HEALTHY FAMILIES VIRGINIA

FY 2011-2015
Statewide Evaluation Report

Prepared for:

Prevent Child Abuse, Virginia
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Healthy Families Virginia

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PREFACE

The Department of Psychology at the College of William & Mary and Huntington Associates, Ltd. produced this report at the request of Prevent Child Abuse Virginia (PCAV). The primary purpose of the report is to provide an objective appraisal and a set of recommendations allowing PCAV to evaluate the development and impact of the Healthy Families Virginia (HFV) Initiative. This is the sixteenth in a series of annual HFV evaluation reports (Galano & Huntington, 1999a – 2015) designed to provide accurate and useful information about the functioning of HFV sites, their growth and progress, and ways to improve the statewide initiative. The report spans the first sixteen years of the Healthy Families initiative in Virginia, with an emphasis on the five most recent fiscal years.

Part I begins with a brief presentation of the new and exciting field of behavioral epigenetics and its relationship to child maltreatment, brain development, and positive child development. Information about the gap between science and policy is presented and the need for new public policy is showcased. The report presents dramatic recent scientific evidence concerning the relationship between adverse childhood experiences (ACEs), including child abuse and neglect, and adult morbidity and mortality. An economic impact study (Gelles, Richard J., & Perlman, Staci, 2012) is summarized, followed by a description of the mission and chronology of the HFV statewide initiative. Part I concludes with a summary of legislative appropriations supporting the development and dissemination of Healthy Family programs across the Commonwealth.

Part II describes the growth of the HFV initiative between FY 1993 and FY 2015. This section provides an up-to-date statewide statistical profile for the **21 sites** out of HFV's 32 sites using the Program Information Management System (PIMS). These data describe ways the communities implement the Healthy Families model, including a description of the communities being served, funding sources, and collaborations with hospitals, medical clinics, and other agencies.

Part III describes the results of the outcome evaluation of all 32 current HFV sites. This summary is based on the outcomes of the 21 PIMS-using sites. In addition, evaluation results from 11 collaborating sites are examined. This report is organized around the framework of the Statewide Goals and Objectives (Appendix A) formally adopted by HFV in June 1999 and revised in 2006.

Part IV presents the evaluation findings in each of the five HFV evaluation domains: 1) child health, 2) maternal health, 3) child development, 4) parenting and the home environment, and 5) child abuse and neglect. The FY 2011-2015 results clearly document the initiative's impact on child maltreatment and other child health indicators.

Part V concludes the report by offering recommendations to improve the quality and coverage of HFV, the evaluation of this important statewide initiative, and the support offered to program managers and front-line staff through training and technical assistance.

PART I: INTRODUCTION

A. Developmental Epigenetics

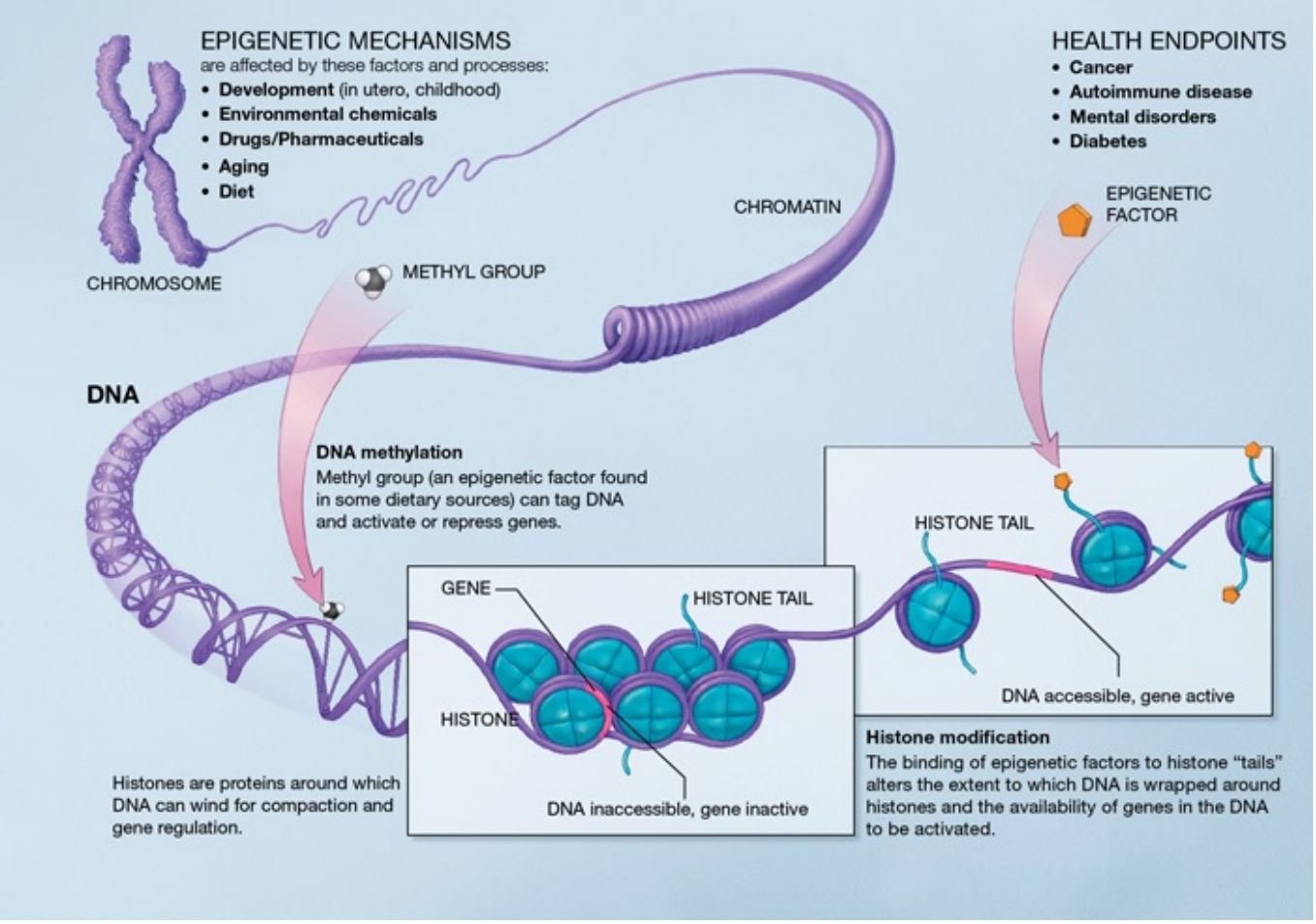
Epigenetics means, "above the genome." It is the study of how genes are turned on and off to alter their expression. The science of early child development has found it necessary to encompass the fields of neurobiology, genetics, medicine, and the social sciences, including psychology and social work. Research conducted over the past several decades has increased our understanding of human brain development, of how the brain and the body interact and how stress affects that interaction, and of the impact of experience from conception onwards. The first phase of life is one in which there are both great opportunities and great risks for setting trajectories across a lifetime.

This new area of research holds promise for understanding how early exposure to abusive and neglectful environments leads to the development of later health problems such as diabetes, heart disease, and cancer. For a long time people mistakenly thought that the genes inherited from parents preordained what a child might become. This popular misunderstanding led us to underappreciate how positive and negative environmental factors, including the caregiving relationship, impact the developing fetus and child. We now know that early experiences not only shape our brain connections but how our very genes are expressed. Our brain adapts its experiences. Some of these adaptations lead to healthy systems and others, to unhealthy systems. Thus, early life has a long reach forward. A rudimentary familiarity with epigenetics gives us a powerful tool for understanding these processes and shaping meaningful and responsive interventions and policies.

What is Epigenetics?

Epigenetics investigates the molecular biological mechanisms – including changes to histones (proteins around which DNA is wrapped), DNA methylation, and histone acetylation – that affect gene expression, as illustrated in Figure 1.

Figure 1. Epigenetic Mechanisms of Modification of Genetic Activity



"Epigenetic mechanisms" by National Institutes of Health - http://commonfund.nih.gov/epigenomics/figure.aspx. Licensed under Public Domain via Commons - https://commons.wikimedia.org/wiki/File:Epigenetic_mechanisms.jpg#/media/File:Epigenetic_mechanisms.jpg

One aspect, among many, of epigenetic changes is the influence on neuronal growth in the developing brain as well as modification of neurons' activity in the adult brain, resulting in structural and functional changes in organ systems that can have a marked influence on an organism's behavior. For example, early experiences with toxic stress impact one's future reactivity by altering the neural circuits regulating the neuroendocrine processes, including the Hypothalamo-Pituitary-Adrenal [HPA] stress axis and the sympathetic-adrenomedullary system, changes that co-occur within a network of other mediators that include elevated inflammatory sytokines and the response of the parasympathetic nervous

system. This dysregulation of the network of physiologic mediators of stress can lead to a chronic wear and tear effect on multiple organ systems, including the brain. These epigenetic modifications of DNA are not to the DNA sequence itself yet research has shown they are transmittable.

Experiences, positive or negative, seem to confer a "chemical signature" (the epigenome) on individuals' genome (gene blueprint) to authorize certain characteristics and behaviors while prohibiting others (also referred to as turning genes on or off) by attracting or repelling other chemicals that help the genes produce the proteins required for our brains and bodies need to develop. The chemical signatures can be temporary or permanent. And some genes can only be modified epigenetically during certain periods, defined as *critical periods*, while other genes are open to alterations across the lifespan.

Supportive environments and rich learning experiences during early childhood generate positive epigenetic signatures that activate genetic potential, establishing a foundation for more effective learning capacities in the future. Consistent, repeated, and positive "serve and return" interactions with sensitive, caring adults is one such rich – and critical – learning experience as well as one of the strongest predictors of enhanced cognitive skills including language, learning, and memory. The epigenome explains why and how genetically identical twins can exhibit different behaviors, skills, health, and achievements. It is the modulating link between our external environments and experiences and the genes that guide our development.

Behavioral Epigenetics

Behavioral epigenetics is an emerging subfield of epigenetics which studies epigenetics' role in shaping animal, including human, behavior and seeks to understand how nurture (one's experiences and environments) shapes nature (biological heredity), thereby producing the differences observed in individuals' behavior, cognition, personality, and mental health.

Early experiences can alter gene expression and affect long-term development. The experiences children have early in life and the environments in which they have them, including relational contexts, shape infants' and children's developing brain architecture and strongly impact whether they grow up to be healthy, productive members of society. Our genes consist of our genetic "hardware" (our genome or inherited gene sequence) and our epigenome, the genome's "operating system" which determines which functions our genetic "hardware" does and does not perform. Certain experiences can result in temporary epigenetic chemical modifications but others cause enduring epigenetic changes in hundreds of genes that researchers have identified thus far (National Scientific Council on the Developing Child, 2007).

Experiences that alter the epigenome early in development, i.e., during the period of fetal and/or infant development when the specialized cells of organs such as the brain, heart, or kidneys are first developing, can have an especially powerful impact on an individual's physical and mental health, changing their trajectories for life. For example, if a young child or a pregnant mother experiences serious adversity (such as chronic neglect, abuse, and/or exposure to violence) in the absence of protective relationships, persistent and damaging epigenetic changes causing prolonged stress responses result.

It is important to remember, though, that the converse also holds true, i.e., a "protective" environment may offset genetic influences. For example, even though a child may be genetically

predisposed to show antisocial behavior, he/she may not display this trait unless subjected to, say, childhood abuse or neglect. Similarly, a person with a genetic risk for depression may not display depressive symptoms in the presence of protective environmental factors such as close supportive relationships and low stress levels, which buffer against or reduce the impact of their genetic factors (Tseng, A., Barry, K., & Labiberte, T., 2015).

Some epigenetic modifications are long-lasting, but not necessarily permanent. The right combination of nurturing and treatment has been shown to reverse epigenetic changes that affect stress reactions and make children more prone to psychiatric and other illnesses according to Dr. Joan Kaufman, trauma and resilience expert at Yale University School of Medicine (Miller, 2013).

Transgenerational effects

Recent research on genetics, gene control, and gene-environment interaction clearly reveals that epigenetic changes can be transmitted vertically (transgenerationally) without altering DNA sequences and result not only from post-natal experiences but even from influences in the prenatal environment. For example, Radtke et al. (2011) showed that methylation of the glucocorticoid receptor gene occurred in fetuses when mothers experience intimate partner violence during pregnancy. These changes were not found if the violence occurred before or after the pregnancy. This methylation has tremendous implications as it plays a key role in psychosocial behavior and persists until at least age 19 (and likely longer), altering the individual's reactivity to environmental factors associated with susceptibility to mental health disorders. Thus science has proven something we have long intuited: some children are born predisposed to be less resilient, physically and mentally, than others. Numerous studies have also found connections between highly stressful experiences in children and increased risk for later mental illnesses, including generalized anxiety disorder and major depressive disorder. Typical stress responses

over a lifetime can also result in increased risk for [a host of] physical ailments, such as asthma, hypertension, heart disease, and diabetes." (NSCDC Working Paper 10, pages 3-4).

Discovery of the transgenerational transmission of epigenetic changes means that our experiences can affect not only us, but also our children and our children's children. There is considerable evidence that the children of Holocaust survivors demonstrate an increased susceptibility to post traumatic stress disorder (PTSD)(Kellerman, 2000) and that it is related to decreased cortisol levels in both generations (Yehuda, et al. 2000).

Another researcher, curious to learn if stress exposure during pregnancy has any effect on women's offspring, induced stress in a generation of mice. The next generation did, in fact, have altered stress responses and evidenced behavior that looked like anxiety. The induced stress response had switched on a gene and the descendants had inherited the altered gene (Meany, M.J. 2001).

Similarly, in a study of 200 mothers who were pregnant during the September 11, 2001 attacks on America and subsequently developed post-traumatic stress in response, half were found to have low cortisol levels and so did their babies. (Note: Individuals with low cortisol levels have been found to be more vulnerable to developing post-traumatic stress.) This effect was found only in mothers who were in their last trimester when 9/11 occurred, and the impact on their baby's cortisol level was also greatest at this time. Researchers are curious to learn if eventually the same stress effects will be found in the second generation (the grandchildren) of these 9/11 mothers, providing even more evidence that "genetic memories" can, and indeed do, travel through generations (Brand, Engel, Canfield, and Yehuda, 2006). Further evidence of this sort of transmission was found in another study in which the life expectancy of the second generation (grandchildren) was found to be directly impacted by their grandparents having lived in a time of famine or plenty (Pembry, Saffery, & Bygren, 2014).

Effects of childhood stress on health across the lifespan

Stress is an inevitable part of life and even necessary for survival as it helps us develop the skills we need to cope with and adapt to the new and potentially threatening situations we encounter throughout life. Learning how to respond to stress in a physically and emotionally healthy manner is vital to one's well-being and effectiveness.

