreased cost of medical care in NC

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
NC Fetal Alcohol Prevention Program (FASDinNC)	<p>Increase awareness of FASD in support of FASD Awareness Day.</p> <p>Provide FASD presentations, educational/training sessions, exhibits and/or network at a minimum of 12 (twelve) seminars, conferences or training events to a variety of disciplines throughout North Carolina.</p> <p>Maintain the www.MothertoBabyNC.org and www.FASDinNC.org websites in order to provide up-to-date information about FASD for women of child bearing years, families of individuals with a FASD, and the professionals that work with them.</p>	<p>Two FASD Proclamations signed by the Governor and the Mayor of Charlotte, respectively.</p> <p>Comprehensive social media campaign delivered via Facebook and Twitter.</p> <p>Distributed an electronic FASD Awareness Program to 26 NC Perinatal Maternal & CASAWORKS Initiative programs throughout the State.</p> <p>FASD Awareness Day Press Release resulted in media coverage of the event both regionally and statewide via CBS and Time Warner networks (projected outreach of 4,000) Number of participants at the FASD Awareness Day Event.</p> <p>Number of individuals reached through outreach opportunities.</p> <p>Number of hits to FASDinNC.org and MothertoBabyNC/teratogen webpage.</p>	<p>Decrease number of alcohol exposed pregnancies, which impacts preterm births, infant mortality and low birth weights as well as the long term impact of individuals with Fetal Alcohol Spectrum Disorders (FASDs); Increase awareness & knowledge of FASDs among professionals that work with women of childbearing age (15-44 yrs.) & provide resources for professionals that work with individuals who have an FASD or families who have a child with FASDs;</p> <p>Decrease in number of alcohol exposed pregnancies, improved birth outcomes, and increased resources for families and individuals with an FASD.</p>	<p>Decreased cost of medical care related to high risk birth/deliveries and social services for individuals with a FASD in NC.</p>

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
Nurse Family Partnership Program	Provide parenting education and guidance to overburdened families who are at-risk for adverse childhood experiences, including child maltreatment, abuse, and neglect	Number of families receiving parenting education and guidance	Improved pregnancy outcomes; prevention of child abuse and neglect; improved child health; reduced chronic illnesses; improved readiness for school	Decreased cost of medical care in NC; increased educational attainment; reduced cost of societal supports
Perinatal Quality Collaborative of NC (PQCNC)	Quality improvement training on maternal, nursery and neonatal quality initiatives based on best practice	Number of maternal, nursery and neonatal quality initiatives developed and implemented; number of learning sessions held; number of webinars held	Increased perinatal health knowledge gained; improved service delivery and educational outcomes for perinatal health providers; improved birth outcomes	Decreased cost of medical care in NC

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
Perinatal & Maternal Substance Use & CASAWORKS for Families Residential Initiatives	Gender responsive family-centered substance use disorder treatment for pregnant women and women with dependent children	<p>Number of pregnant and parenting women who receive evidence-based treatment.</p> <p>Number of children whose mothers receive substance use disorder treatment.</p>	<p>Outcomes for mothers include reduction in substance use and mental health symptom severity, reduction in experiences of interpersonal violence, HIV risk behavior, criminal justice involvement, improved birth outcomes, improved housing & recovery stability for the woman & her children, child welfare custody cases closed and reunification of children with their mothers, linkage to needed health, education, increased parenting skills.</p> <p>The outcomes for children include linkage to pediatric, developmental, and behavioral health services, reduction in mental health symptomology for those requiring mental health treatment, increase rates of immunization & overall improvement in health & wellbeing.</p> <p>Decrease in number of infants exposed to substances in utero, Increased likelihood of being full term, & healthy birth weight.</p> <p>Increase in number of children with early identification of behavioral and developmental delays and subsequent access to supports, thus increasing learning and educational engagement.</p> <p>Decrease in child welfare involvement due to reunification with parent or avoidance of entering foster care system.</p>	Decrease costs for foster care, medical services for women and children & criminal justice; decrease in infant mortality rates; reduced cost of societal supports.

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
Perinatal Substance Use Project	Coordination of a statewide Substance Abuse Treatment Prevention Block Grant required capacity management system for linking pregnant and parenting women and their children to needed substance use disorder treatment services, and other community or interim services.	Maintained bed availability lists updated weekly; Distribute notice of bed availability to healthcare, community agency professionals, and behavioral health treatment providers weekly; Managed calls from health care providers, community agencies, families, and pregnant women and women with children seeking treatment; Coordinated referral for women & their children to substance use disorder treatment services & interim services; Trained and provided technical assistance to professionals, community providers and public regarding perinatal and maternal substance use; Advocacy for women with children seeking to overcome barriers to substance use disorder treatment and other health care resources.	Reduced barriers and increased access for pregnant & parenting women & their children to access needed treatment services; Early identification of potential substance use disorders and appropriate referral for services; Increased awareness of substance use treatment services for pregnant & parenting women & their children.	Decrease costs for foster care; decreased medical costs for the women and children; decrease criminal justice costs; decrease in infant mortality rates.

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
Pregnancy Care Management Services (for women ineligible for Medicaid)	Pregnancy Care Management services provided to women ineligible for Medicaid who are at risk for poor birth outcomes due to prenatal risk factors	Number of women ineligible for Medicaid with priority risk factors who receive pregnancy care management services.	Improved prenatal care outcomes; improved birth outcomes	Decreased cost of medical care in NC
Pregnancy Medical Home (for women eligible for Medicaid)	Pregnancy Medical Home services provided to women eligible for Medicaid. PMHs promote best prenatal care using evidenced-based guidelines. PMHs screen for risk factors in order to refer women with high-risk factors to Pregnancy Care Management	Number of women eligible for Medicaid.	Improved prenatal care outcomes; improved birth outcomes	Decreased cost of medical care in NC
Pregnancy Care Management Services (for women eligible for Medicaid)	Pregnancy Care Management services provided to women eligible for Medicaid who are at risk for poor birth outcomes due to prenatal risk factors	Number of women eligible for Medicaid with priority risk factors who receive pregnancy care management services.	Improved prenatal care outcomes; improved birth outcomes	Decreased cost of medical care in NC
Safe Sleep	Safe sleep messages disseminated to pregnant women, parents, and caregivers; education, training and technical support to healthcare providers, community based organizations and hospitals	Number of pregnant women, parents, caregivers and providers educated on safe sleep positioning and environments, including secondhand smoke exposure	Reduced risk of death due to Sudden Infant Death Syndrome (SIDS), accidental infant asphyxiation, and suffocation; improved infant health and reduced infant mortality	Decreased cost of medical care and societal supports in NC