The National Scientific Council on the Developing Child has identified three different types of stress. The Center on the Developing Child at Harvard University asserts,"The **positive stress response** is a normal part of healthy development and refers to the transient increases in heart rate and hormonal levels that occur [for example] when a child is first left with a new caregiver or is given a shot at the doctor's office." Thus, **positive stress** refers to various experiences that are short-lived, occur in the context of relationship with a supportive, caring adult(s), and result in only minor and temporary changes in heart rate and hormonal levels. Children can, and need to, learn to manage positive stress. Such coping is an important part of healthy child development.

The "**tolerable stress response** refers to significant activation of the body's 'alert systems,' as might occur after the loss of a loved one or a natural disaster, *in the presence of adult support."* If the child is cared for by at least one responsive adult who provides a sense of security and protection, the stress response doesn't last for an extended period of time, and the child's brain and other organs can recover from potentially damaging effects." Thus, **tolerable stress** refers to adverse experiences that are more intense but still short-lived and occur in the presence of a caring and responsive adult. Other examples include parental separation and/or divorce, moving and changing schools, and/or being exposed to an accident. Through the sense of security and protection a caring adult provides, the child's stress response eventually dissipates and their brain and other organs have the opportunity to recover from its potentially damaging effects. However, if a child does not have adequate supports, these same stress levels are likely to become more toxic and lead to negative health effects.

The "**toxic stress response** is the unrelenting activation of stress response systems in the absence of adequate support protection from adults. It can be precipitated by serious adversity, such as extreme poverty, frequent neglect, physical or emotional abuse, or maternal substance abuse and can lead to stress-related diseases or deficits in learning and behavior." Thus **toxic stress** refers to adverse experiences that must be endured over a long period of time, sometimes even years, in the absence of support or protection from a caring adult(s). Child maltreatment is clearly one form of toxic stress. Children are typically unable to handle such stress on their own and, therefore, the stress response will be activated for a long period of time, leading to permanent changes in the brain. High levels of stress hormones, including cortisol, damage the hippocampus, result in smaller brains and fewer brain circuits, and significantly impair learning and memory, thereby constricting one's ability to respond creatively and intentionally – changes which can accrue exponentially over time. An unmitigated toxic stress response also activates the HPA stress axis, which damages the immune system and leaves the person vulnerable to infections and a variety of chronic health problems. We are built for connection to others. Children need caring adults to help the body's stress response return to normal levels and prevent negative outcomes.

Long-term health

Understanding how early experiences and environmental influences can leave a lasting mark on genetic predispositions through physical and chemical changes in the brain and other bodily systems has resulted in a revolutionary shift in our perspective on adult diseases. We now see that they are actually developmental disorders that began early in life and that the enduring and persistent disparities in health, learning, and behavior found to be associated with poverty, discrimination, and/or maltreatment thus would actually best be addressed by reducing toxic stress during childhood.

This awareness logically suggests the development and implementation of science-based strategies to reduce or prevent toxic stress in early childhood and engaging professionals such as pediatricians (who are on the front line with parents, infants, and children in a universal, non-stigmatized, and medically authoritative role) to help raise awareness of the need for such a preventative approach. And the need is great. A recent technical report by the American Academy of Pediatrics, which reviewed 58 years of published studies, characterizes the racial and ethnic disparities in children's health to be "extensive, pervasive, persistent, and, in many cases, worsening." In 2012, they issued a policy statement calling for a "leadership role for the entire pediatric community … to catalyze fundamental change in early childhood policy and services" by "leveraging science to inform the development of innovative strategies to reduce the precipitants of toxic stress in young children and to mitigate their negative effects on the course of development and health across the life span" (National Scientific Council on the Developing Child, 2014).

Interventions to reduce adverse experiences

New Directions in Child Abuse and Neglect Research (Institute of Medicine and National Research Council 2014) identifies interventions that show evidence for reducing child abuse and neglect reports, as well as positive impacts on risks and protective factors that are correlated with child abuse and neglect, including parent characteristics, child characteristics, and the parent-child relationship. These interventions are home visiting, parenting education, universal antiviolence education programs, public education and awareness, professional practice reforms, and community prevention.

Providing home-based interventions at the time a woman becomes pregnant or gives birth is one of the most widely disseminated child abuse and neglect prevention strategies (Daro, 2010). Home visiting continues to demonstrate positive impacts on reducing child abuse and neglect and the use of

harsh punishment, parental capacity, positive parenting practices, and healthy child development. Today there are a number of strong, evidence-based models available for implementation and study.

For example, "Findings of a 15-year follow-up study of families enrolled in the Nurse Family Partnership's randomized clinical trials support that program's long-term positive impacts on both parents (Eckenrode et al, 2010) and children (Kitzman et al., 2010; Olds, 2010). In contrast to control families, mothers who received the program were involved in fewer substantiated reports for maltreatment, abuse, and neglect, and children were less likely to report running away or to have contacts with the juvenile justice system. These and similar gains were most concentrated among families with the fewest material and emotional resources at the time they enrolled in the program." (IOM (Institute of Medicine) and NRC (National Research Council) 2014)

The science-policy gap

The fact that the genome is vulnerable to adverse childhood experiences and toxic stress underscores the policy path we need to project during the earliest years when brain development is most rapid. Yet our current child welfare and maternal and child health policies are not responsive to this knowledge and some policies could even be deemed counterproductive (National Scientific Council on the Developing Child, 2010).

Child Welfare: Child protective services have been too organized around reacting after the fact, with the majority of the resources targeted at dealing with founding and founded cases of abuse and neglect. Too few resources are devoted to facilitating nurturing, positive, and stable relationships in order to prevent child abuse and neglect in the first place, although in Virginia, the reorganization of the system under "Differential Response" provides more resources to work with the families early to prevent long-term exposure to abusive and neglectful environments through counseling and training parents.

Mandated maternal employment and public assistance: Many state legislatures require mothers to work in order to receive public assistance. These policies require the mother to be out of the home at the same time that the developing architecture of their child's brain is so vulnerable to parent (or other caretaker) -child interactions. Concurrently there is also a significant lack of affordable quality childcare services during this critical time period.

Affordable and accessible healthcare for all pregnant mothers and newborns is crucial, yet not always available, nor are developmental services that detect problems at the earliest possible point so that appropriate interventions can occur when they will be the most effective.

Support for new parents: The United States is one of the few developed nations that does not provide some amount of paid family leave to all new parents after the birth or adoption of a baby. Paid family leave provides parents the opportunity to develop the critical supportive relationships with their children necessary to promote positive epigenetic changes. Thus paid family leave or similar policies bring positive benefits to both the family and their community which generate long-term, high returns for society.

The need for new public policy

The National Scientific Council on the Developing Child puts it best in their assertion that "Effective policies and programs that address conditions associated with economic hardship with or without other sources of adversity – especially those targeted to help families during pregnancy – can not only improve birth outcomes and short-term conditions for young children but should also be viewed as investments in building a stronger foundation for healthy communities and future prosperity across generations. When policy-makers support positive environments for pregnant women and very young

children, they reduce the risk of intergenerational transfer of negative epigenetic changes that can lead to impaired health, diminished learning capacity, and poor parenting of the next generation."

We need public policies that help children reach their full potential through ensuring appropriate experiences in their earliest years and reducing sources of toxic stress. Such policies are also those most likely to generate long-term benefits for all of us, such as healthier communities and a more prosperous society.

Accordingly the Council advocates creating policies that:

- "Alleviate sources of significant adversity as early as possible in the lives of children who live in threatening environments;
- Serve as safeguards to prevent pregnant women's, infants, and toddler's exposure to environmental toxins (such as lead and mercury), prescription drugs, alcohol, and illicit substances;
- Ensure access for *all* pregnant women, infants, and toddlers to appropriate, affordable, high-quality health services and nutritional support;
- Support positive environments for pregnant women and very young children; and
- Provide for multi-faceted educational campaigns about epigenetics to bring this crucial information to a wide range of important audiences, including health professionals, judges and lawyers, educators, caregivers, families, and the general public."

Healthy Families Virginia, a voluntary home visiting program that serves some of the Commonwealth's most vulnerable families, works in all of these domains. However, it typically only reaches 10 to 20 percent of the populations participating sites have identified as being in greatest need of their services (i.e., high risk families).

B. Cascading Consequences

Newborns are almost fully dependent on parents to help them regulate their physiology and behavior. Parents, under optimal conditions, buffer young children from stress. Over time, the children develop the capacity for self-regulation and enter school behaviorally and physiologically regulated, as well as prepared for the tasks of learning to read, write, and interact with peers. Some parents cannot fulfill this role, creating challenging home environments that exceed their children's capacity to cope and result in short- and long-term consequences, including:

- Emotional and behavioral dysregulation, school failure, and antisocial behaviors (Olds et al., 2007).
- Physical, mental, and emotional problems such as sleep disturbances, panic disorder, posttraumatic stress disorder, and attention deficit hyperactivity disorder (Cicchetti, 2007; Cicchetti & Valentino, 2006; U.S. Department of Health and Human Services, 2001a; Watts-English, Forston, Gibler, Hooper, & De Bellis, 2006).
- One of the more extreme forms of physical abuse is Shaken Baby Syndrome. Approximately 1,400 children experience severe or fatal head trauma as a result of this form of abuse each year. Nonfatal consequences of abusive head trauma include varying degrees of visual impairment (e.g. blindness), motor impairment (e.g. cerebral palsy), and cognitive impairments (National Center on Shaken Baby Syndrome, 2011).

Problems directly attributable to child abuse and neglect and other ACEs cross multiple service sector boundaries and require an integrated, holistic, and long-range strategy to affect change. Reducing ACEs by taking a proactive preventative approach (i.e., increasing families' protective factors) has the potential to decrease the prevalence of many health, disability, education, and employment problems,

resulting in significant cost savings to the government and the public sector (Anda & Brown, 2010). PCAV has developed such a community partnership model with the capacity to integrate comprehensive child and family services within multiple service sectors and to ensure sustainability of the initiative through the realized cost savings.

In recent years, the concept of resilience has emerged to help us understand how a "good outcome" occurs despite conditions of high-risk or abuse and neglect. Researchers have begun to identify factors that support resilience at the levels of the individual, family, and social environment, such as the capacity for relationships or external attribution of blame at the individual level, a safe home environment or changes in family structure at the family level, or supportive relationships with non-family members or clergy at the societal level (Afifi & Macmillan, 2011).

C. Costs of Childhood Maltreatment

Most people are aware of or can imagine the pain and suffering borne by a child who has been abused or neglected. However, not everyone may not be aware of the financial burden our communities bear from child abuse and neglect. A report from Prevent Child Abuse America (Gelles and Pearlman, 2012), estimated that child abuse and neglect effects over one million children every year and costs our nation $220 million **every day**. The total direct and indirect costs of U.S. child abuse and neglect in 2012 were estimated at $80 billion annually, or **$63,871 per child**. This calculation is based on the costs associated with child maltreatment investigations, foster care, medical and mental health treatment, as well as the annualized future costs for special education, juvenile and adult crime, chronic health problems, and other costs across the lifespan. Taxpayers pay these costs for every case of child abuse and neglect we fail to prevent.

The estimated average lifetime cost per victim of nonfatal child maltreatment is **$210,012** in 2012 U.S. dollars, which reflects $32,648 in childhood healthcare costs; $10,530 in adult medical costs; $6,747 in criminal justice4 costs; and $7,999 in special education costs. The estimated average lifetime cost per death is $1,272,900, which is $14,100 in medical costs and $1,258,800 in productivity losses. Therefore, the authors calculate that the lifetime total economic burden resulting from new cases of fatal and nonfatal child maltreatment in the United States in 2008 is $124 billion. You can think of the $210,012 figure as a mortgage that you will have to pay off over your lifetime. Home visiting can help prevent such an exorbitant expenditure of human captial and public dollars.

Perhaps the most authoritative analysis of the preventative potential of home visiting was the 2003 National Review of the Effectiveness of Early Childhood Home Visitation for Preventing Violence conducted by the Task Force on Community Preventive Services (Hahn, Bilukha, Crosby, Fullilove, Liberman, Moscicki...& Briss, 2003). Compared with control families, families that received home visiting experienced approximately 40% less child abuse and neglect. Due to this potential for prevention, the Task Force recommended implementation of early childhood visitation nationally.

HFV is preventing cases of child maltreatment. Galano and Huntington (2012) conducted 12,500 searches of the Child Protective Services (CPS) Central Registry between 2007 and 2011. Using a scientifically derived 4.7% incidence estimate[1], we predict that there would have been 587 founded cases of child maltreatment among Healthy Families participants. The actual number of cases between 2007 and 2011 was 137, strongly suggesting that **HFV prevented roughly 450 founded cases of abuse and neglect.**

[1] The 4.7% comparison standard was based on a special investigation of the number of maltreated children and rates of child abuse and neglect by family structure, common income, and gender. The study was conducted by the *Federal Interagency Forum on Child and Family Studies* (1997), using the Third National Incidence Study of Child Abuse and Neglect.

One way to understand these findings is to examine the impact of HFV for a single year. The cost of serving a family is $3,600 for a single year. Across each of the past 5 years, the average number of cases prevented was 90. This indicates that the annual costs of child abuse and neglect were reduced by $5,748,390 (90 x $63,871) and that the total lifetime cost was reduced by $18,901,080 (90 x $210,012). At a time when healthcare spending accounts for 18% of Virginia's economy and is projected to increase because of preventable conditions, we cannot afford to ignore the value of prevention programs such as HFV. It is hard to imagine a better return on investment.

D. Healthy Families America

In 1992, Prevent Child Abuse America (PCAA) launched the Healthy Families America (HFA) initiative to promote the development of home-visitation programs based on the Hawaii Healthy Start model (Mitchel & Cohn-Donnelly, 1993). Collaborating with Ronald McDonald Children's Charities and the Hawaii Family Stress Center, they envisioned supporting the most overwhelmed families using the promising Hawaii model. HFA programs expanded from 25 to over 600 sites across the country (Forty states, Washington, DC, all five US Territories, and Canada). A national survey conducted in 2003 indicated that over 71,000 families were assessed during that year and approximately 47,500 families were enrolled in HFA programs nationwide (Prevent Child Abuse America, 2005).

Three overarching goals define HFA's nationwide effort: promoting positive parenting, improving child health and development, and preventing child abuse and neglect. HFA helps parents provide a safe and supportive home environment, gain a better understanding of their child's development, obtain access to health care and other supportive services, use positive forms of discipline, and nurture the bond with their child, thereby reducing the risk factors linked to child maltreatment (PCA America, 2002). The program also places emphasis on creating community support systems to assist parents in caring for their newborns.

HFA continues to expand as more communities recognize the importance of providing parents with the information and skill building they need to raise their children in a healthy, nurturing environment. HFA is reducing child maltreatment and having a positive impact on families across the country (PCA America, 2002). In 2009, the Rand Corporation awarded Healthy Families New York the highest designation, that of a "Program that Works", indicating that the program has proven its effectiveness to improve outcomes for children and families.

E. Healthy Families Virginia

1. Mission and Statewide Evaluation Goals

PCAV serves as the Central Administration for the HFV State System. PCAV supports the expansion of the HFA initiative throughout the Commonwealth by providing individualized technical assistance to community leaders interested in creating a Healthy Families program in their community. PCAV helps forge new partnerships in communities, identifies potential funding sources, and educates communities about Healthy Families. PCAV has created a network of site directors, facilitated the development of statewide goals and objectives, developed a statewide technical assistance/quality assurance system, created and provided comprehensive staff training, and convened a legislative advisory group.

In FY 1999, HFV, working with the directors and managers of Healthy Families programs around the state, developed a standard outcome evaluation plan. The plan delineates domains expected to show effects, a standard set of goals in each domain along with specific outcome objectives for each goal, and recommended benchmarks or measurement instruments for each objective. This plan has guided statewide evaluations and improved the comparability of information across sites. The domains

included in the HFV Statewide Evaluation plan are Maternal and Child Health, Child Development, Parent-Child Interaction and the Home Environment, and Child Abuse and Neglect.

HFV contracts with evaluators at the College of William and Mary and Huntington Associates, Ltd. Each Healthy Families site participating in the statewide evaluation project is assessed a fee based on their number of home visitors. For this fee, each site receives a copy of PIMS (developed by PCAA) and training in its use, an additional Virginia Supplemental Data System (SDS) for collection of the selected measurement instruments not included in PIMS, forms for data collection, and technical support in the use of PIMS and SDS. In addition, each site receives an annual evaluation report based on its PIMS and SDS data documenting its progress in attaining the goals and objectives set forth in the Statewide Evaluation Plan. As of 2005, each PIMS site also receives a one-page "Report Card" summarizing its results for that year.

2. Legislative Appropriations

The Virginia General Assembly has been a critical source of funding and support for the Healthy Families Virginia initiative. The initial state funds appropriated for the 1992-1994 biennium resulted from a budget amendment of $150,000 annually for the city of Hampton to develop a Healthy Families demonstration site. The following chart illustrates growth in state funding for sites and for HFV.

Since 1992, several legislators have served as patrons of budget amendments to support Healthy Families. While the amount of state funds increased significantly until 2010, sites also secured funding from a wide variety of sources including federal and local funding, corporate donations, and private foundations. In 2006, the total funds spent statewide exceeded $18,000,000 and funds appropriated by the General Assembly comprised 30% of the total statewide funding.

Table 2 provides a chronological view of the development of the 38 Healthy Families Virginia

sites between 1991 and 2004. Since then, no new sites have developed. Sadly, in FY 2010 and 2011, HFV experienced more than $2 million in funding cuts. HFV went from a budget of $5,472,779 to $3,235,501 four years (FY2009 -FY 2013). Six Healthy Families programs in Halifax, the Eastern Shore, Chesapeake, Norfolk, Portsmouth, and Piedmont, were not able to keep their doors open after the last budget cuts. Some of these programs served the urban poor and others served rural communities, i.e., communities with fewer resources and families with greater risk. Thus, these budget cuts take the highest toll on communities that are at greatest risk and on those families that are most vulnerable. During the last 2 years $1.5 million was restored (FY 2014 and FY 2015) to the budget, which leaves an additional $.5 million deficit to restore funding to its previous level. As the result of a Home Visiting Expansion Plan created by the Virginia Home Visiting Consortium and submitted to the Governor, an additional $4,300,000 has been added each year for the next biennium (FY2017 & FY2018) totaling $9,035,501 per year.

Table 1. Legislative Appropriations for HFV: 1993 - 2013

FISCAL YEAR	STATE AWARD	CITY OF HAMPTON	RECIPIENTS
1993		$150,000	1 SITE
1994		$150,000	1 SITE
1995		$150,000	1 SITE
1996		$150,000	1 SITE
1997	$150,000	$150,000	5 SITES & HFV
1998	$625,000	$150,000	14 SITES & HFV
1999	$1,277,400	$150,000	27 SITES & HFV
2000	$2,949,800	$150,000	31 SITES & HFV
2001	$3,549,800	$150,000	31 SITES & HFV
2002	$3,549,800	$150,000	36 SITES & HFV
2003	$4,499,800	$225,000	36 SITES & HFV
2004	$4,499,800	$225,000	36 SITES & HFV
2005	$4,499,800	$225,000	36 SITES & HFV
2006	$4,999,800	$225,000	36 SITES & HFV
2007	$5,472,779	$225,000	38 SITES & HFV
2008	$5,472,779	$225,000	38 SITES & HFV
2009	$5,472,779	$225,000	38 SITES & HFV
2010	$4,583452	$225,000	36 SITES & HFV
2011	$3,425,501	$225,000	33 SITES & HFV
2012	$3,235,501	$225,000	33 SITES & HFV
2013	$3,785,501	$225,000	32 SITES & HFV
2014	$4,335,501	$225,000	32 SITES & HFV
2015	$4,835,501	$225,000	32 SITES & HFV*

**this information provided by DSS based on available records*

Table 2. Chronology of Healthy Families Virginia Site Development

Year	Location	Cumulative # of Sites*
1991	Fairfax	1
1992	Hampton West Piedmont	3
1993	Alexandria	4
1994	Culpeper	5
1995	Prince William	6
1996	Chesterfield Danville Richmond Henrico	10
1997	Arlington Central Virginia Newport News ~~Piedmont~~ South Hampton Roads* (~~Portsmouth, Chesapeake, Norfolk~~, and Suffolk/Isle of Wight)	18
1998	Charles City/New Kent Loudon Northern Shenandoah Orange Rappahannock Area Shenandoah County	24

Table 2. Chronology of Healthy Families Virginia Site Development (Continued)

1999	~~Accomack/Northampton~~* Blue Ridge Charlottesville/Albemarle HoPewell/Prince George Petersburg Three Rivers Virginia Beach	31
2000	Fauquier County Madison Rappahannock Southwest Virginia Warren County	36
2001	Page County	37
2004	~~Halifax/South Boston~~*	38

* Over the last 4 fiscal years, budget cuts to Healthy Families Virginia caused 6 communities to terminate their programs despite the continuing need for services. This table does not include the regional military site which covers 5 Navy bases in the Hampton Roads area. **Additionally, ninety percent (90%) of sites have had to reduce service capacity.**

3. Evaluation Mandate

In appropriating funds to support the HFV initiative, the Virginia General Assembly included specific evaluation requirements. The specific instructions were supplied to the VDSS through budget language. Beginning in 1997-1998 with $25,000, the General Assembly has provided support for evaluation. By 2006, the amount of funding for evaluation had increased to $77,979.

The budget language expressed the expectation that HFV would coordinate the development of a statewide evaluation system and develop an annual report evaluating the success of the HFV initiative for the General Assembly.

PART II: A STATEWIDE STATISTICAL PROFILE OF THE HEALTHY FAMILIES VIRGINIA INITIATIVE

As of FY 2015, 21 sites have adopted the PIMS data management system developed by HFA, and all of these sites participated in the HFV statewide evaluation project for data analysis and reporting, provided by a contract with the College of William and Mary and Huntington Associates, Ltd. ***The remaining 11 sites*** **have created separate data collection systems and either pay for independent analysis or conduct their own evaluation. Data contributed by those sites will be included in later sections.**

This section provides an up-to-date statistical profile of the 21 PIMS-using HFV sites that participated in the statewide PIMS evaluation during FY 2015. Although this summary does not reflect all of the programs operating and all of the participants receiving services through the HFV initiative, it does present information that should prove very helpful in understanding the general characteristics and organization of individual programs in various communities across the Commonwealth. Aggregated summaries are presented describing the communities served, the participant demographics, the staff characteristics, and the sources of funding, as well as collaborating relationships developed to support each Healthy Families program.

These 21 HFV programs have operated for an average of **17** years, but considerable variability exists across sites. In this group of sites, the longest operating Healthy Families program began enrolling participants in 1992, and the most recently established site began enrolling participants in 2004. *Table 3 provides a description of the characteristics of communities served by these sites, including population, geographic area, ethnic composition, and risk factors.* The table also presents information on four community characteristics that research has shown to predict the need for home-visiting services. These benchmarks of community well-being indicate that the risk for families and the concurrent need for home-visiting services have not abated.

These 21 programs serve 63 Virginia localities. Most Healthy Families programs (62%) serve multiple localities, while approximately 38% of HFV programs serve a single county (19%) or city (19%). Of these localities, rural communities represented 41.3% of the total communities served, and 19% of the communities were described as urban. Another six percent were classified as suburban. The remaining communities (33%) served by HFV programs were described as some combination of urban, suburban, and/or rural.

Healthy Families programs also serve a wide range of communities in terms of geographical area and population size. The smallest community served was 4.0 sq. miles, and the largest was 2,795. The average catchment served was 870 sq. miles. The smallest community population was 32,885 people, and the largest was 925,000. The 21 programs served communities with an average population of 203,270. PIMS only collects information about which ethnic groups account for more than 25% of a community's population. It does not provide specific information about the proportion of various ethnic groups in the target communities. In 90% **(all but two)** of the communities served by these 21 programs, whites accounted for more than 25% of the population. Approximately 41% of the communities served consisted of at least 25% African-Americans, and two communities reported that Hispanic families made up at least 25% of the population.

Table 3 also presents critical information regarding the social characteristics of the communities served by Healthy Families programs. The community characteristics presented include the percentage of children under five living below the poverty level, the percentage of single-parent households, the percentage of households receiving TANF, and the number of annual births. Research has shown that these four characteristics predict negative health and developmental outcomes for children and also predict the need for intensive home-visiting services. On average, 18.6% of children under five live below the poverty level, with the lowest percentage reported at two percent and the highest at 85%. The

average percentage of single-parent households was 17.8% and ranged from three percent to 47%. The average percentage of TANF households was 10.9% and ranged from a low of one percent to a high of 50%. In FY 2012, the average annual number of births per locality was 1,184. The lowest number was 15, and the highest number of births was 6,400.

Table 3. Healthy Families Virginia Target Communities Descriptive Information

Number of Sites	21	
Number of Communities Served	63	
Scope	**N**	**%**
Single City	4	19
Multiple Cities	1	4.8
Single County	4	19
Multiple Counties	3	14.3
Other Scope	9	42.9
Type of Community		
Urban	12	19
Suburban	4	6.3
Rural	26	41.3
Mixed Urban and Suburban	4	6.3
Mixed Urban and Rural	1	1.6
Mixed Suburban and Rural	9	14.3
Mixed Urban, Suburban, and Rural	7	11.1
Geographic Area Served		
Smallest (Square Miles)	4	
Largest (Square Miles)	2,795	
Average (Square Miles)	869.7	
Population of Community		
Smallest Community	32,885	
Largest Community	925,000	
Average Population of Community	203,270	
Ethnic Composition (Number of communities with ethnic groups accounting for more than 25% of a community's population.)		
White	57	90.5
African American, Non-Hispanic	26	41.3
Hispanic	2	3.2

Table 3. Healthy Families Target Communities Descriptive Information (Continued)

Community Characteristics	Min	Max	Avg
% Children Under 5 Living Below the Poverty Level	2	85	18.6
% of Single Parent Households	3	47	17.8
% of Households Receiving TANF	1	50	10.9
Average Annual Births	15	6,400	1,187.9

Table 4 presents information describing the program structure of Healthy Families sites and the types of host or lead agencies that house the program. It also provides information about the programs' target populations. Thirteen programs (62%) reported serving more than one community. Programs may find it desirable, as they grow or as they try to serve more participants living in rural areas, to add staff at multiple sites in order to increase efficiency and decrease barriers to service. Twenty of the 21 participating programs (95%) report they are housed in a host agency rather than organized as an independent entity. The largest proportion of host agencies were family support programs, hospitals, and mental health agencies, followed by child welfare and other social service agencies. Approximately 47% of Healthy Families programs reported they exclusively serve first-time families, and only 38% of current programs reported they had sufficient resources to serve all pregnant women. The proportion of sites able to serve all families (first-time parents and those with previous children) has not increased in recent years. Moreover, this represents a lower proportion served than during HFV's formative years, reflecting a continuing shortfall. Many mothers (who already have other children at home) may not have access to prevention services that could benefit their families. Another three programs (14%) that cannot provide services to all families in need have prioritized services to other targeted, higher-risk populations

such as first-time and teenage mothers or first-time and unwed mothers. Programs also recognize the importance of dads and make every effort to enhance father involvement.

Table 4. Healthy Families Virginia Sites' Program Structure

Number of Sites	21	
	N	**%**
Number of Sites Serving More Than One Community	13	61.9
Number of Sites Housed within a Host Agency	20	95.2
Types of Host Agencies		
Health	1	4.8
Hospital	3	14.3
Family Support	3	14.3
Mental Health	3	14.3
Other Social Services	2	9.5
Child Welfare	2	9.5
Public Aid	1	4.8
Other	5	23.8
Target Populations Served		
First Time Families	10	47
All Births	8	38
Other Target Populations (i.e., first time and teen mothers, first time and unwed mothers)	3	14

This section examines collaborative relationships with hospitals, clinics, and other agencies. Programs must work closely with local hospitals to achieve the overall goals and objectives of Healthy Families. Table 5 presents information about the collaborating relationships that Healthy Families programs have

developed with local hospitals. These 21 Healthy Families programs have established relationships with 45 collaborating hospitals. The earliest relationship began 10/1/92 and the most recent began 3/10/03. The number of relationships represents a five-year period of stabilization after several years of growth. Only one program has reported that a relationship with a hospital has ended, indicating that the established relationships continue to serve the mission of both organizations. About 44% of the hospitals (N=21) are private, "non-profit" hospitals and one quarter (27%) are private "for-profit." Eight are public "non-profit," two are "religiously-affiliated" hospitals, two are children's hospitals, one is a military hospital, and one is a university-affiliated hospital. On average, 1,198 births occurred at each hospital, although considerable variability exists in the number of babies delivered each year.

Table 5. Relationships With Collaborating Hospitals

Number of Collaborating Hospitals	45	
	Earliest	**Latest**
Start Date	10/1/92	3/10/03
End Date	7/1/99	7/1/00
Types of Hospitals	**N**	**%**
Private Non-Profit Hospitals	20	44.4
Private For Profit Hospitals	12	26.7
Public Non-Profit Hospitals	8	17.8
Religious Affiliation Hospitals	2	4.4
Children's Hospitals	2	4.4
Military Hospital	1	2.2
University Affiliation	1	2.2

	Min	**Max**	**Avg**
Annual Births at Hospital	100	3,500	1197.7
Medicaid Births as Percentage of Total	0	35%	16.3%

Table 6 presents information about the collaborating relationships that Healthy Families has established with 49 public and private medical clinics between 9/01/92 and 1/15/09. The number of relationships with clinics has declined somewhat in the past five years as the result of several programs closing because of state budget cuts. In FY 2013, HFV worked with eight fewer clinics than it did in FY 2010 and in FY 2014 that number was reduced further. Working with hospitals and having effective partnerships with local obstetric/gynecology, prenatal care, and general health clinics is essential to the mission of HFV. Obstetric/gynecology clinics (35%) and general health clinics (35%) constitute the largest proportion of clinics. Next in frequency were prenatal clinics (18%). Almost half of the clinics (N=23) were public, and the rest were split between private for-profit (N=10) and private non-profit (N=9). Virtually all of the partnerships that were not lost due to sites closing remain active, indicating that they continue to serve the needs of both organizations.