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
Triple P Program	Strengthen parenting skills at a population level to increase positive parenting, reduce coercive parenting, lower social emotional and behavioral health problems and improve parent-child relations. and decrease parenting stress	Number of professionals trained and the number of families (caretakers) receiving Triple P interventions	Reduce out of home placements, reduce emergency department visits related to maltreatment injuries, and to reduce the number of substantiated child abuse cases	Strengthens the foundations of physical and mental health over the lifespan; decreases unhealthy life styles; Reduces chronic illnesses and poor birth outcomes
Young Families Connect (Multiple pathways exist)	Evidence-based and evidence-informed interventions: <ul style="list-style-type: none"> • Incredible Years parenting program • Ready Set Plan health and wellness groups • Domestic violence prevention education groups 	Number of participants who completed the Incredible Years parenting program; number of persons who completed the Ready, Set, Plan health and wellness group series; number of participants who completed the domestic violence prevention education group series	Increased parenting competency; improved birth and child outcomes	Decrease cost of medical care in NC and reduced cost of societal supports
WIC, or Special Supplemental Nutrition Program for Women, Infants and Children Example 1 (Multiple pathways exist)	Provide WIC Program Services to pregnant women who participated in WIC during the first trimester of pregnancy.	Percent of pregnant women who participated in WIC who received WIC program services during the first trimester of pregnancy	Earlier prenatal care, improved dietary intake of pregnancy women and improved pregnancy outcomes (reduced low birthweight rates, reduced preterm delivery, reduced infant mortality).	Decreased cost of medical care and social services in NC

DHHS Program	Activities	Outputs	Outcomes	Statewide/Society Impacts
WIC, or Special Supplemental Nutrition Program for Women, Infants and Children Example 2 (Multiple pathways exist)	Provide WIC Program services to children one to five years of age enrolled in Medicaid	Percent of children one to five years of age enrolled in Medicaid who received WIC program services	Improved children's diets; more regular medical care for children, including more up to date immunizations; children who receive WIC benefits demonstrate improved intellectual development	Increased child readiness to start school; increased educational attainment

APPENDIX 4

Resources

Resources

General

North Carolina's Perinatal Health Strategic Plan 2016 -2020. The plan was released at the Department of Health and Human Services' Infant Mortality Summit in March 2016. Electronic version is undergoing formatting and will be available online in April 2016.

North Carolina Preconception Health Strategic Plan (2014 – 2019), <http://whb.ncpublichealth.com/docs/NorthCarolinaPreconceptionHealthStrategicPlanSupplement-2014-2019.pdf>. Accessed March 2016.

Bowen, S, Zwi AB (2005). Pathways to “evidence-informed” policy and practice: A framework for action. *PLoS Med* 2(7):e166.

Improving North Carolina's Health: Applying Evidence for Success (2012). Report of the North Carolina Institute of Medicine Task Force on Implementing Evidence-Based Strategies in Public Health.

SAMSHA's National Registry of Evidence-Based Programs and Practices. <http://www.nrepp.samhsa.gov/>. Accessed October 28, 2015.

World Health Organization (WHO) Evidence-Informed Policy-Making. <http://www.who.int/evidence/about/en/>. Accessed October 28, 2015.

Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence-based medicine: what it is and what it isn't. *BMJ: British Medical Journal*. 1996;312(7023):71-72.

Life Course Perspective

Braveman P, Barclay C. Health disparities beginning in childhood: A life-course perspective. *Pediatrics* 2009; 124 Supplement: S163-S175.

Guyer B, Ma S, Grason H, Frick K, Perry D, Sharkey A, McIntosh J. Early childhood health promotion and its life course health consequences. *Academic Pediatrics* 2009;9(3), 142-149.

Halfon N Hochstein M. Life course health development: An integrated framework for developing health policy, and research *The Milbank Quarterly* 2002;80(3):433-479.

Lu MC, Kotelchuck M, Hogan V, Jones L, Wright K, Halfon N. Closing the black-white gap in birth outcomes: A life-course approach. *Ethn Dis* 2010; 20(1) Supplement 2: S2-62-76.

Evidence for 17P Program Interventions

Da Fonseca EB, et al. Prophylactic administration of progesterone by vaginal suppository to reduce the incidence of spontaneous preterm birth in women at increased risk: A randomized placebo-controlled double-blind study. *Am J Obstet Gynecol* 2003;188:419-24.

Meis PJ. 17 hydroxyprogesterone for the prevention of preterm delivery. *Obstet Gynecol* 2005;105:1128-35.

Meis PJ et al. Prevention of recurrent preterm delivery by 17 alpha-hydroxyprogesterone caproate. *N Eng J Med* 2003;348:2379-85.

Evidence for Carolina Pregnancy Care Program

None found in the literature.

Evidence for Healthy Beginnings Interventions

2014 Recommendations for pediatric preventive health care. American Academy of Pediatrics. *Pediatrics* 2014;133;568.

Breastfeeding in underserved women: increasing initiation and continuation of breastfeeding. ACOG Committee Opinion No. 570. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2013; 122:423-8.

Farahi N, Zolotor A. Recommendations for preconception counseling and care. *Am Fam Physician* 2013 Oct 15;88(8):499-506.

Intimate partner violence. ACOG Committee Opinion No. 518. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2012; 119:412-7.

Partridge S, Balayla J, Holcroft CA, abenhaim HA. Inadequate prenatal care utilization and risks of infant mortality and poor birth outcome: a retrospective analysis of 28,729,765 U.S. deliveries over 8 years. *Amer J Perinatol* 2012; 29(10):787-794.

SIDS and other sleep-related infant deaths: expansion of recommendations for a safe infant sleep environment. American Academy of Pediatrics. *Pediatrics* Volume 128, Number 5, November 2011.

Smoking cessation during pregnancy. ACOG Committee Opinion No. 471. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2010; 116:1241-4.

The importance of preconception care in the continuum of women's health care. ACOG Committee Opinion No. 313. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2005; 106:665-6.

US Department of Health and Human Services, Centers for Disease Control and Prevention's Preconception Health and Health Care Reproductive Life Plan Tool for Health Professionals was developed in partnership with Merry-K Moos, RN, FNP, MPH, FAAN, Department of Obstetrics and Gynecology, University of North Carolina at Chapel Hill and is based on her webinar, "Reproductive Life Plans" (February 25, 2010)
<http://www.beforeandbeyond.org/?page=cme-modules>

Weight gain during pregnancy. ACOG Committee Opinion No. 548. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2013; 121:210-2.

Yonkers KA, Gotman N, Kershaw T, Forray A, Howell HB, Rounsaville BJ. Screening for prenatal substance use: development for the substance use risk profile-pregnancy scale.

American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2010; 116:827-33.

Evidence for March of Dimes Interventions

Berry RJ, Li Z, Erickson JD, et al. Prevention of neural-tube defects with folic acid in China. *N Engl J Med* 1999;341:1485-1490.

Biermann J, Dunlop A, Brady C. Promising practices in preconception care for women at risk for poor health and pregnancy outcomes. *Matern Child Health J* (2006);10:S21–S28.

deRosset L, Mullenix A, Flores A, Mattia-Dewey D, Mai CT. Promotora de Salud: promoting folic Acid use among Hispanic women. *J Womens Health (Larchmt)*. 2014 June ; 23(6): 525–531. doi:10.1089/jwh.2013.4695.