Table 6. Relationships With Collaborating Medical Clinics

Number of Collaborating Medical Clinics	49	
	Earliest	**Latest**
Start Date	9/1/92	1/15/09
End Date	9/30/00	1/1/06
Type of Clinics	**N**	**%**
Prenatal	9	18.4
Ob/Gyn	17	34.7
General	17	34.7
Unknown	6	12.2
Type of Organization	**N**	**%**
Public	23	46.9
Private For Profit	10	20.4
Private Non-Profit	9	18.4
Unknown	7	14.3

Table 7 presents a five-year summary regarding the collaborating relationships that Healthy Families has established with 180 community-based agencies between 10/01/92 and 1/1/13. It is important to note, that while the number of collaborating clinics decreased because of sites closing, the remaining sites have continued to forge new connections with community agencies and increase the number of these connections.

Establishing and strengthening the connections between HFV programs and local organizations that value prevention and promotion is an essential part of the HFA model. HFV has been successful because they established relationships in both the public and private domains. Approximately 64% of the organizations were public, while 33% were private non-profit, and 3% private for-profit. The number of collaborative relationships has continued to increase after a period of significant growth between 2009 and 2010.

Collaborations with early educational providers were most frequently cited. Programs also reported working with health departments, child welfare, mental health, family support programs, and other social service agencies. Relationships with housing, substance abuse, juvenile justice, and public aid agencies were cited less frequently, but nevertheless constitute an important subset of collaborations. These relationships provide the opportunity to help HFV families access important resources and services, and they also provide opportunities for mutually beneficial activities such as consultation, advocacy, training, and sharing volunteer staff. This level of integration and collaboration with other local organizations indicates HFV's success in fostering systems-wide integration of services on behalf of children and families and a creative, cost-effective use of scarce resources. .

Table 7. Relationships With Other Agencies

Number of Collaborating Agencies	30	
	Earliest	**Latest**
Start Date	3/1/93	1/1/13
End Date	6/30/99	6/30/02
Type of Agencies	**N**	**%**
Early Education	5	16.7
Health	1	3.3
Child Welfare	2	6.7
Mental Health	5	16.7
Other Social Services	0	0
Family Support	7	23.3
Housing	0	0
Substance Abuse	0	0
Juvenile Justice	0	0
Public Aid	5	2.8
Other	8	26.7
Type of Organization		
Public	18	60.0
Private Non-Profit	11	36.7
Private For Profit	1	3.3

Table 8 provides information on the demographics and educational levels of the 574 Healthy Families staff members working in the 21 Healthy Families Virginia programs included in this statistical profile[2]. The average age of Healthy Families staff persons is 44 years, and the vast majority (98%) are female. A substantial proportion of Healthy Families staff (25%) speaks a second language. Almost all of the Healthy Families staff (96%) provided information on their educational background. Approximately 94% had at least some college education. Approximately 63% of all staff are college graduates, and 16% of all home visitors have earned a graduate degree. Forty-two percent of HFV staff describe themselves as White, 33% as Black, and 20% as Hispanic. More than half of all staff members (60%) reported that they were FSWs who provide direct home-visiting services to families. Family assessment workers (12%) constituted the next largest group of staff. Program managers (coordinators, directors, administrative and clinical supervisors) comprised about 14% of all staff positions. Finally, nine percent of all staff reported that, in their organization, they operated under a title not included in the list provided.

[2] There could easily be 50% more staff working in the non-PIMS programs who are not represented in this profile.

Table 8. Healthy Families Virginia Staff Characteristics

Number of Staff	574	
	Earliest	**Latest**
Date of Hire	7/1/76	10/15/14
HFA Training Date	9/1/89	10/3/14
Earliest Service Date	9/1/89	10/1/14
Staff Demographics		
Average Age	44.2	
Gender	**N**	**%**
Female	560	97.6
Male	12	2.1
Missing	2	0.3
Speaks Other Language	**N**	**%**
Yes	145	25.3
No	429	74.7
Education	**N**	%
High School	33	5.7
GED	4	0.7
Some College	106	18.5
Associate Degree	50	8.7
College Graduate	227	39.5
Some Graduate School	40	7
Graduate Degree	92	16
Unknown	21	3.7
Race	**N**	**%**
Black	188	32.8
White	241	42
Hispanic	90	20.4
Multi-racial	3	0.7
Asian	2	0.5
American Indian	0	0

Table 8. Healthy Families Staff Characteristics (Continued)

Unknown	4	0.9
Staff Positions	**N**	**%**
Program Coordinator	5	0.9
Program Manager/Director	21	3.7
Administrative Supervisor	11	1.9
Clinical Supervisor	42	7.3
Family Assessment Worker (FAW)	66	11.5
Family Support Worker (FSW)/Home Visitor	346	60.3
Child Development Specialist	0	0
Parent Educator	7	1.2
Support Staff	16	2.8
Volunteer	3	0.5
Other Title	50	8.7
Unknown Title	7	1.2

PART III: FY 2011-2015 HEALTHY FAMILIES VIRGINIA EVALUATION RESULTS

A. Overview

1. Introduction

This section is based primarily on the **32** Healthy Families Virginia sites with evaluations in place at the end of FY 2014. The evaluation is organized around the framework of the Statewide Goals and Objectives (Appendix A) formally adopted by HFV and approved by program managers in June 1999 and revised and updated in June 2006. Having a statewide evaluation framework in place adds considerably to sites' ability to provide information concerning common goals and objectives. This framework also allows judgments about implementation fidelity and program impact to be based on comparable data across sites.

The information summarized in this section came from two sources. First, the information on assessment, enrollment, engagement, and goal attainment generated by the PIMS database was examined for the 21 PIMS-using sites. Second, the evaluation results from 11 collaborating sites were examined.

It is important to provide a status update on the HFV initiative and evaluation because of funding changes. Since July 2009, both the number of sites able to provide data and the quality of the data provided have improved significantly. Despite having modest resources for evaluation, HFV Program Managers have been dedicated to making evaluation a priority. Across the past four years, however, HFV has sustained substantial cuts in State funding and the total number of sites participating in this evaluation, 32, is the smallest since 2001, at which time 36 sites had been established, all of which participated in the evaluation. As noted above, six HFV programs (Chesapeake, Halifax/South Boston, Eastern Shore, Norfolk, Portsmouth, and Piedmont) have closed since July 2009.

The volume of data and the number of families represented in this FY 2011-FY 2015 statewide evaluation remains substantial, however, evaluating home-visiting programs requires a long-term commitment and a long-term perspective, both of which have been undermined by previous budget cuts. Nevertheless, the current pool of evaluation findings continues to offer substantial guidance to those responsible for creating and funding prevention efforts that meet the needs of new parents throughout Virginia.

2. Sites Included in the Report

The 32 HFV sites included in this report (see Table 9) were divided into three groups. The first group included 18 sites who fully participated in the statewide evaluation project. Full participation consists of using the PIMS data system, providing PIMS data for the annual evaluation report, and receiving evaluation reports and report cards from the program evaluators. The second group, contributing sites, included three sites that use PIMS and provide PIMS data for the statewide evaluation project, but do not participate fully in the project and do not receive evaluation reports or report cards. Data from these sites were added to the aggregate data for the analysis for this year. The final group of 11 sites collaborated on the evaluation by providing the results of their own data collection and evaluation processes.

Table 9. Healthy Families Virginia Sites' Evaluation Status

Site		Conducting Evaluation	Year Began	Contracted Evaluator	Using PIMS	Contributed PIMS Data
FY 2014 Participating Evaluation Sites						
1	Healthy Families Central Virginia	✔	2000		✔	✔
2	Healthy Families Charlottesville	✔	2000		✔	✔
3	Chesterfield/Colonial Heights Families First	✔	1996		✔	✔
4	Culpeper Families First	✔	1999		✔	✔
5	Healthy Families Danville/Pittsylvania	✔	1999		✔	✔
6	Healthy Families Fairfax	✔	1998		✔	✔
7	Healthy Families Hopewell/Prince George	✔	2000		✔	✔
8	Healthy Families Loudoun	✔	2000		✔	✔
9	Healthy Families Newport News	✔	1999		✔	✔
10	Healthy Families Northern Shenandoah	✔	1999		✔	✔
11	Healthy Families Blue Ridge	✔	1999		✔	✔
12	Healthy Families Rappahannock Area	✔	1999		✔	✔
13	Healthy Families Richmond	✔	1998		✔	✔
14	Healthy Families Southwest VA	✔	1999		✔	✔
15	Healthy Families Three Rivers	✔	1999		✔	✔
16	Healthy Families Virginia Beach	✔	1999		✔	✔
17	Healthy Families Warren County	✔	2001		✔	✔
18	Healthy Families West Piedmont	✔	1999		✔	✔

Table 9. Healthy Families Sites' Evaluation Status (Continued)

FY 2014 Contributing Evaluation Sites						
	Site	Conducting Evaluation	Year Began	Contracted Evaluator	Using PIMS	Provided PIMS Data
1	Hampton Healthy Start	✔	1992	Internal	✔	✔
2	Henrico Healthy Families	✔	1996		✔	✔
3	Healthy Families Petersburg	✔	1999		✔	✔
FY 2013 Collaborating Evaluation Sites						
	Site	Conducting Evaluation	Year Began	Contracted Evaluator	Using PIMS	Other Data System
1	Healthy Families Alexandria	✔	1994	Internal		✔
2	Healthy Families Arlington	✔	1997	Internal		✔
3	Healthy Families Page	✔	2003			✔
4	Healthy Families Fauquier	✔	2001			
5	Healthy Families Orange	✔	1999			
6	Healthy Families Prince William	✔	1997	Internal		✔
7	Healthy Families Rappahannock County	✔	2001			
8	Healthy Families Shenandoah	✔	2001			
9	Healthy Families Suffolk	✔	1999			
10	Healthy Families Madison	✔	2001			
11	Healthy Families Charles City/New Kent	✔	2000		✔	✔

Table 9. Healthy Families Sites' Evaluation Status (Continued)

	FY 2010-2014 Sites Closed					
	Site	Conducting Evaluation	Year Closed	Contracted Evaluator	Using PIMS	Other Data System
1	Chesapeake Healthy Families/CHIP	✔	FY2012			
2	Healthy Families Eastern Shore	✔	FY2011			
3	Healthy Families Halifax	✔	FY2011			
4	Healthy Families Norfolk	✔	FY2012			
5	Healthy Families Portsmouth	✔	FY2012			
6	Healthy Families Piedmont	✔	FY2013		✔	

3. Method

Because the report includes sites that participate in the statewide evaluation project and those that do not, the data were analyzed in two different ways. Twenty-one sites (18 participating and 3 contributing sites) provided individual, participant-level data through the common PIMS data collection tool. These data were aggregated both across sites and across the fiscal years 2011 through 2015 and were analyzed to examine the statewide initiative's attainment of the HFV goals and objectives. The results of these analyses are presented first in the discussions of each objective.

B. Critical Program Elements: Screening, Assessment, Enrollment, Engagement

The HFA approach to home visiting is defined by key program elements validated by repeated scientific evaluations and found to be critical to the success of early interventions with new parents. The HFA accreditation program uses these critical elements as a way to ensure, measure, and improve program quality. All of these critical elements have been adopted by HFV, and several have been formally adopted as process and outcome goals in this evaluation. These critical elements begin with initiating

services prenatally or at birth and using standardized assessment tools to systematically identify families most in need. The Healthy Families America Best Practice Standards state that participation is voluntary, and services are offered by culturally competent staff who build family trust; this makes participants more receptive to services and more likely to become personally engaged. This section of the report presents a summary of the activities performed by the 21 PIMS sites to identify and engage families most in need of home-visiting services during FY 2011 through FY 2015.

1. Introduction to Screening and Family Assessment

The following sections present information on screening and assessment (determining which families need services), assignment (opening a case and assigning an FSW who is responsible for making contact and scheduling the first home visit), enrollment (completing the initial home visit with participants who agreed to participate in the program's services), engagement (maintaining additional consistent participation in the program), and attrition (when and why participants leave Healthy Families services). Each HFA critical program element is presented in succession, and each has important program and program evaluation consequences.

2. The Screening Process and Results

Identifying at-risk families and engaging them in home-visitation services represent two critical process goals for child abuse prevention programs. In Healthy Families programs, the early identification process identifies at-risk pregnant mothers or families of newborns using a two-stage screening and assessment protocol. Screening involves either a record review or brief interview to identify indicators of risk. The screening is conducted using a standardized 15-item instrument (see Table 10 for a list of the demographic and psycho-social factors used to conduct this initial screening). If the parents' screen is negative, the family is not considered at-risk. Since most programs operate under conditions of scarcity

and limited resources, they make every attempt to be systematic about allocating limited program slots. Research indicates that families who are not at-risk are much less likely to benefit from the intervention.

Table 10. Early Identification Screening for Referral to Healthy Families Virginia

Standardized Screen	Family Stress Checklist Interview
– Unmarried - Partner unemployed - Inadequate income - Unstable housing - No phone - Education under 12 years - Inadequate emergency contacts - History of substance abuse - Inadequate prenatal care - History of abortions - History of psychiatric care - Abortion unsuccessfully sought or attempted - Adoption sought or attempted - Marital or family problems - History of depression	1. Childhood history of being abused 2. Substance abuse, mental illness or criminal history 3. Previous or current Child Protective Services involvement 4. Low self-esteem, poor coping ability 5. Multiple life stressors 6. Potential for violent temper outbursts 7. Unrealistic expectations for child's development 8. Harsh punishment of child 9. Perceives child as being difficult or provocative 10. Child unwanted or risk of poor bonding

Tables 11-15 provide a statistical profile based on the 21 HFV sites that participated in the statewide evaluation process using PIMS since FY 2005. Although this summary reflects neither all of the programs operating nor all of the participants receiving services through HFV programs, it is representative of those families thus is useful in understanding the characteristics of HFV sites and their organization in communities across the Commonwealth. To assist the readers in understanding recent

trends in screening, assessment, enrollment, and engagement, these data are displayed aggregated across fiscal years and separately for FY 2015.

From July 1, 2010 to June 30, 2015, 34,930 women were screened. Approximately half of the screens (51.2%) were conducted prenatally and 48.1% were conducted postnatally. Approximately 78% of the screens were positive, and 32% of those families screening positive received assessments. Almost one in five (6,775 or 19.4%) of all the families screened were negative. In FY 2015, the proportion of positive screens assessed (28%) was similar to the proportion assessed for all years (31%).

Each Healthy Families site also recorded the reasons why some individuals who screened positive did not receive assessments. The largest category of individuals declined the invitation to participate because they were not interested in the services being offered (29%). Participation in the home-visitation component of Healthy Families is completely voluntary, and families can decline further services at any time during their participation in the program. Sixteen percent of all families could not be located following screening. Another seven percent declined because they were already participating in another program, three percent were not able to enroll because they were moving out of the service area, and five percent of all families declined assessment because the individual did not believe his or her family needed the services being offered.

Finally, 269 individuals (two percent) were not assessed because individual programs had met assessment quotas. This lack of resources and the inability to offer services to families in need limited the ability of some programs to conduct comprehensive assessments of all families screening positive in their community. These limitations increase the likelihood that families at-risk for child abuse and neglect will not receive services designed to protect children.

Table 11. Screening Summary

	FY 2015 n=8362		All Screened n=34930	
Time of Screen	**Number**	**Percentage**	**Number**	**Percentage**
Pre-natal	5311	63.5%	18241	51.2%
Post-natal	3026	36.2%	17076	48.1%
Unknown	35	0.4.%	322	0.9%
Missing	10	0.1%	709	2.0%
Total:	**7586**	**100.0**	**33992**	**100.0**
Screen Outcome				
Positive Screens	6347	75.2	28519	77.5
Assessed	2334	27.2	11289	30.7
Not Assessed	3889	46.5	16996	46.2
Assessment Pending	124	1.5	234	0.6
Negative Screens	1971	23.0	6775	18.4
Total:	**8318**	**98.2**	**35294**	**95.9**
Reasons Not Assessed				
Refused/not interested	1113	25.5	5082	28.6
Does not need services - client decision	194	4.4	936	5.3
Does not need services - staff decision	32	0.7	166	0.9
Participating in another program	168	3.9	1307	7.4
No time available to participate	68	1.6	377	2.1
Missed at hospital	18	0.4	901	5.1
Moving/moved	70	1.6	591	3.3
Unable to locate	685	15.7	2742	15.5
Miscarriage	47	1.1	294	1.7
Abortion	2	0.0	30	0.2
Adoption	8	0.2	21	0.1
Deceased target child	4	0.1	21	0.1
Child protective services (CPS) status	7	0.2	18	0.1
Language barrier, no interpreter	22	0.5	53	0.3
Assessment quota met	3	0.1	269	1.5
Did not meet criteria (inappropriate referral)	784	18.0	1423	8.0
Other	1103	25.3	3393	19.1
Unknown	34	0.8	116	0.7

3. The Assessment Process and Results

If a family's screen is positive and the family consents, a personal interview is conducted using the Kempe Family Stress Assessment (KFSA) to assess need for services. The ten risk factors constituting the KFSA appear in Table 10. The parent receives a score on each factor - 0 (no or little risk of maltreatment), 5 (moderate risk), and 10 (severe risk) - for a total score ranging between 0 and 100. If either parent scores 25 or above, the family is deemed at-risk and is eligible for Healthy Families home visiting. If space in the program is available, and the family signs a consent form, the Family Resource Specialist (FRS), who completed the assessment interview, explains the goals of the program and services available and invites the family to participate on a voluntary basis.

A total of 10,385 women have been assessed since 7/01/10. Twenty-one percent (approximately one fifth) of the assessments conducted in the last five years occurred during the most recent year which suggests that the rate of recruitment has leveled off across this period. Eighty-three percent were assessed prenatally or within two weeks after delivery (55% prenatally and 28% postnatally), surpassing the national credentialing standard of 80% set by HFA. Eighty-nine percent (7,835) received positive assessment dispositions and were offered services.

Of the families with positive assessments who were offered services, approximately 88% accepted. This represents an excellent rate of acceptance of the program. Approximately nine percent of the eligible families with KFSA scores of 25 or more refused services. Most of those families provided reasons for refusing/declining services. Approximately six percent declined because they were already participating in another program. Twenty-six percent of the families declined citing a lack of interest in the offered services and 25% declined stating their families did not need the services. Another 10 percent of those offered services could not accept because of an impending move out of the service area. Ten percent were interested in participating but did not have the time available to participate. In five percent of the cases, the program was not acceptable to another family member.

Although Healthy Families staff make every effort to build trust and explain the potential benefits of participation in Healthy Families, ultimately a family's decision to accept services is completely voluntary and is always respected. Compared to similar voluntary home-visiting programs, HFV rates of 90% acceptance and engagement at six months demonstrates that the program has enjoyed considerable success in attracting participants initially and maintaining their involvement over time.

Table 12. Assessment Summary

	FY 2015 n=2,244		All Assessed n=10,385	
Time of Assessment	**Frequency**	**% of all Assessments**	**Frequency**	**% of all Assessments**
First Trimester	267	11.9%	1327	12.7%
Second Trimester	517	23.0%	2764	26.5%
Third Trimester	347	15.5%	1623	15.6%
Within two weeks of birth	724	32.3%	2902	27.8%
More than two weeks after birth	368	16.4%	1619	15.50%
Missing	21	.9%	198	1.90%
Total Assessments Prenatal and Within two weeks after birth	**1855**	**82.7**	**8616**	**82.6**
Total Assessments	**2244**	**100.0**	**10433**	**100.0**
Post-Assessment Disposition	**Frequency**	**% of all Assessments**	**Frequency**	**% of all Assessments**
Positive, accepted services	1427	63.6%	6923	66.8%
Positive, refused services	214	9.5%	912	8.8%
Positive, not offered services	128	5.7%	988	9.5%
Negative, minimal services or referrals given	385	17.2%	1272	12.3%
Negative, no services or referrals given	77	3.4%	276	2.7%
Total number of assessments	**2244**	**100.0**	**10371**	**100.0**
Positive assessments offered services	1641	92.8	7835	88.8
Positive assessments accepting services	1427	87.0	6923	88.4
Reason for Refusing Services	**Frequency**	**% of all Refusals**	**Frequency**	**% of all Refusals**
Not Interested	70	32.7	221	26.6
Does not need services - client decision	43	20.1	215	25.9
Does not need services - staff decision	0	0.0	0	0.0
Not ready to commit	3	1.4	26	3.1
Misunderstood services/purpose of assessment	1	0.5	2	0.2
Moving	17	7.9	82	9.9
Participating in another program	8	3.7	50	6.0
No time available to participate	14	6.5	86	10.4
Not acceptable to other family member	11	5.1	39	4.7
Other (specify)	23	10.0	109	13.1
Unknown	0	0.0	0	0.0
Total number of refused services	**214**	**100.0**	**830**	**100.0**

Figure 1. Percentage of Assessments at Moderate and High Risk on the Kempe Family Stress Assessment

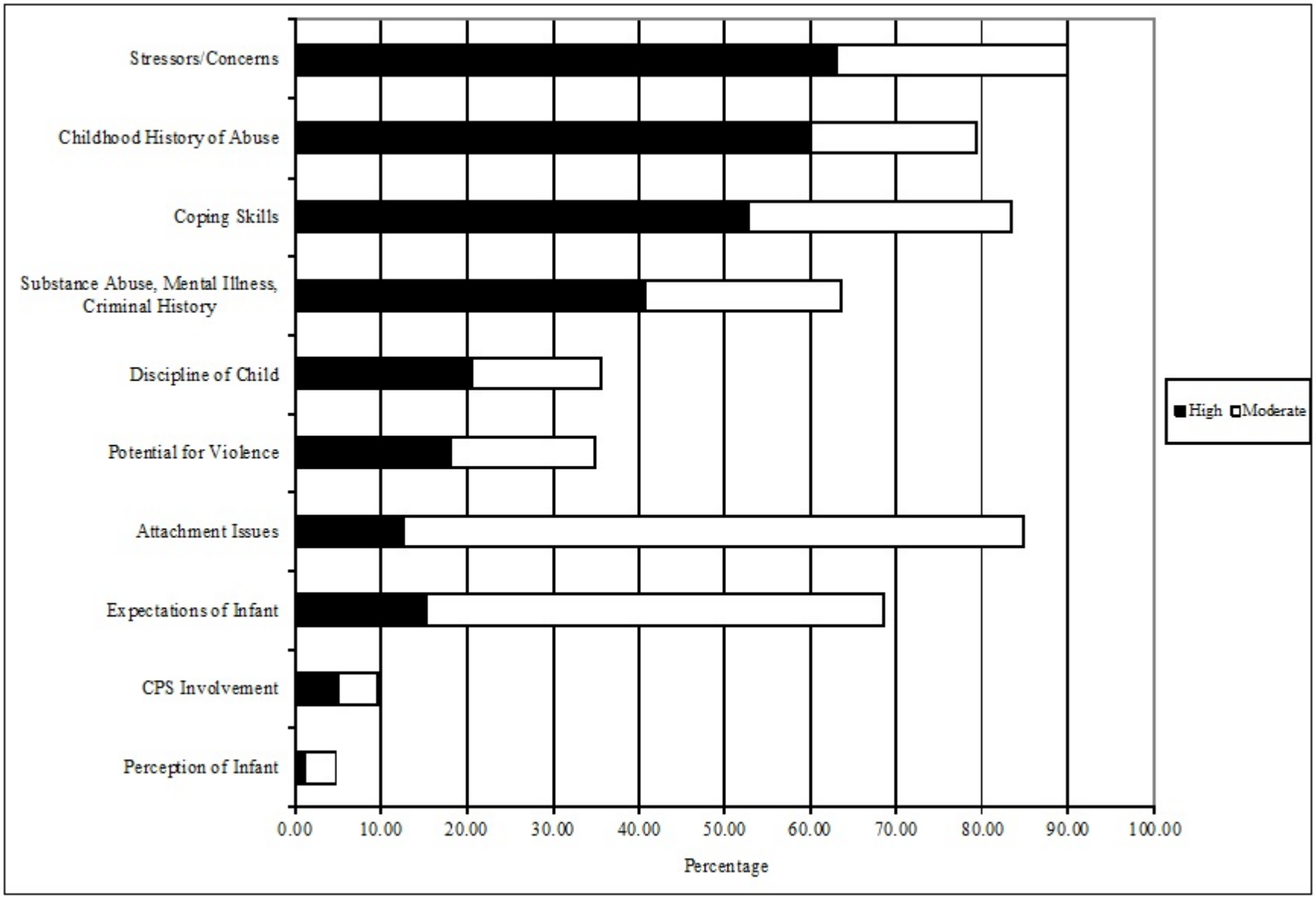
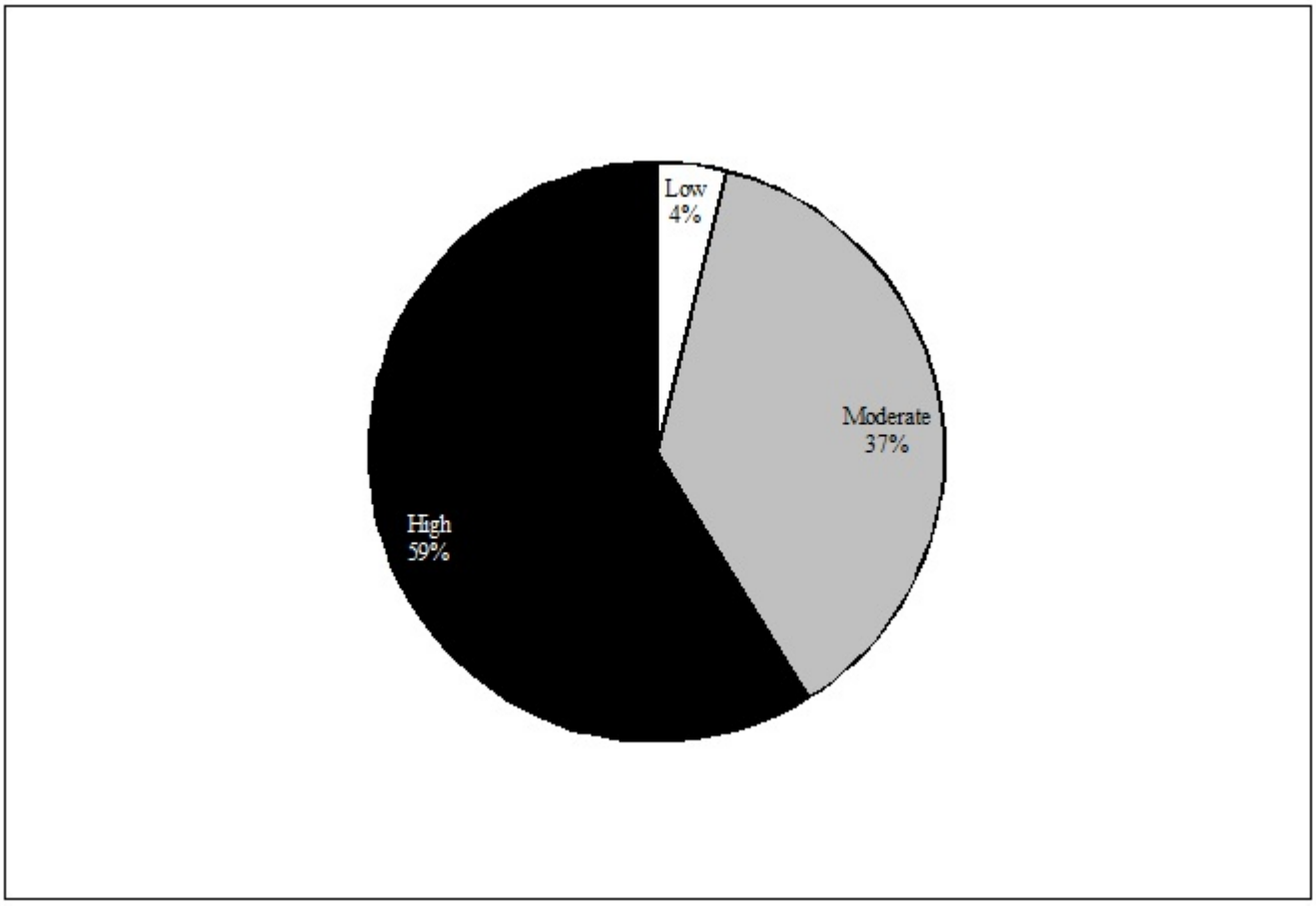


Figure 1 displays the breakdown for participants' scores on the individual subdomains of the KFSA. The figure indicates the highest proportion of the participants had high-risk scores in the domains of "stressors and concerns," "childhood history of abuse," and "coping skills." Of note is the more than 40% of participants reporting high risk levels of mental health and substance abuse issues or a criminal history. Significantly, the state-level Home Visiting Consortium has identified mental health as a major priority that requires additional attention in the future. Finally, the fact that very few participants were at-risk because of "CPS involvement" is appropriate because Healthy Families is a prevention program, intentionally enrolling families before problems occur.