Dixon-Gray L, et al. (2013). Amor Y Salud (Love and Health): A preconception health campaign for second generation Latinas in Oregon. *American Journal of Health Promotion*;27(3); S74-76. doi: 10.4278/ajhp.120113-ARB-29.

Jack BW, Atrash H, DV Coonrod. The clinical content of preconception care: an overview and preparation of this supplement. *ACOG* 2008 Dec. Suppl;S266-S279.

Mullenix A. Reaching women and health care providers with women's wellness messages: the North Carolina Folic Acid Campaign as a model. *NC Med J* 2009;70(5):472-75*.

Prue CE, Daniel KL. (2006). Social marketing: planning before conceiving preconception care. *Maternal Child Health Journal*; 10: S79-S84. Doi: 10.1007/z10995-006-0105.

Show Your Love: Process Evaluation Report, April 2014, National Initiative to Promote Preconception Health and Health Care, CDC, <http://www.cdc.gov/preconception/showyourlove/>

The National Preconception Curriculum and Resources Guide for Clinicians, available at www.beforeandbeyond.org.

Williams J, Mai C, Mulinare J. Updated Estimates of Neural Tube Defects Prevented by Mandatory Folic Acid Fortification — United States, 1995–2011. *MMWR Morbid Mortal Wkly Rep* 2015;64:1–5.

Evidence for Maternal Health Clinical Services Interventions

American College of Obstetricians and Gynecologist. (2009). *Postpartum screening for abnormal glucose tolerance in women who had gestational diabetes mellitus*. Committee Opinion, 435, 1419-1421.

American College of Obstetrician and Gynecologist. (2009). *Informed consent*. Committee Opinion, 439, 1-8.

American College of Obstetricians and Gynecologist. (2009). *Preconception and prenatal Carrier screening for genetic diseases in individuals of Eastern European Jewish descent*. Committee Opinion, 442, 950-953.

American College of Obstetricians and Gynecologist. (2011). *Cultural sensitivity and awareness in the delivery of health care*. Committee Opinion, 493, 1258-1261.

American College of Obstetricians and Gynecologist. (2012). *Prediction and prevention of preterm birth*. Committee Opinion, 130, 964-973.

American College of Obstetricians and Gynecologist. (2012). *Screening for cervical cancer*. Practice Bulletin, 131, 1222-1238.

American College of Obstetricians and Gynecologists (2012). *Guidelines for Perinatal Care* (7th edition), Elk Grove Village, IL: American Academy of Pediatrics.

American College of Obstetricians and Gynecologists. (2008). Use of progesterone to reduce preterm birth. Committee Opinion, 419, 963-965.

American College of Obstetricians and Gynecologists. (2012). *Intimate partner violence*. Committee Opinion, 518, 412-417.

American College of Obstetricians and Gynecologists. (2013). *Breastfeeding in underserved women: Increasing initiation and continuation of breastfeeding*. Committee Opinion, 570, 1-6.

American College of Obstetricians and Gynecologists. (2013). *Update on immunization and Pregnancy: tetanus, diphtheria, and pertussis vaccination*. Committee Opinion, 566, 1411-1414.

Centers for Disease Control and Prevention (CDC). (2010). *Guidelines for the prevention of perinatal Group B Streptococcal disease*. Morbidity and mortality weekly report (MMWR), 59, 1-31.

Centers for Disease Control and Prevention (CDC). (2010). Guidelines for the identification and management of lead exposure in pregnant and lactating women. Retrieved from <http://www.cdc.gov/nceh/lead/publications/LeadandPregnancy2010.pdf>

Centers for Disease Control and Prevention (CDC). (2010). *Sexually transmitted diseases treatment guidelines*. Morbidity and mortality weekly report (MMWR), 59, 1-110.

Centers for Disease Control and Prevention (CDC). (2011). *General recommendations on immunizations*. Morbidity and mortality weekly report (MMWR), 60, 20.

United States Preventive Services Task Force (USPSTF) (2014).

Evidence for NC Baby Love Plus Interventions

American Academy of Pediatrics. (2001). Developmental Surveillance and Screening of Infants and Young Children. *Pediatrics*, 108(1), 192–196.

Deutscher, B., Fewell, R., & Gross, M. (2006). Enhancing the interactions of teenage mothers and their at-risk children: Effectiveness of a maternal-focused intervention. *Topics in Early Childhood Special Education*, 26(4), 194-205.

Elizabeth Graves, R.W. Watkins Motivational Interviewing: Patient Engagement as the Key to Healthy Practices, Patients, and Practitioners. *N C Med J*. 2015;76(3):175-176. ©2015 by the North Carolina Institute of Medicine and The Duke Endowment.
<http://www.ncmedicaljournal.com/content/76/3/175.full.pdf>

Florida State University's Partner for a Healthy Baby
<http://cpeip.fsu.edu/resourceFiles/PartnersEvidenceBase2011.pdf>

Gilbody, S., Richards, D., Brealey, S., & Hewitt, C. (2007). Screening for depression in medical settings with the patient health questionnaire (PHQ): A diagnostic meta-analysis. *Journal of General Internal Medicine*, 22(11), 1596-602.

Leis, J. A., Mendelson, T., Tandon, S. D., & Perry, D. F. (2009). A systematic review of home-based interventions to prevent and treat postpartum depression. *Archives of Women's Mental Health*, 12(1), 3-13.

Lyman, D.R., Njoroge, W., Willis, D. (2007). Early childhood psychosocial screening in culturally diverse populations: Survey of clinical experience with Ages and Stages Questionnaires, Social-Emotional. *Zero To Three*, 27(5) 46–54.

Rosenberg DC, Buescher PA. The Association of Maternal Smoking with Infant Mortality and Low Birth Weight in North Carolina, 1999. SCHS Studies No. 135. Raleigh, NC: North Carolina State Center for Health Statistics, 2002 <http://www.schs.state.nc.us/schs/pdf/schs-135.pdf>

Evidence for NC Fetal Alcohol Prevention Program (FASDinNC)

Malbin, D.: Findings from the FASCETS Oregon Fetal Alcohol Project: Efficacy of a neurobehavioural construct; interventions for children and adolescents with Fetal Alcohol Syndrome/Alcohol-Related Neurodevelopmental Disabilities (FASD). Unpublished manuscript, 2002

Malbin, Diane: Fetal Alcohol Syndrome and Fetal Alcohol Effects: Trying Differently Rather Than Harder, 1999 revised 2002 available through FASCETS www.fascets.org

Evidence for Perinatal Quality Collaborative of NC (PQCNC) Interventions

The work of the PQCNC is all based on evidence-based and best practice strategies as supported by American College of Obstetricians and Gynecologists (ACOG).

Evidence for Pregnancy Care Management (for Women Ineligible for Medicaid) Interventions

Elizabeth Graves, R.W. Watkins Motivational Interviewing: Patient Engagement as the Key to Healthy Practices, Patients, and Practitioners. N C Med J. 2015;76(3):175-176. ©2015 by the North Carolina Institute of Medicine and The Duke Endowment.
<http://www.ncmedicaljournal.com/content/76/3/175.full.pdf>

Martin A, Rief W, Klaiberg A, Braehler E. Gen Hosp Psychiatry. 2006 Jan-Feb;28(1):71-7. Validity of the Brief Patient Health Questionnaire Mood Scale (PHQ-9) in the general population. <http://www.ncbi.nlm.nih.gov/pubmed/16377369>

Meis PJ, Klebanoff M, Thom E, Dombrowski MP, Sibai B, Moawad Ah, et al. Prevention of recurrent preterm delivery by 17 alpha-hydroxyprogesterone caproate. N Eng J Med 2003;348:2379-85. <http://www.ncbi.nlm.nih.gov/pubmed/12802023>

Pregnancy Care Management Standardized Plan- Care Management Standards and Common Pathway - Adapted from Case Management Society of America, 2010. Standards of Practice for Case Management. Little Rock, Arkansas.
<http://www.cmsa.org/portals/0/pdf/memberonly/StandardsOfPractice.pdf>

Rosenberg DC, Buescher PA. The Association of Maternal Smoking with Infant Mortality and Low Birth Weight in North Carolina, 1999. SCHS Studies No. 135. Raleigh, NC: North Carolina State Center for Health Statistics, 2002. <http://www.schs.state.nc.us/schs/pdf/schs-135.pdf>

SAMHSA-HRSA Center for Integrated Health Solutions. SBIRT: Screening, Brief Intervention, and Referral to Treatment. <http://www.integration.samhsa.gov/clinical-practice/SBIRT>

Screening for Domestic Violence in Health Care Settings. US Department of Health and Human Services. Office of the Assistant Secretary for Planning and Evaluation. 08/01/2013.
<http://aspe.hhs.gov/report/screening-domestic-violence-health-care-settings>

Skinner, Harvey A. "Assessment of Substance Abuse: Drug Abuse Screening Test (DAST)." Encyclopedia of Drugs, Alcohol, and Addictive Behavior. 2001. *Encyclopedia.com*. 2 Nov. 2015. <http://www.encyclopedia.com/doc/1G2-3403100068.html>

The Alcohol Use Disorders Identification Test (AUDIT): validation of a screening instrument for use in medical settings. Journal of Studies on Alcohol, 56(4), 423-432 (1995).
<http://www.jsad.com/doi/abs/10.15288/jsa.1995.56.423>

Evidence for Young Families Connect Interventions

Incredible Years Parenting Program - <http://incredibleyears.com/for-researchers/>
Motivational Interviewing - <http://mpa.in1touch.org/uploaded/38/web/PD/Mi%20Basics.pdf>
Read Set Plan Toolkit - <http://www.cdc.gov/preconception/hcp/index.html>
Reproductive Life Plan - <http://www.cdc.gov/preconception/hcp/index.html>

Evidence for CC4C Interventions

AHRQ, 2007. Closing the Quality Gap: A critical analysis of quality improvement strategies. Publication no. 04(07)-0051-7, volume 7 - Care Coordination, June 2007.

Case Management Society of America, (1995). Standards of Practice for Case Management. Little Rock, Arkansas.

Case Management Society of America, (revised, 2002). Standards of Practice for Case Management. Little Rock, Arkansas.

Case Management Society of America, 2009. (CMSA) Mission and vision. Accessed from the World Wide Web on July 7, 2009 at <http://www.cmsa.org/home/CMSA/ourMissionvision/tabid/226/default.aspx>

Duncan, D.F., Kum, H.C., Flair, K.A., Stewart, C.J., Vaughn, J.S, Guest, S., Rose, R.A, Gwaltney, A.Y., and Gogan, H.C. (2015). Management Assistance for Child Welfare, Work First, and Food & Nutrition Services in North Carolina (v3.2). Retrieved 11/1/2015 via email from Dean Duncan, University of North Carolina at Chapel Hill Jordan Institute for Families. URL: <http://ssw.unc.edu/ma/>.

National Association of Social workers (NASW). (2007). Indicators for the achievement of the NASW standards for cultural competence in social work practice. Washington, DC: NASW Press.

National Association of Social workers (NASW). (2009). Cultural and linguistic competence in the social work profession. Social work speaks: national Association of Social workers policy statements, 2009-2012 (8th ed., pp. 70-76). Washington, DC: NASW Press.

Powell, S.K. & Tahan, H.A. (2008). Case Management Society of America (CMSA) Core Curriculum for Case Management, (Ed. 2). Philadelphia: Lippincott Williams & Wilkins.

Tahan, H., Huber, d., & Downey, W. (2006). Case Managers' Roles and Functions: Commission for Case Manager Certification's 2004 Research, Part I. Lippincott's Case Management, 11(1):4-22.

U.S. Department of Health and Human Services, Office of Minority Health. (2001). National standards for culturally and linguistically appropriate services in health care. Final report. Retrieved June 29, 2009, from <http://www.omhrc.gov/assets/pdf/checked/finalreport.pdf>

Evidence for CACFP Interventions

Ammerman A, Ward DS, Benjamin SE, Ball SC, Sommers J, Malloy M, Dodds J. An intervention to promote healthy weight: Nutrition and Physical Activity Self-assessment for Child Care (NAP SACC) theory and design. *Prev Chronic Dis (serial online)*. 2007;4(3).

Ball SC, Benjamin SE, Ward DS. Development and reliability of an observation method to assess food intake of young children in child care. *J Am Diet Assoc*. 2007;107(4):656–661.

Ball SC, Benjamin SE, Ward DS. Dietary intakes in North Carolina child-care centers: Are children meeting current recommendations? *J Am Diet Assoc*. 2008;108(4):718–721.

Benjamin Neelon SE, Vaughn A, Ball SC, McWilliams C, Ward DS. Nutrition practices and mealtime environments of North Carolina child care centers. *Child Obes*. 2012;8(3):216–223.

Benjamin SE, Ammerman A, Sommers J, Dodds J, Neelon B, Ward DS. Nutrition and Physical Activity Self-assessment for Child Care (NAP SACC): Results from a pilot intervention. *J Nutr Educ Behav*. 2007;39(3):142–149.

Bower JK, Hales DP, Tate DF, Rubin DA, Benjamin SE, Ward DS. The childcare environment and children's physical activity. *Am J Prev Med*. 2008;34(1):23–29.

Drummond RL, Staten LK, Sanford MR, Davidson CL, Magda Ciocazan M, Khor KN, Kaplan F. A pebble in the pond: The ripple effect of an obesity prevention intervention targeting the child care environment. *Health Promot Pract*. 2009 Apr;10(2 Suppl):156S–167S.

IOM (Institute of Medicine). 2011. Child and Adult Care Food Program: Aligning Dietary Guide for All. Washington, DC: The National Academies Press

McWilliams C, Ball SC, Benjamin SE, Hales D, Vaughn A, Ward DS. Best-practice guidelines for physical activity at child care. *Pediatrics*. 2009;124(6):1650–1659.

Monsivais, Pablo et al. More Nutritious Food Is Served in Child-Care Homes Receiving Higher Federal Food Subsidies. *Journal of the American Dietetic Association*, Volume 111, Issue 5, 721 – 726.