Figure 2. Percentage of Eligible Participants at Low, Moderate, and High Risk on the



Kempe Family Stress Assessment

Figure 2 displays the proportion of participants who had low-, moderate-, and high-risk KFSA scores at the time of assessment. The proportion of participants who were at high-risk (59%) was slightly greater than the proportion of participants with scores placing them in the moderate-risk category (37%). This was a substantial increase in the proportion of high-risk families compared to previous years. Four percent of families with mothers assessed as low-risk had partners who scored 25 or above on the KFSA. These assessment data suggest Healthy Families programs identify families whose family histories and current mix of risk factors and needs indicate a higher-than-average-risk for child maltreatment and other poor childhood outcomes. It is sobering to note that since the initiative began, *more than half of all of the enrolled women self-reported a childhood history of abuse and nearly half of all enrolled families in programs across Virginia were at high risk for serious negative child and family outcomes.* The increase in high-risk scores coincided with the recent downturn in the Virginia economy, an effect that was predicted from the research literature.

Table 13 presents the characteristics at the time of enrollment of the 6,535 families who participated in HFV programs between 7/01/10 and 6/30/15. The average age of the mothers enrolled in the program was 22.8. For this evaluation cycle, 49% described themselves as Black, 26% as White, and 22% as Hispanic. An additional three percent described themselves as Asian/Pacific Islander, Multiracial, or Native American. The racial profile of HFV participants has changed compared to earlier years with an increase in the proportion of Black families - up from 37% in FY 2005. Most participants were unmarried (77%), and a large proportion were never married (60%). Seventeen percent were living together, but not married. Fourteen percent were married for the first time, and approximately four percent were separated or divorced. Approximately 36% of all participants had less than a high school education. Almost 30% of all families had completed high school or gained a GED, and nearly 28% had

some training beyond high school, although only six percent were college graduates. Twenty-two percent of all participants were currently enrolled in school. Thirteen percent of all families were employed full-time, and another 13% were employed part-time. Approximately 32% of all the participants were unemployed and not looking for work, while another 19% were unemployed but looking for employment. The proportion of people not looking for work is larger than previous years. At the time of enrollment in Healthy Families, 56% were Medicaid eligible, and 7% had private insurance. Medical information provided at intake revealed that 893, or 17%, of all families had no insurance, although 355 of those families (40%) had applied. Not having health insurance represents a major risk factor, increasing the likelihood of negative child and health outcomes and poor child development.

Table 13. Characteristics of Participating Families

	07/01/2011-06/30/2015 n=5389		
Age	*Average*	*22.8*	
	Minimum Age	*14.2*	
	Maximum Age	*41.0*	
	Categorical Breakdonw of Participant	**Frequency**	**% of all**
Age	Under 18	626	11.9
	18 to 19	833	15.8
	20 to 30	3065	58.1
	Above 30	642	12.2
Race	*Black*	*2576*	*48.8*
	White	*1400*	*26.5*
	Hispanic	*1151*	*21.8*
	American Indian, Eskimo or Aleut	*9*	*0.2*
	Asian/Pacific Islander	*57*	*1.1*
	Multi-racial	*78*	*1.5*
Marital Status	Single, never married	3158	59.8
	Living together, not married	898	17.0
	Married, first time	714	13.5
	Remarried	41	0.8
	Separated	134	2.5
	Divorced	68	1.3
	Widowed	5	0.1
	Unknown	34	0.6
Education	Less than 7th grade	260	4.9
	7th to 11th grade	1283	24.3
	12th grade	350	6.6
	High school diploma	1325	25.1
	General Equivalency Diploma (GED)	268	5.1
	Post high school training/some college	1034	19.6
	College graduate - associate degree	177	3.4
	College graduate - bachelor's degree	205	3.9
	Some graduate school	33	0.6
	Graduate degree	45	0.9
	Unknown	67	1.3

Table 13. Characteristics of Participating Families (Continued)

Currently in School	Yes	1154	21.9
	No	3747	71.0
	Unknown	87	1.7
Employment	Full-time employed (35+ hrs per wk)	667	12.6
	Part-time employed (<35 hrs per wk)	671	12.7
	Odd jobs/irregular part time	54	1.0
	Unemployed, but looking	990	18.8
	Unemployed, not looking	1712	32.4
	Unemployed, full-time student	486	9.2
	Unemployed, part-time student	44	0.8
	Medical leave/disability	270	5.1
	Other	74	1.4
	Unknown	37	0.7
Primary language	English	4174	77.5
	Spanish	912	16.9
	Other	102	1.9
	Unknown	5	0.1
Insurance	Medicaid - regular	2641	50.0
	Medicaid - emergency	324	6.1
	Private carrier	387	7.3
	No insurance, have applied	355	6.7
	No insurance, have not applied	538	10.2
	Other	268	5.1
	Unknown	363	6.9

*Statistical Note: The discrepancies between the overall n designated at the top of the table and the individual category totals are due to a small number of missing cases in the individual categories.

4. Enrollment and Engagement

Once the program has opened services for a family, program staff must engage that family in regular and active participation in home visiting services. Nationwide, family support programs struggle with the challenge of engaging eligible families and maintaining their involvement over time (Myers-Walls, Elicker & Bandyk, 1998; Daro, McCurdy, Rauh, Nelson, & Brown,1999). If preventing child abuse and neglect demands an extended intervention, then a low rate of retention poses a serious threat to programs trying to reach their objectives. The beneficial effects of home-visiting would be further undermined if the families who drop out happen to be those most in need of services. Engaging and retaining families in prevention programs like Healthy Families is critically important to program providers, funders, and evaluators.

a. Enrollment

Enrollment is the first step toward involving participants in Healthy Families. A family is considered enrolled after being assessed as at-risk, offered services, agreeing to participate, and receiving an initial home visit. Assessment information and demographics are entered into PIMS once the family is enrolled as Healthy Families participants. Most of the analyses conducted in this evaluation are based on enrolled participants. Table 14 presents information on the participants who accepted and enrolled in Healthy Families programs since 7/01/10.

Of the 7,835 families who received positive assessments and accepted services for FY 2010 - FY 2015, 71% received a first home visit and were successfully enrolled. An additional 730 cases (10%) were still open and eligible to receive a first home visit. Since FY 2011, 19% of families who accepted services terminated before receiving their first home visit. In FY 2015, 67% of the 1,526 eligible families successfully enrolled in programs throughout the state. The overall enrollment rate of 71% is consistent

with previous years. While this overall level of performance is satisfactory, it demonstrates the negative impact that funding cuts have had on programs and provides additional evidence that there has not been sufficient funding available for sites to maintain the scope of their services. Although funding restoration had begun, sites were still $0.5 million below 2009 Funding levels.

Table 14. Enrollment of Eligible Participants in Healthy Families Virginia Services

	FY 2015		All Years	
Number of Positive Assessments Offered Services	1641		7835	
Number of Open Cases	1526		7200	
	N	**%**	**N**	**%**
Open- Have not received first home visit	218	14.3	730	10.0
Terminated before first home visit	283	18.5	1359	18.9
Enrolled	1025	67.2	5111	71.0

b. Engagement

The second step in the process, engagement, involves the family's regular participation in program services and receiving home visits by an assigned FSW. The distinction between enrollment and engagement is critical for the accuracy and validity of the outcome evaluation. To be considered engaged, participants must have participated for more than six months or receive at least 8 home visits. All participants enrolled for six months or longer were considered engaged.

Table 15 presents information on the engagement of the 5,111 families enrolled in Healthy Families programs. Inspection of Table 15 reveals Healthy Families programs successfully engaged 68% of all enrolled participants. HFV programs had a similar level of engagement, in FY 2015**.** The initiative has previously maintained a high level of success in engaging families and the rate of engagement for the

last five years has been highly consistent, despite funding cuts during this period. The FY 2015 and FY 2011-2015 engagement showed a large decrease. Further examination indicated that a large number of Healthy Families sites appear to be under counting monthly home visits. Retention and engagement are major challenges for prevention programs attempting to serve families but HFV will further investigate the decline in engagement for FY 2016 and beyond.

Table 15. Engagement of Healthy Families Virginia Participants

	FY 2015		All Enrolled Participants	
Total Enrolled	1025		5111	
	N	%	N	%
Engaged	726	68.5	3486	68.1

5. Conclusion

These results indicate Healthy Families programs successfully and systematically identify families most in need and engage them in services. This HFV statewide evaluation report covers a five year time-span. During FY 2011 to FY 2015, the 21 Healthy Families sites participating in the statewide evaluation screened almost 35,000 potential participants and provided assessments for 10,385 women[3]. The fact that one fifth of the five year recruitment for HFV occurred during FY 2015 indicates that growth has been relatively stagnant across the last five years. Eighty-three percent of the families were assessed prenatally or within two weeks of delivery, surpassing the HFA national standard for credentialed programs of 80%. Of the 10,385 individuals who had final assessment dispositions, 89% were assessed positive. Of the 7,835 families with positive assessments who were offered services, 88% accepted. This

[3] As previously stated, these statistics underestimate the total scope of Healthy Families activities across the state because they do not include 14 collaborating sites. The screenings, assessments, and enrollments at these 24 sites represent almost 80% of the individuals who were served by Healthy Families.

favorable acceptance rate is virtually identical to the rates for the last two years. The total number of participants who accepted services was 6,923. Most of the families enrolled were unmarried (86%). Approximately 36% had less than a high school education. Although 63% of the participants had graduated from high school, only four percent had earned a college degree. The average age of participants was 22.8 years. The largest single category of participants (49%) were Black; 27% were White, and 22% were Hispanic. Another 3% were Multiracial or Asian/Pacific Islander. The racial composition statistics represent a significant increase in the proportion of Black families - up from 37% in FY 2005. Moreover, many of the families are at risk of not being able to access services for their children because a large proportion (17%) is enrolling without health insurance (n = 893).

Based upon the risk assessment interview, 59% of the participants enrolled were at high-risk and 37% were judged at moderate-risk. This result represents a significant shift toward the high-risk category. Individuals enrolled in Healthy Families programs across the state were most frequently at-risk because of "stressors and concerns," "childhood history of abuse," and "poor coping skills." These assessment data suggest the family histories and current mix of risk factors and needs of HFV participants place them at higher-than-average-risk for child maltreatment as well as other poor childhood outcomes. It is sobering to note that at enrollment, more than half of the women reported a childhood history of abuse. Moreover, as stated earlier, since the initiative began, more than half of the families enrolled in programs across Virginia were at high-risk for serious negative child and family outcomes. Nevertheless, in recent years, there has been a small increase in the percentage of enrolled participants who were successfully engaged in FY2015 – 90% across the last five years. Healthy Families engages more families than expected by HFA accreditation. Engaging participants to continue over time is a major challenge for all prevention programs attempting to engage families who initially may be distrustful or defensive and who

are faced with circumstances potentially reducing the likelihood of continued involvement. Gaining the trust of families has always been a major goal of HFV.

C. A Summary of Healthy Families Virginia Program Outcomes

Most HFA programs share a common vision and a common set of goals. The HFA model recommends that all HFA programs document intended change using a common set of outcome domains (NCPCA, 1996). During FY 1999, HFV acted on these recommendations by establishing a set of statewide objectives (Appendix A). The HFV statewide objectives include goals in four major domains:

•Achieve positive pregnancy outcomes and maternal and child health outcomes.

•Promote optimal child development by screening for suspected delays, referring children for developmental evaluation, and monitoring participation in treatment programs for children with identified delays.

•Promote positive parent-child interaction and stimulate home environments that support child development.

•Prevent child abuse and neglect.

This report organizes the findings from Virginia sites using these four domains. The report covers a five-year time frame, from FY 2011 through FY 2015. Each section presents the data for all sites that have monitored attainment of each objective. When the sites had limited capacities to implement measurement objectives, the report includes a description of these shortcomings.

1. Achieve Positive Pregnancy, Maternal, and Child Health Outcomes

Healthy Families home-visiting programs attempt to ensure children's health by promoting preventive health care such as enrolling mothers in early prenatal care, reducing pregnancy risk factors, and

promoting well-baby care visits and immunizations. Improved birth outcomes and child health are both important in their own right because they provide the necessary foundation for children to be healthy, secure, and academically successful in the future. Recent research on brain development indicated that approximately 90% of brain growth occurs between conception and age three. Many of the child and maternal goals Healthy Families programs target directly contribute to that period of development (Family and Work Institute, 1997; Perry & Pollard, 1998).

The first standardized statewide goal states that participants will achieve positive pregnancy, maternal, and child health outcomes. In order to measure progress toward that goal, objectives were established in four domains representing specific HFV objectives. Families will a) receive appropriate health care, b) experience positive pregnancy and birth outcomes, c) appropriately immunize children, and d) reduce or delay subsequent births.

a. Early Prenatal Care

Prenatal visits are important for the health of both the infant and the mother. Health care professionals providing prenatal care can educate mothers on important health issues such as diet and nutrition, exercise, immunizations, weight gain, and abstaining from drugs and alcohol. They also have the opportunity to instruct expectant parents on topics important for the postnatal period such as nutrition for their newborn, the benefits of breast feeding, injury and illness prevention. They can also diagnose health-compromising conditions and help mothers prepare for the new emotional challenges of caring for an infant. In fact, the type and amount of support available to a woman during her pregnancy has a significant impact on the mother's capacity to relate to her baby (Bright Futures, 2002).

The outcomes of preterm birth have a dramatic effect on the status of infant health in the United States. Being born preterm is the greatest risk factor for infant mortality (death within the first year of life).

Recent analyses of infant death data by CDC researchers demonstrated that preterm-related deaths accounted for more than 1/3 of all deaths during the first year of life, and more infants died from preterm causes than from any other cause. Preterm-related infant mortality rates vary by maternal race and ethnicity.

The percent of mothers who receive prenatal care in the first trimester was 74.1% for the general population. However for mothers who had a high school diploma only the rate was 68.6% and for mothers with less than a high school diploma the rate was 58.5%.

In 2012, (Child Health USA, 2014) 79 percent of white women had prenatal care in the first trimester compared to 70.7% for Hispanic women. The rate for black women was 63.6%. In addition, the rate for women without Medicaid insurance was 65.2% compared to 85% for women with insurance. Mothers who receive late or no prenatal care are more likely to have babies with health problems. Mothers who do not receive prenatal care are three times more likely to give birth to a low-weight baby and their baby is five times more likely to die in the first year of life (Maternal and Chid Health Bureau, 2005). The rates nationally for late or no prenatal care for Black (5.7%) and Hispanic (5.4%) mothers (groups served by HFV), were substantially higher than the rates for White mothers (2.2%). However, there is concern among some health researchers that increased use of prenatal care alone may not be sufficient to bring further substantial improvements in birth outcomes. Many women who lack adequate care also have social risk factors related to low socioeconomic status and young age that cannot be fully addressed through more adequate prenatal care.