Ward DS, Hales D, Haverly K, Marks J, Benjamin SE, Ball SC, Trost S. An instrument to assess the obesogenic environment of child care centers. *Am J Health Behav*. 2008;32(4):380–86.

Evidence for Child Health Services (Local Health Department Clinics) Interventions

Uses Medical Best Practices through required adherence to Bright Futures, (American Academy of Pediatrics standard of care for preventive health) guidelines in delivery of child health services.

Evidence for Childhood Lead Poisoning Prevention Program Interventions

CDC. Blood Lead Levels in Children Aged 1–5 Years — United States, 1999–2010. *MMWR* 2013; 62(RR13):245-248.

CDC. Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention. Report of the Advisory Committee on Childhood Lead Poisoning Prevention. January 4, 2012.

CDC. Recommendations for Blood Lead Screening of Medicaid-Eligible Children Aged 1--5 Years: an Updated Approach to Targeting a Group at High Risk. *MMWR*. August 7, 2009; 58(RR09);1-11.

Centers for Disease Control and Prevention (CDC). Childhood Blood Lead Levels — United States, 2007–2012. *MMWR* 2015; 62(RR54):76-80.

Kennedy C, Lordo R, Sucosky MS, Boehm R, Brown MJ. Primary prevention of lead poisoning in children: a cross-sectional study to evaluate state specific lead-based paint risk reduction laws in preventing lead poisoning in children. *Environmental Health*. 2014;13:93. doi:10.1186/1476-069X-13-93.

Kennedy, C., Lordo, R., Sucosky, M. S., Boehm, R., & Brown, M. J. (2015). Evaluating the effectiveness of state specific lead-based paint hazard risk reduction laws in preventing recurring incidences of lead poisoning in children. *International Journal of Hygiene and Environmental Health*.

Norman, E.H., Hertz-Picciotto, I., Salmen, D.A., & Ward, T.H. (1997). Childhood lead poisoning and vinyl miniblind exposure. *Archives of Pediatrics & Adolescent Medicine*, 151(10), 1033-1037.

Norman, E.H., Bordley, W.C., Hertz-Picciotto, I., & Newton, D.A. (1994). Rural-urban blood lead differences in North Carolina children. *Pediatrics*, 94(1), 59-64.

Sykes, G. (2015). Pediatric Lead Screening in the United States: A Comparative Analysis.

Evidence for Cochlear Implants

Arndt, S., Prosse, S., Laszig, R., Wesarg, T., Aschendorff, A. and Hassepass, F. (2015). Cochlear Implantation in Children with Single-Sided Deafness: Does Aetiology and Duration of Deafness Matter? *Audiol Neurotol* (suppl 1) 21-30.

Backous, D.D. and Watson, S.D. (2007). Standardization of Reliability Reporting for Cochlear Implants: An Interim Report. *Ear & Hearing*, 28(2)S91-94.

Balkany, et al. (2005). Cochlear Implant Soft Failures Consensus Development Conference Statement. *Otology & Neurotology* 26:815–818.

Basura, G.J., Eapen, , Buchman, C.A. (2009). Bilateral Cochlear Implantation: Current Concepts, Indications, and Results *Laryngoscope* 119:2395-2401.

Baudhuin, J, Cadieux, J, Firszt, J.B., Reeder, R.M., and Maxson, J.L. (2012). Optimization of Programming Parameters in Children with the Advanced Bionics Cochlear Implant. *J Am Acad Audiol*. 2012 May ; 23(5): 302–312.

Boothroyd, A. (2007). Adult Aural Rehabilitation: What Is It and Does It Work? *Trends in Amplification*, Vol 11, No. 2. June p.63-71.

Boothroyd, A. (2000). Management of Hearing Loss in Children: No Simple Solutions. A Sound Foundation Through Early Amplification: Proceedings of an International Conference, Richard C. Seewald, Ed. Pages 1-12.

Buchman, C.A., Adunka, O., Zdanski, C. & Pillsbury, H.C.(2008). Hearing Loss in Children: The Otologist's Perspective. A Sound Foundation Through Early Amplification: Proceedings of an International Conference, Richard C. Seewald, Ed. pp 63-77.

Buckler, L., and Dawson, K.(2003).Relationship between Electrical Stapedial Reflex Thresholds and HiRes™ Program Settings: Potential Tool for Pediatric Cochlear-Implant Fitting. White Paper published by Advanced Bionics.

Byrd, S., Shuman, A.G., Kileny, S., Kileny, P. (2011). The Right Not to Hear: The Ethics of Parent Refusal of Hearing Rehabilitation. *The Laryngoscope*, 121:1800-1804.

Campbell, A.P., Dillon, M.T., Buchman, C.A. and Adunka, O.F. (2013). Hearing Preservation Cochlear Implantation. *Curr Otorhinolaryngol Rep*. 1:69-79.

Cochlear Implant NAD (National Association of the Deaf) Position Statement 1993

Cochlear Implants NAD Position Statement 2000

Contemporary Audiologic Management to Optimize Cochlear Implant Benefit. ASHA Leader
<http://www.asha.org/aud/articles/Contemporary-Audiologic-Management-to-Optimize-Cochlear-Implant-Benefit/>

Cullen, R.D., Fayad, J.N., Luxford, W.M. and Buchman, C.A. (2008). Revision Cochlear Implant Surgery in Children. *Otology & Neurotology* 29:214-220.

Cygnarowicz, T. (2004, Dec 14). Reflections on a Decade of Device Review at the FDA. The ASHA Leader, pp. 17-18.

Gifford, R.H., Shalloo, J.K., Peterson, M.A. (2008). Speech Recognition Materials and Ceiling Effects: Considerations for Cochlear Implant Programs. *Audiol Neurotol* 2008;13:193–205

Hang, A.X, Roush, P.A., Teagle, H.F.B., Zdanski, C., Pillsbury, H.C., Adunka, O.F. and Buchman, C.A. (2015). Is “No Response” on Diagnostic Auditory Brainstem Response Testing an Indication for Cochlear Implantation? *Ear & Hearing*, 2015 Jan;36(1):8-13

Harrison, R. V. (2002). Representing the Acoustic World within the Brain: Normal and Abnormal Development of Frequency Maps in the Auditory System. A Sound Foundation Through Early Amplification 2001: Proceedings of an International Conference, Richard C. Seewald & Judith S. Gravel Eds. Pages 3-24.

Holstad, B.A., Sonneveldt, V.G., Fears, B.T. Davidson, L.A., Aaron, R.J., Richter, M., Matusofsky, M., Brenner, C.A., Strube, M.J. & Skinner, M.W. (2009). Relation of Electrically Evoked Compound Action Potential Thresholds to Behavioral T- and C-Levels in Children with Cochlear Implants. *Ear and Hearing*, 30(1):115-127.

Incerti, P.V., Ching, T.Y.C. and Cowan, R. (2013). A Systematic Review of EAS: Device Fitting Ranges, Outcomes and Clinical Fitting Practices. *Trends in Amplification*, 17:3

Lee, C. (2012) Deafness and Cochlear Implants: A Deaf Scholar’s Perspective. *Journal of Child Neurology*, April 2012 <http://jcn.sagepub.com/content/early/2012/04/10/0883073812441248>

Minimum Speech Test Battery (MSTB) for Adult Cochlear Implant Users 2011
<http://www.auditorypotential.com/MSTBfiles/MSTBManual2011-06-20%20.pdf>

Mohr, P.E., Feldman, J.J., Dunbar, J.L., McConkey-Robbins, A., Niparko, J.K., Rittenhouse, R.K. and Skinner, M.W. (2000). The Societal Cost of Severe to Profound Hearing Loss in the United States. *Inter. J. Technology Assessment in Health Care*. 16 (4): 1120-1135.

Robbins, A. M. (2000). Rehabilitation after cochlear implantation: Principles & Practices, J.K. Niparko, et al Eds. P323-361.

Roush, P.A. and Seewalk, R.C. (2009). "Acoustic Amplification for Infants and Children: Selection, Fitting and Management." In Eisenburg, L.S. (Ed.) Clinical Management of Children with Cochlear Implants. San Diego: Plural Publishing. Pp 35-57.

Sennaroglu, L. et al. (2011). Auditory Brainstem Implantation in Children and Non NF2 PatientsL A Consensus Statement. *Otology & Neurology*, 32: 187-191.

Sharma, A., Nash, A.A. and Dorman, (2009). Cortical development, plasticity and re-organization in children with cochlear implants. *J Commun Disord.*:42(4): 272-279.

Teagle, H.F.B. (2010). Map Parameters. *First Years Audiology Interpretation and Hearing Technologies*. <http://firstyears.org/c3/u6/mapread.htm>

Teagle, HFB. (2012). Cochlear Implantation for Children: Opening Doors to Opportunity. *Journal of Child Neurology*, April 2012
<http://jcn.sagepub.com/content/early/2012/04/03/0883073812442590>

Teagle, H.F.B., and Eskridge, H. (2010). "Predictors of success for children with cochlear implants: The impact of individual differences." In Weiss, A. (Ed.) *Perspectives on Individual Differences Affecting Therapeutic Change in Communication Disorders*. New York: Psychology Press, pp 251-272.

Test Reference for Cochlear Implants: Candidacy and Post-Performance. (2010). Published by Advanced Bionics

The Auditory Learning Guide. FIRST YEARS (<http://firstyears.org/>) - Listening Spoken Language Development Intervention © Beth Walker, 2009.

Uhler and Gifford (2014). Current Trends in pediatric cochlear implant selection and follow up. *American Journal of Audiology*, Sept Vol 23, 309-325.

Weisleder, P. (2012). No Such Thing as a "Blind Culture". *Journal of Child Neurology*, April 2012. <http://jcn.sagepub.com/content/early/2012/04/10/0883073812441249>

Evidence for Craniofacial Services

The American Cleft Palate Association has a process, called CAT or "Commission on Approval of Teams". The purpose of the Commission on Approval of Teams (CAT) is to assure patients and families that the teams to which they are referred meet the Standards for Cleft Palate and Craniofacial Teams as set forth by the American Cleft Palate-Craniofacial Association and Cleft Palate Foundation. The craniofacial program has CAT approval through January 1, 2018.

Evidence for Early Intervention

Division for Early Childhood. (2014). DEC recommended practices in early intervention/early childhood special education 2014. <http://www.dec-sped.org/recommendedpractices>

Evidence for Genetic Counseling Services Interventions

Bennett, R.L., Motulsky, A.G., Bittles, A., Hudgins, L., Uhrich, S., Doyle, D.L., et al.
J Genet Couns, 11(2): 97-119 (2002).

Bennett, R.L., French, K.S., Resta, R.G., Doyle, D.L. J Genet Couns, 17(5): 424-433 (2008).

Berliner, J., Fay, A.M. Cummings, S., Burnett, B., Tillmanns, T. J Genet Couns (2013).
Dawn A. Laney, Robin L. Bennett, Virginia Clarke, Angela Fox, Robert J. Hopkin, Jack
Johnson, Erin O'Rourke, Katherine Sims, Gerald Walter. J Genet Couns, 22(5): 555-564 (2013).

Fabry Disease Practice Guidelines: Recommendations of the National Society of Genetic
Counselors

Finucane, B. , Abrams, L., Cronister, A., Archibald, A.D., Bennett, R.L., McConkie-Rosell, A.
J Genet Couns, 21(6): 752-760 (2012).

Genetic Counseling and Evaluation of Couples with Recurrent Miscarriage: Recommendations
of the National Society of Genetic Counselors - Reaffirmed April 2010

Genetic Counseling and Screening of Consanguineous Couples and their Offspring:
Recommendations of the National Society of Genetic Counselors - Reaffirmed 2009.

Genetic Counseling and Testing for FMR1 Gene Mutations: Practice Guidelines of the National
Society of Genetic Counselors

Heather Hampel, MS, LGC1, Robin L. Bennett, MS, LGC2, Adam Buchanan, MS, MPH3,
Rachel Pearlman, MS, LGC1, and Georgia L. Wiesner, MD4, Genet Med advance online
publication (2014).

Kathryn B. Sheets, Blythe G. Crissman, Cori D. Feist, Susan L. Sell, Lisa R. Johnson, Kelly C.
Donahue, Diane Masser-Frye, Gail S. Brookshire, Amanda M. Carre, Danielle LaGrave,
Campbell K. Brasington. J Genet Couns (2011).

K.L. Wilson, J.L. Czerqinski, J.M. Hoskovec, S.J. Noblin, C.M. Sullivan, A. Harbison, M.W.
Campion, K. Devary, P. Devers, C.N. Singletary. J Genet Couns, 22(1): 4-15 (2013).

Langfelder-Schwind, E., Karezeski, B., Strecker, M., Redman, J., E., Sugarman, Zaleski, C.,
Brown, T., Keiles, S., Powers, A., Ghate, S., Darrah, R. J Genet Couns (2013).

Laurino, M.Y., Bennett, R.L., Saraiya, D.S., Baumeister, L., Doyle D.L., Leppig, K., et al.
J Genet Couns, 14(3): 165-181 (2005).

Molecular Testing for Cystic Fibrosis Carrier Status Practice Guidelines: Recommendations of
the National Society of Genetic Counselors - Revised 2013

National Society of Genetic Counselors (NSGC) Practice Guidelines - In September 2015, the NSGC Practice Guidelines Committee began implementing its new guideline process for authors developing NSGC Evidence-Based Genetic Cancer Risk Assessment and Counseling: Recommendations of the National Society of Genetic Counselors

Neurofibromatosis Type 1 in Genetic Counseling Practice: Recommendations of the National Society of Genetic Counselors- Reaffirmed October 2009

Practice Guidelines for Communicating a Prenatal or Postnatal Diagnosis of Down Syndrome: Recommendations of the National Society of Genetic Counselors

Radtke, H.B., Sebold, C.D., Allison, C., Larsen Haidle, J., Schneider, G. J Genet Couns, 16(3): 387-407 (2007).