To address these issues, home visitors and providers of prenatal care pay attention to the living conditions of pregnant women, including homelessness and domestic violence. Someone on the health care team takes responsibility for connecting patients with people and agencies who can help resolve problems.

i) Goal 1, Objective 1a: 75% of HFV prenatal enrollees will make 80% of prenatal care visits on schedule as recommended by the ACOG or provider.

The results presented in Table 16 summarize the prenatal care findings (FY 2011 - FY 2015) for the 830 prenatally enrolled mothers for which HFV programs provided documentation. Of those 830 mothers, 94% received at least 80% of the recommended number of prenatal visits or more. This level of performance far exceeded the statewide criterion that 75% of prenatally enrolled mothers will complete 80% of all recommended visits. Also positively, during FY 2015, 90% of the 516 active families received 100% of their expected prenatal care visits and 97% received 80% or more of their scheduled prenatal care visits. Staff can take pride in the high overall prenatal care rate attained across the last five years.

Table 16. Prenatal Care Completion of Prenatally Enrolled Mothers

	FY 2015		FY 2011-2015	
Total Number of Births to Prenatal Enrollees	516		830	
	N	%	N	%
100% of Expected Prenatal Care Visits	465	90.1	711	85.7
80-99% of Expected Visits	34	6.6	71	8.6
50-79% of Expected Visits	10	1.9	34	4.1
Less than 49% of Expected Visits	7	1.4	12	1.4

Early and continuous prenatal care is important for an infant's health and survival. Most women in Virginia, regardless of race or ethnicity, began prenatal care during the first three months of pregnancy. The Healthy People 2020 goal is that 77.9% of pregnant women will begin prenatal care during the first trimester of pregnancy.

b. Birth Weight

Babies weighing over 2,500 grams (5 lbs., 8 oz.) are in the healthy range of birth weights. HFV strives for 85% of prenatal enrollees to deliver babies weighing at least 2,500 grams. Babies born preterm are at increased risk for immediate life-threatening health problems, as well as long-term complications and developmental delays. Complications can include respiratory distress, anemia, and infection. Long-term consequences can include learning and behavioral problems, cerebral palsy, and vision & hearing loss. As a result of these risks, preterm birth and low birth weight are the leading causes of infant death and childhood disability. (March of Dimes, 2014) Moreover, although low-birth-weight babies comprised only 8.1% of all births in 2011 (up since 2001 which was 7.7%), they accounted for 69% of infant deaths (also up since 2001, which was 66%)(Child Trends, 2013 and Mathews & MacDorman, 2008).

Non-Hispanic black infants are more likely than babies of other races to be low birth weight. In 2013, 13.1 percent of non-Hispanic black infants were low birth weight, compared with 8.3 percent of Asian and Pacific Islanders, 7.5 percent of American Indians and Alaska Natives, 7.0 percent of non-Hispanic whites, and 7.1 percent of Hispanic infants. (Child Trends, 2015)

i) Goal 1, Objective 2a: 85% of prenatal enrollees will deliver babies weighing at least 2,500 grams (5 lbs. 8 oz.).

Table 17 presents the birth weight results for the 1,857 children born to prenatally enrolled mothers. For the purposes of this evaluation, only women enrolled for at least one month prior to delivery are considered prenatally enrolled. One month of prenatal care was considered the minimum amount of service with the potential to impact birth outcomes. Across the FY 2011 - FY 2015 time period, 90% of all infants born to prenatally enrolled mothers had birth weights greater than 2,500 grams. This overall level of performance across Healthy Families programs was excellent, clearly surpassing the state criteria of 85%. HFV's performance during FY 2015 was similarly strong: 92% of the 1,115 active families had infants born within the healthy birth weight range. Staff are to be commended for

maintaining this consistent record of excellence. Moreover, by way of comparison, the 2012 healthy birth weight rate for the Virginia general population was 82% (Voices for Virginia's Children, 2012). Virginia's rate is equal to the national rate of 82%. These statistics make the HFV outcomes even more impressive since our rate is achieved with the sub-sample of higher risk families and the Virginia general population rate is based on all Virginia families.

Table 17. Birth Weights of Babies Born to Prenatal Enrollees

	FY 2015		FY 2011-2015	
Total number of births to prenatal enrollees	1115		1857	
Birth Weight Category	**N**	**%**	**N**	**%**
Greater than 2500	1024	92.2	1677	90.3
1500-2500	72	6.5	149	8.0
750-1499	15	1.4	22	1.2
Less than 750	4	0.4	9	0.5

Information about national base rates can provide a context for interpreting HFV's performance in this domain. The overall HFV healthy birth weight rate of 90% was attained by serving a population of families with multiple risk factors associated with low birth weight; i.e. young, minority mothers with low educational attainment. Nationally in 2012, 11.55% of infants were born preterm and 7.99% were born at low birth weight. Preterm and low birth weight vary by ethnicity. 16.53% of infants born to black mothers were born preterm and 13.18% were born with low birth weight. Nationally (National Vital Statistics Reports, 2013) in 2012, low birth weight rates for high-risk populations were: Black, 13.18%; Hispanic, 7.0%; White, 7.0%; 15-19 years old, 13.29%. Interestingly, in Virginia, the low birth rate for whites has steadily declined from **8.3 percent in 2008 to 8.0 percent in 2013.** All of these statistics may underestimate the combined impact of multiple risk factors. Many HFV families are minority, young,

and have less than a high school education. They may also be poor, and many do not have health insurance or access to medical care, both of which contribute to this challenge. Comparison rates for the families with a combination of these demographic risk factors do not exist but such a rate would surely be higher than that of any of the low birth weight rates reported (Child Trends, 2012; Voices for Virginia's Children, 2012; U.S. Department of Health and Human Resources, 2004).

c. Birth Complications

Healthy Families programs that enroll mothers prenatally hope they will influence health-related behaviors such as cigarette smoking, alcohol and drug use, diet, and early identification of pregnancy complications that can adversely impact an infant's health. Although many programs have implemented prenatal curricula designed to educate and support women during their pregnancy, most programs do not have the resources to evaluate this important outcome. In the one program that measured pregnancy risk factors and birth complications, the results were highly significant. Participants experienced one-third of the pregnancy risks and fewer than half of the birth complications experienced by control group participants who received all of the standard health department services but did not participate in Healthy Families (Galano & Huntington, 1999b).

d. Connection of Target Children to Medical Care Providers

All HFV programs have adopted the objective that every target child will have a primary health care provider within two months of birth or enrollment. Primary care physicians can educate and motivate parents about the importance of regular office visits and preventive care. In addition, programs have endorsed the objective that children will continue to maintain their relationship with their health care providers to ensure that children continue to receive quality health services. This relationship also

plays a crucial role in child abuse prevention, as it gives another professional consistent access to the family to provide support and monitoring of the well-being of the baby.

i) Goal 1, Objective 1b: 85% of HF target children will have a primary health care provider within 2 months of enrollment or birth of the target child.

For the FY 2011-2015 evaluation cycle, the 32 Healthy Families programs participating in the statewide evaluation completed the necessary medical documentation to examine whether the infants born to their participating families had primary health care providers within two months of enrollment into the program. The data in Table 18 reveal that across the last five fiscal years, 93% of the 5,074 target children had primary health care providers within two months of birth or enrollment. This level of performance surpasses the demanding 85% criterion set for established Healthy Families programs. During FY 2015, the initiative's performance was similarly excellent, connecting 94% of the 3,089 active families. Both the overall level of connection attained across the last five fiscal years as well as the FY 2015 level represent high levels of success and continue the record of success established by HFV.

Table 18. Connection of Target Children to Medical Care Providers

	FY 2015		All Years	
Total Number of Births	3089		5074	
	N	**%**	**N**	
Children With Providers	2905	94.0	4728	93.2

e. Continuation of Connection with Medical Care Providers

i) Goal 1, Objective 1d: 80% of HF target children will continue seeing a primary health care provider.

For the FY 2011-FY 2015 evaluation cycle, all participating sites provided data on a total of 2,567 families for this evaluation objective. The data in Table 19 indicate that 94% of the target children had continued with their health care providers after 6 months of participation in the program. This proportion is slightly lower than previous years. During FY 2015, HFV's performance was similarly strong; 98% of the 1,684 active families maintained their connection with their medical care provider. This rate of continuation of connection to a medical care provider easily surpassed the statewide criterion of 80% set for established programs and demonstrates that the initiative succeeded statewide in ensuring that families have access to a physician and needed medical care.

Table 19. Continuation of Connection with Medical Care Providers

	FY 2015		All Years	
Children with Providers	1684		2567	
	N	**%**	**N**	**%**
Continuing with Providers	1649	97.9	2400	93.5

f. Immunization

Age-appropriate immunization is one of the most important health indicators for children. Adequate immunization protects children against several diseases that have killed or disabled many children in past decades. According to the U.S. Department of Health and Human Services (2000) vaccines also provide significant cost benefits. The measles epidemic of 1989-1991 demonstrated that the coverage level was insufficient to control vaccine-preventable disease outbreaks. The United States must continue to ensure each new cohort of children receives full vaccination. HFV has established a goal that 80% of all target children will receive all immunizations as recommended by the American

Academy of Pediatrics and the Virginia Department of Health (VDH) (Virginia Department of Health, 2001). The U.S. Department of Health and Human Services (2014) estimated 74.6% of children nationwide received the recommended vaccinations in CY 2014 (4:3:1:3:3:1 vaccine series).

For a more direct comparison with HFV programs, the 2010 U.S. National Immunization Survey conducted by the Centers for Disease Control and Prevention estimated that the CY 2014 vaccination completion rate was 74.6% for the Virginia general population. In 2011 the national and the Virginia immunization coverage rates were identical. HFV's performance (90% in FY 2015) surpasses the demanding statewide objective, exceeds the Virginia average of 74.6% for the general population, and far exceeds the local health department (LDH) coverage for FY 2014 Sentinel Report immunization rate of 68.2% for comparable high-risk families. Healthy Families programs can take pride in this level of performance. **These findings from the most recent 2014 National and Virginia immunization surveys are alarming. They attest to the need to do a better job of protecting all of our children, and especially our most vulnerable families.**

i) Goal 1, Objective 3a: 80% of Healthy Families children will receive all immunizations on schedule as recommended by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics, the State Health Department, or their provider.

For this FY 2011-FY 2015 evaluation cycle, participating children were considered "up-to-date" if they received **all** of their scheduled immunizations by the cut-off date for this report (06/30/15) or the date that they were discharged from the program, whichever was earlier. This criterion, 100% of all scheduled immunizations, represents a very high standard that HFV has set for itself.

Table 20 presents the immunization completion rates for 32 sites. Eighty-six percent of the 3,293 families obtained full compliance, with children receiving 100% of their scheduled immunizations.

Another eight percent of children received more than 75% of their immunizations, affording them some degree of protection. Overall, only six percent of children enrolled since FY 2011 received fewer than 75% of their recommended immunizations. The initiative's performance during FY 2015 was even better, with 90% of the 2,292 active children receiving 100% of their recommended immunizations. Staff can feel a sense of pride; this annual immunization coverage rate of 90% is excellent. In FY 2015, another six percent had more than 75% of their scheduled immunizations, and only four percent had fewer than 75% of their scheduled immunizations. HFV's overall level of performance from FY 2011-2015 of 86% represents continued success in this domain. This level of immunization coverage attained by high-risk families exceeds the Virginia average of 79.3% for the general population and clearly exceeds the immunization rate for comparable high-risk families. Positively, the initiative's 90% immunization rate for FY 2015 represents a moderate increase over FY 2011-2015 overall rate of 90%.

Table 20. Immunization Completion for Participating Children

	FY 2015		FY 2011-2015	
	2292		3293	
Immunization Completion	**N**	**%**	**N**	**%**
100% up to date	2072	90.4	2840	86.2%
80-99%	122	5.3	234	7.1%
75-80%	16	0.7	34	1.0%
less than 75%	82	3.6	185	5.6%

Scientific alert: Progress towards full immunization of young preschoolers has stalled and DECLINED since 2004, according to a Child Trends analysis of recently released national data from the Centers for Disease Control and Prevention (CDC&P). Examining the demanding 4:3:1:3:3:1 Series demonstrates that it rose from 55.1% to 80.9% between 1995 and 2004. That rate has stalled; the 2006 rate was 80.6%. The national rate actually declined over the last two years – the 2008 rate was 78.2%. In

Virginia, the situation was similar but worse because there was even more of a decline. The 4:3:1:3:3:1 Series rates rose from 52.8% to 81.0% between 1995 and 2004. The 2006 rate was 81.5%. **The 2014 rate for Virginia was 79.3%**. This is a major decline in an indicator that many scientists view as a proxy for the overall health of our children. Moreover, a substantial portions of the families served by HFV only have a highschool education and many households are living near the poverty level. The immunization rates for families living below the poverty level are 64.4 % compared to 73.8% for families living at or above the poverty level. HFV's support to families with lower incomes mitigates many of the detrimental impacts of poverty.

Importantly, during the same period, the immunization rates for HFV (based on families at high risk for poor outcomes) have not stalled; rather, they have continued to rise and the rate was 86% for the last five years-- ***the same time period that Virginia declined.*** HFV's FY 2011-2015 and the FY 2015 annual rates for early prenatal care and immunization rates remained at high levels. **Moreover, the Virginia immunization coverage rate of 90% for FY 2015 is significantly higher than Virginia's overall rate of 79.3%.**

g. Longer-Term Health Impacts

In addition to the positive health outcomes reported above, HFV is interested in learning whether home-visiting results in long-term impacts on child health. The most substantial evidence comes from the Prenatal/Early Infancy Project (P/EIP) (Olds, Eckenrode, et al., 1997; Kitzman et al., 1997, Olds, Henderson, & Kitzman, 1994). Long-term follow-up of families in the P/EIP program indicated that mothers were less likely to abuse their children or to have rapid successive pregnancies. These women became more economically self-sufficient and avoided substance abuse and criminal behavior. By the time their children reached 15 years of age, the women had fewer arrests and convictions, smoked and drank less, and had fewer sexual partners (Olds et al., 1999). Healthy Families New York found dramatic

and enduring impacts on reduced rates of abusive parenting and pronounced effects on cognitive and educational outcomes at ages 2, 5, and 7 years (DuMont et al., 2008).

To begin to address this question, the city of Hampton followed children enrolled in the Hampton Healthy Start program prospectively (at 6, 12, 24, and 36 months of age) and compared their outcomes to a control group of randomly assigned children. The standardized follow-up assessments collected information on the physical development of children, well-baby visits, immunizations, and the number of emergency room visits. Information was also obtained about ear infections and children's health problems (e.g., failure to thrive, asthma). The three-year follow-up produced consistent findings including better physical development, medical care, and better health of Healthy Start children.