Referral Indications for Cancer Predisposition Assessment: Joint Practice Guidelines of the American College of Medical Genetics and the National Society of Genetic Counselors

Riley B., Culver J., Skrzynia, C., Senter L., Peters, J., Costalas J., Callif-Daley F., Grumet S., Hunt K., Nagy R., McKinnon W., Petrucelli N., Bennett R., Trepanier A., et al. J Genet Couns, 13(2): 83-114 (2011).

Risk Assessment and Genetic Counseling for Hereditary Breast and Ovarian Cancer: Recommendations of the National Society of Genetic Counselors

Standardized Human Pedigree Nomenclature: Update and Assessment of the Recommendations of the National Society of Genetic Counselors (*Undergoing review for reaffirmation.*)

Evidence for Healthy Families America Interventions

"Effectiveness of Home Visiting in Improving Child Health and Reducing Child Maltreatment." (Pediatrics, vol. 132, supplement 2, November 2013.) Subscription required.

Supplee, L., Paulsell, D., & Avellar, S. (2012). "What Works in Home Visiting Programs?" In What Works in Child Welfare, edited by P. Curtis and G. Alexander. Washington, DC: Child Welfare League of American Press, 39-61.

"Supporting Replication and Scale-Up of Evidence-Based Home Visiting Programs: Assessing the Implementation Knowledge Base." (American Journal of Public Health, vol. 104, no. 9, September 2014.) Subscription required.

Evidence for Nurse Family Partnership Interventions

"Effectiveness of Home Visiting in Improving Child Health and Reducing Child Maltreatment." (Pediatrics, vol. 132, supplement 2, November 2013.) Subscription required.

Supplee, L., Paulsell, D., & Avellar, S. (2012). "What Works in Home Visiting Programs?" In *What Works in Child Welfare*, edited by P. Curtis and G. Alexander. Washington, DC: Child Welfare League of American Press, 39-61.

"Supporting Replication and Scale-Up of Evidence-Based Home Visiting Programs: Assessing the Implementation Knowledge Base." (*American Journal of Public Health*, vol. 104, no. 9, September 2014.) Subscription required.

Evidence for Immunization Program Interventions

The U.S. Advisory Committee on Immunization Practices (ACIP) provides expert external advice and guidance to the Director of the Centers for Disease Control and Prevention (CDC) and the Secretary of the Department of Health and Human Services (HHS) on use of vaccines and related agents for control of vaccine-preventable disease in the U.S. civilian population.

The Assessment Feedback Incentives eXchange (AFIX) approach incorporates strategies proven reliable to improve providers' immunization service delivery and raise vaccination coverage levels. AFIX is widely supported as an effective and recommended strategy for improving immunization rates and practices in both public and private provider settings. AFIX is supported by the Task Force on Community Preventive Services, ACIP, and the federal Healthy People 2020's objectives and goals.

Evidence for Prevent Blindness

Evidence-Based Need for Preschool Vision Screening

Chou R, Dana T, Bougatsos C. Screening for Visual Impairment in Children Ages 1–5 Years: Systematic Review to Update the 2004 U.S. Preventive Services Task Force Recommendation. Evidence Synthesis No. 81. AHRQ Publication No. 11-05151-EF-1. Rockville, MD: Agency for Healthcare Research and Quality; 2011.)

Cotter SA, Cyert LA, Miller JM, Quinn GE. Vision Screening for Children 36 to <72 Months: Recommended Practices. *Optometry and Vision Science*, 2015;92(1):6-16.)

Best Practice Recommendations for Preschool Vision Screening

American Academy of Ophthalmology; American Association for Pediatric Ophthalmology and Strabismus. Vision Screening for Infants and Children.

American Academy of Pediatrics Instrument-Based Pediatric Vision Screening Policy Statement <http://pediatrics.aappublications.org/content/pediatrics/130/5/983.full.pdf>

Kemper AR, Crews JE, Strickland B, Saaddine JB. Vision Screening Among Children Aged <6 Years—Medical Expenditure Panel Survey, United States, 2009-2010. *MMWR*, 2014;63(2):43-46.

Evidence-Informed for Preschool Vision Screening

Donahue, S. J. (2002). Sensitivity of Photoscreening to Detect High Magnitude Amblyopgenic Factors . *Journal of American Academy of Pediatric Ophthalmology and Strabismus*, 86-9

National Health and Nutrition Examination Survey 2005-2008.

Qiu M, Wang SY, Singh K, Lin SC. Racial Disparities in Uncorrected and Undercorrected Refractive Error in the United States. *Investigative Ophthalmology & Visual Science*, 2014;55(10):6996-7005.

Evidence-Based National Recommendation for School Age Vision Screening

<http://www.healthypeople.gov/2020/topics-objectives/topic/vision/objectives>

Hagan JF, Shaw JS, Duncan PM, eds. *Bright Futures Guidelines for Health Supervision of Infants, Children and Adolescents*. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2008.

Evidence Base for Specific North Carolina Screening Program:

Outcomes of an Elementary School-Based Vision Screening Program in North Carolina, *The Journal of School Nursing* February 2012 28: 24-30, first published on October 4, 2011.

Best Practice Recommendation for Vision Screening Training

Vision Screening for Infants and Children; A joint statement of the American Association for Pediatric Ophthalmology and Strabismus and the American Academy of Ophthalmology.

Evidence for Newborn Metabolic Screening Follow Up Interventions

American Academy of Pediatrics, Newborn Screening Task Force, "Serving the Family from Birth to the Medical Home: Newborn Screening a Blueprint for the Future," *Pediatrics* 106, no. 2, supplement (2000):389-427.

American College of Medical Genetics Newborn Screening Expert Group, "Newborn Screening: Toward a Uniform Screening Panel and System: Executive Summary and Main Report," *Genetics in Medicine* 9, no. 5, supplement (2006):1S-252S.

B.T. van Maldegem et al., "Clinical, Biochemical, and Genetic Heterogeneity in Short-Chain Acyl-Coenzyme A Dehydrogenase Deficiency," *Journal of the American Medical Association* 296 (2006):943-95.

B. Wilcken et al., "Screening Newborns for Inborn Errors of Metabolism by Tandem Mass Spectrometry," *Journal of the American Medical Association* 289 (2003):2304-2312.

Centers for Disease Control, National Office of Public Health Genomics, "MCAD Deficiency Medium-chain acyl-CoA dehydrogenase," fact sheet; accessed September 11, 2007.

D. Alexander and P.C. van Dyck, "A Vision of the Future of Newborn Screening," *Pediatrics* 117, no. 5 (2006):S350-54.

D. Atkins, J. Siegel, and J. Slutsky, "Making Policy When the Evidence Is in Dispute," *Health Affairs* 24, no. 1 (2005):102-113.

D. Marsden, C. Larson, and H.L. Levy, "Newborn Screening for Metabolic Disorders," *Journal of Pediatrics* 148(2006):577-84.

J. Lomas et al., for the Canadian Health Services Research Foundation, "Conceptualizing and Combining Evidence for Health Systems Guidance," 2005, http://www.chsrf.ca/other_documents/evidence_e.php.

J.R. Botkin et al., "Newborn Screening Technology: Proceed With Caution," *Pediatrics* 117, no. 5 (2006):1793-99.

J.R. Botkin, "Research for Newborn Screening: Developing a National Framework," *Pediatrics* 116, no. 4 (2005):862-71.

K. Atkinson et al., "A Public Health Response to Emerging Technology: Expansion of the Massachusetts Newborn Screening Program," *Public Health Reports* 116(2001):122-31; S.D. Grosse and M. Gwinn, "Assisting States in Assessing Newborn Screening Options," *Public Health Reports* 116(2001):169-72.

N.D. Kohatsu et al., "Evidence-Based Public Health: An Evolving Concept," *American Journal of Preventive Medicine* 27, no. 5 (2004): 417-21.

R.R. Howell, "We Need Expanded Newborn Screening," *Pediatrics* 117, no. 5 (2006):1800-1805.

S.D. Grosse and C. Dezateux, "Newborn Screening for Inherited Metabolic Disease," *Lancet* 369 (2007):5-6.

S.D. Grosse et al., "From Public Health Emergency to Public Health Service: The Implications of Evolving Criteria for Newborn Screening Panels," *Pediatrics* 117 (2006):923-29.

S.J. Teach, K.A. Lillis, and M. Grossi, "Compliance with Penicillin Prophylaxis in Patients with Sickle Cell Disease," *Archives of Pediatric and Adolescent Medicine* 152 (1998):274-78;

"Update: Newborn Screening for Sickle Cell Disease: California, Illinois, and New York, 1998," *Morbidity and Mortality Weekly Report* 49, no. 32 (2000):729-31.

Evidence for Safe Sleep

<https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/AAP-Expands-Guidelines-for-Infant-Sleep-Safety-and-SIDS-Risk-Reduction.aspx>

<http://pediatrics.aappublications.org/content/129/4/630>

Evidence for Triple P Interventions

Prinz, R., & Sanders, M. (2007). Adopting a population-level approach to parenting and family support interventions. *Clinical Psychology Review*, 27, 739-749.

Prinz, R., Sanders, M., Shapiro, C., Whitaker, D., & Lutzker, J. (2009). Population-based prevention of child maltreatment: The US Triple P system population trial. *Prevention Science*, 10, 1-12.

Roberts, C., Mazzucchelli, T., Studman, L., & Sanders, M. R. (2006). Behavioral family intervention for children with developmental and behavioral problems. *Journal of Clinical Child and Adolescent Psychology*, 35, 180-193.

Sanders, M. R. (1999). Triple p-positive parenting program: Towards an empirically validated multilevel parenting and family support strategy for the prevention of behavioral and emotional problems in children. *Clinical Child and Family Psychology Review*, 2, 71-90.

Sanders, M. R. (2008). Triple P-Positive Parenting Program as a public health approach to strengthening parenting. *Journal of Family Psychology*, 22, 506-517.

Sanders, M. R., Cann, W., & Markie-Dadds, C. (2003). Why a universal population-level approach to the prevention of child abuse is essential. *Child Abuse Review*, 12, 145-154.

Sanders, M. R., Markie-Dadds, C., Tully, L., & Bor, W. (2000). The triple p-positive parenting program: A comparison of enhanced, standard, and self directed behavioral family intervention for parents of children with early onset conduct problems. *Journal of Consulting and Clinical Psychology*, 68, 624-640.

Sanders, M. R., Markie-Dadds, C., & Turner, K. M. T. (2003). Theoretical, scientific and clinical foundations of the triple p-positive parenting program: A population approach to the promotion of parenting competence. *Parenting Research and Practice Monograph*, 1, 1-21.

Sanders, M., & Murphy-Brennan, M. (2010). Creating conditions for success beyond the professional training environment. *Clinical Psychology: Science and Practice*, 17, 31-35.

Sanders, M. R., Prinz, R. J., & Shapiro, C. J. (2009). Predicting utilization of evidence-based parenting interventions with organizational, service-provider, and client variables. *Administration and Policy in Mental Health*, 36, 133-143.

Evidence for WIC Interventions

Does WIC work? The effects of WIC on pregnancy and birth outcomes. *Journal of Policy Analysis and Management*, 24(1):73-91; Joyce T, Gibson D, Colman S (2005).

Federal nutrition program changes and healthy food availability. *American Journal of Preventive Medicine*, 43(4):419-422.

Hillier A, McLaughlin J, Cannuscio CC, Chilton M, Krasny S, Karpyn A (2012). The impact of WIC food package changes on access to healthful food in two low-income urban neighborhoods. *Journal of Nutrition Education and Behavior*, 44(3):210-216.

Infant Mortality among Medicaid Newborns in Five States: The Effects of Prenatal WIC Participation. Alexandria, VA: Food and Nutrition Service, USDA.

Jackson MI (forthcoming). Early childhood WIC participation, cognitive development and academic achievement. *Social Science & Medicine*, accepted manuscript available online December 15, 2014.

Johnson B, Thorn B, McGill B, Suchman A, Mendelson M, Patlan KL, Freeman B, Gotlieb R, Connor P (2013). WIC Participant and Program Characteristics 2012.

Khanani I, Elam J, Hearn R, Jones C, Maseru N (2010). The impact of prenatal WIC participation on infant mortality and racial disparities. *American Journal of Public Health*, 100 (Supplement 1):S204-S209.

Ploeg MV, Breneman V, Farrigan T, Hamrick K, Hopkins D, Kaufman P, Lin BH, Tuckermanty E (2009). Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences. Report to Congress. Washington, DC: Economic Research Service, USDA.

Positive influence of the revised Special Supplemental Nutrition Program for Women, Infants, and Children food packages on access to healthy foods. *Journal of the Academy of Nutrition and Dietetics*, 112(6):850-858; Havens EK, Martin KS, Yan J, Dauser-Forrest D, Ferris AM (2012).

Reassessing the WIC effect: Evidence from the pregnancy nutrition surveillance system. *Journal of Policy Analysis and Management*, 27(2):277-303; Hoynes HW, Page ME, Stevens AH (2011).

The changing association between prenatal participation in WIC and birth outcomes in New York City. *Journal of Policy Analysis and Management*, 24(4):661-685; Joyce T, Racine A, Yunzal-Butler C (2008).

Thomas TN, Kolasa MS, Zhang F, Shefer AM (2014). Assessing immunization interventions in the women, infants, and children (WIC) program. *American Journal of Preventive Medicine*, 47(5):624-628.

Whaley SE, Ritchie LD, Spector P, Gomez J (2012). Revised WIC food package improves diets of WIC families. *Journal of Nutrition Education and Behavior*, 44(3):204-209.

Zenk SN, Odoms-Young A, Powell LM, Campbell RT, Block D, Chavez N, Krauss RC, Strode S, Armbruster J (2012). Fruit and vegetable availability and selection: federal food package revisions, 2009. *American Journal of Preventive Medicine*, 43(4):423-428.