In two reviews of the home-visiting literature, Olds and Kitzman (1993, 1990) concluded that many programs aimed at preventing problems and promoting health in pregnant women and young children proved ineffective. Their reviews concluded that the most successful programs continued home visiting at least throughout the second year of the child's life, focused services on families most in need, and used highly trained staff. These best practices represent characteristics of Healthy Families programs, and although these data are preliminary, the pattern of results obtained across these complementary domains is encouraging.

h. Maternal Health

Increasing the interval between childbirths allows parents to provide children with nurturing and constant care. It also reduces economic and family stresses that may lead to negative consequences for children. Conceiving too soon after birth may also cause problems because the mother needs to recover from vitamin depletion, blood loss, and reproductive system damage and is unable to do so. Moreover, particularly for unmarried women, avoiding closely-spaced, unplanned pregnancies is associated with higher educational achievements and greater participation in the work force (Olds, et al., 1999). A meta-

analysis conducted in 2006 (Conde-Agudelo, Rosas-Bermudez, & Kafury-Goeta, 2006) found that short (less than 6 months) inter-pregnancy intervals are associated with increased risk of adverse perinatal outcomes (i.e. pre-term birth, low birth weight, and small size for gestational age).

i) Goal 1, Objective 4a: 85% of teen mothers will have an interval of at least 24 months between the target child's birth and subsequent births.

Healthy Families programs have established the objective that 85% of teen mothers will have an interval of at least 24 months between the target child's birth and subsequent births (See Appendix A, Goal I.4.a.). Several sites also established the goal that 75% of non-teen mothers will have the same interval between births (See Appendix A, Goal I.4.e).

A total of 760 mothers have been participating in the 21 PIMS programs for at least two years. The data in Table 21 present the information regarding the interval between the birth of the target child and any subsequent births for all 54 teen mothers enrolled in the program. All of those teen mothers were in the program long enough for their child to reach the age of two. Of those 54 mothers, 43 (79.6%) had no births, and 3 (5.6%) had a subsequent birth after the 24-month interval. This represents a 85% overall success rate, attaining the 85% criterion set for established programs. A total of 8 teen mothers (14.8%) had a subsequent birth before the end of the targeted 24-month interval. These findings are very encouraging. They confirm that Healthy Families helps these teenagers avoid closely-spaced pregnancies and suggest that these teen mothers are choosing not to have additional children in order to pursue education and other life goals.

Abused children are 25% more likely to experience teen pregnancy. The fact that nearly half of HFV participants were abused as a child makes these findings even more impressive.

Table 21. Subsequent Births to Participating Mothers - Teens

Number of Eligible Mothers	760	
	N	**%**
Number of Eligible Teens	54	7.1
Subsequent Births Before Target Child is 24 Months	8	14.8
Target Child Younger than 24 Months with Subsequent Births	3	5.6
Target Child Older than 24 Months with Subsequent Birth Before 24 Months	5	9.3
No Subsequent Births Before 24 Months	46	85.2
Target Child Older than 24 Months and No Subsequent Births	43	79.6
Target Child Older than 24 Months with Subsequent Birth After 24 Months	3	5.6

A 85% Overall Success Rate for Teen Mothers

- 80% of teen mothers had **no** subsequent births
- 5% of teen mothers had a subsequent birth **after** the targeted 24-month interval
- This 85% overall success rate attained the criterion established by HFV

ii) Goal 1, Objective 4b: 75% of non-teen mothers will have an interval of at least 24 months between the target child's birth and subsequent births.

The data in Table 22 present the information on the interval between the birth of a target child and subsequent births for all 716 non-teen mothers. All of those families participated in the program long enough for their children to reach the age of 24 months. Positively, 574 (80.2%) of these non-teen mothers have had no subsequent births and 52 (7.2%) mothers had a subsequent birth after the 24-month targeted interval. This represents an overall statewide success rate of 87% with this group of older non-teen mothers. A total of 91 mothers (12.7%) had subsequent births occurring before the target child had reached the age of 24 months. HFV programs' positive performance on this objective surpassed the statewide objective of 75% and along with attaining the reduction of subsequent births to participating teens represent continued success in this domain.

Table 22. Subsequent Births to Participating Mothers - Non -Teens

Number of Eligible Mothers	760	
	N	**%**
Number of Eligible Non-Teens	716	94.2
Subsequent Births Before Target Child is 24 Months	91	12.7
Target Child Older than 24 Months with Subsequent Birth Before 24 Months	70	9.8
Target Child Younger than 24 Months with Subsequent Births	21	2.9
No Subsequent Births Before 24 Months	626	87.4
Target Child Older than 24 Months with Subsequent Birth After 24 Months	52	7.3
Target Child Older than 24 Months and No Subsequent Births	574	80.2

An 87% Overall Success Rate for Non-Teen Mothers

- 80% of non-teen mothers had **no** subsequent births
- 7% of non-teen mothers had a subsequent birth **after** the targeted 24-month interval
- This 87% overall success rate represents surpasses the criterion set by HFV.

These findings suggest Healthy Families programs have effectively helped women reduce closely-spaced and unintended pregnancies. In addition, the performance in this domain has been relatively uniform across communities. These delays place mothers in a better position to complete school, obtain employment, and provide positive child rearing environments. In the one established program that conducted a more thorough follow up, participation in Healthy Start resulted in reduced teen birth rates. The rate of repeat teen births for the city of Hampton and the state were threefold that of program participants (Galano & Huntington, 1999b). Across the last five years the program's annual repeat teen birth rate has always been less than five percent despite serving only high risk families.

iii) Spacing Births Saves Lives

For Children: Children born three to four years after a previous birth compared to children born less than two years after a previous birth are:

•1.5 times more times more likely to survive the first week of life

•2.2 times more likely to survive the first 28 days of life

•2.3 times more likely to survive the first year of life

•2.4 times more likely to survive to age five

For Mothers: Mothers who give birth at 27-32 month intervals compared with mothers who have their babies at 9-14 month intervals are:

•1.3 times more likely to avoid anemia

•1.7 times more likely to avoid third-trimester bleeding

•2.5 times more likely to survive childbirth

For more information, see *Birth spacing: Three to five saves lives*. Population Reports, Series L, Number 13 (Setty-Venugopal & Upadhyay, 2002).

i. Overall Summary: Child and Maternal Health Outcomes

Overall, the results in this health domain are very encouraging. The evaluation findings suggest the majority of program participants identify and secure appropriate and stable health care services for themselves and their babies. Most participants receive early prenatal care, secure a primary medical care provider, and receive immunizations on time. Evaluating HFV success in areas such as early prenatal care and immunizations requires placing the findings in context. For example, Healthy Families may be the only statewide initiative where programs have elected to hold themselves accountable for tracking 16 recommended immunizations. Moreover, most Healthy Families programs have substantial numbers of participants who are 19 and younger, minorities, poor, and less educated. The Virginia Department of Health CY 2014 Sentinel Report estimated that the vaccination completion rate was 68.2%. The 86% overall performance statewide is clearly positive. It easily exceeded the 79.3% Virginia average for the

general population and also surpassed the vaccination completion rates for Health Department clients. Moreover, a recent national analysis conducted by Child Trends indicated that early childhood vaccination rates for both the nation and the Commonwealth stalled during 2005 and 2006, and actually declined sharply from 2008 to 2012. Positively, during the same time period, vaccination rates for HFV have climbed, and in 2015 reached an excellent 90%.

HFV also recently established statewide goals in the area of mothers' health targeted at reducing closely-spaced births and repeat teen pregnancies. Tracking repeat pregnancies requires a long-term perspective, and the positive findings for this Aggregate Evaluation Report are based on approximately 2,300 women who have participated for at least two years. Collectively, from FY 2011-FY 2015, HFV sites experienced a 85% success rate with teen mothers and a 87% success rate with non-teen mothers. Families who avoid closely spaced pregnancies experience improved child health, higher educational attainment, increased future job status, and decreased infant homicide.

2. Child Development

The first three years of life constitute a critical period in a child's physical, sensory-motor, cognitive, and social development. Recent advances in our understanding of brain development have stimulated an interest in promoting early childhood intervention programs. This research indicates that the first years of life have important, long-lasting effects on children's brain function and their overall development (Carnegie Task Force on Meeting the Needs of Young Children, 1994). To enhance children's optimal development, Healthy Families home-visitors provide parent education; model positive parent-child interaction; help parents create stimulating, safe home environments; and routinely conduct standardized screenings for possible developmental delay.

a. Goal 2, Objective a: 90% of target children will be screened for developmental delays. Screening of each child will occur at least semi-annually until age 36 months, and annually thereafter.

The second standardized statewide goal, therefore, is to promote optimal child development by screening for suspected delays, referring children for developmental evaluation as indicated, and monitoring participation in the treatment program for children with identified delays. In order to measure progress toward this goal, information was collected in three domains representing specific HFV objectives: 1) screening participating children semi-annually for developmental delays, 2) making referrals to early intervention services, and 3) monitoring and following-up for identified children.

The Ages and Stages Questionnaire (ASQ) was adopted as the recommended instrument for screening participating children. The results for this evaluation period are based on data from 33 sites.

During the FY 2011-FY 2015 evaluation cycle, there were 2,615 children who were old enough to be assessed for this objective. Approximately 88% of those children were appropriately screened, having all of the semi-annual screenings for which they were scheduled. In addition, another five percent of eligible children had at least one developmental screening conducted, but did not have all of the developmental screenings for which they were scheduled. In all, 199 children (8%) had no developmental screenings conducted. The results for FY 2015 were slightly stronger; 92% of all children were appropriately screened and only 4% of the 1,930 active families had no developmental screenings conducted. HFV staff can take great pride in this accomplishment and in the ability of the statewide initiative to provide this important screening for these high risk children.

Table 23. Participating Children Receiving Ages and Stages Assessments

	FY 2015		All Years	
Total Children Old Enough for ASQ	1930		2615	
Children With No ASQs Recorded	84	4.4	199	7.6
Children With at Least One ASQ Recorded	1846	95.6	2416	92.4
	N	**%**	**N**	**%**
Appropriately Screened	1775	92.0	2292	87.6

The other two objectives in this domain were also examined. Two hundred seventeen children had suspected developmental delays. Seventy parents (32%) declined a referral for further services. Of the remaining 147 children, 134 (91%) were referred for further developmental assessment, exceeding the statewide evaluation criterion. Parents declining the referral was often attributable to parents leaving the program before the referral process was complete. Sixty-seven of the children referred for developmental assessment had confirmed delays, and 61 (91%) of those children received appropriate developmental services. Healthy Families Virginia has maintained this level of performance for the past five years.

b. Overall Summary: Child Development.

All of the sites endorsed the objectives to monitor child development by systematic developmental screening, referring those children with suspected delay to early intervention services for further assessment and following-up referred children. The overall level of 88% of children being screened appropriately across the last five years was just below the demanding 90% criterion. HFV's developmental screening rates represented a significant improvement in screening children and families and the 92% annual rate attained during the last fiscal year was impressive. In addition, 92% of the 150

children with suspected delays were referred for further developmental assessment. Of the 70 children with confirmed delays, 64 (91%) received additional appropriate developmental services. This level of child development follow up is slightly below the demanding 100% criterion.

3. Parenting and the Home Environment

One of the most important HFV program goals is to facilitate the development of positive maternal care-giving and parent-child interaction. All parents receive home visits by FSWs, who provide information on positive parent-child interaction, bonding, communication skills, and effective parenting skills.

In the logic or program model that guides most Healthy Families programs, parents, especially mothers, are the primary focus of the preventive intervention (Olds, Kitzman, Cole, & Robinson, 1997). Programs attempt to promote sensitive, responsive, and engaged caregiving. FSWs work with mothers and other care givers to learn to read their infants' cues and respond to them appropriately. Healthy Families emphasizes maternal sensitivity and responsivity, which are key predictors of secure attachment (Ainsworth, 1993). Moreover, evidence suggests that developmentally responsive caregiving results in more attached mothers less likely to injure, abuse, or neglect their children (Olds, Kitzman, et al., 1997; Olds, et al., 1994). The third HFV evaluation goal (See Appendix A, Goal 3. a & b) is to encourage parents to demonstrate both positive parent-child interaction and positive parenting knowledge and behavior.

This domain is central to the goals of HFV. For that reason, this evaluation initially used two highly regarded measures (the Nursing Child Assessment Satellite Training [NCAST] Feeding and the NCAST Teaching Scales) to examine care-giving behaviors and interactions between mothers and their

infants and toddlers (Barnard, 1978; 1994). Although the NCAST Scales provide a very high standard, their use proved to be very difficult for HFV sites because they require highly trained raters (often nurses, which were in short supply) and are expensive to administer.

Beginning in FY 2006, HFV provided sites the option of using the Key to Interactive Parenting Scales (KIPS), a then newly-developed instrument designed to examine care-giving behaviors and interactions between mothers and their infants and toddlers. Thus sites have the option of using either the NCAST scales or the KIPS to assess parent-child interaction.

During FY 2012, Healthy Families Virginia Directors added two objectives to examine the effectiveness of sites in maintaining or improving involvement of fathers with their children who are in the program. This is the first year that the report will include analysis of these data.

Measurement instruments: The NCAST Feeding Scale was used to examine the status of parent-child interaction. A companion instrument, the NCAST Teaching Scale, was designed to overlap with the Feeding Scale at six-months and one-year, measuring the same construct and using the same subscales and scoring systems as the Feeding Scale. The NCAST Teaching Scale was administered to mother-infant dyads when the child was six months, one year, and yearly thereafter until the child was 36 months of age.

The NCAST Feeding Scale score is based on an observation of a feeding episode between a mother and her infant. These questions are grouped into five caregiver and two infant subscales. The care-giver subscales are sensitivity to cues, response to distress, social-emotional growth fostering, and cognitive growth fostering. The infant subscales are clarity of cues and responsiveness to parent.

The NCAST Teaching Scale score is based on an observation of a teaching episode between the mother and the child. The teaching questions are grouped into five care-giver and two infant

subdomains. Care-giver subscales include sensitivity to cues, response to distress, social-emotional growth fostering, and cognitive growth fostering. Infant subscales include clarity of cues and responsiveness to the parent.

The KIPS score is based on an observation of an interactive episode between a mother and her infant or toddler. The subscales examine 12 behaviors demonstrated in the research literature to influence the parent-child relationship and infant development. The subscales are sensitivity of responses, response to emotions, encouragement, promotes exploration/curiosity, involvement in child activities, language experiences, touch/physical interaction, limits and consequences, open to child's agenda, reasonable expectations, adapts strategies to child, and supportive directions.

a. Goal 3, Objective a: 85% of participants will demonstrate an acceptable level of parent-child interaction or show improvement after one year of participation.

Results. The aggregated results for the NCAST Feeding and Teaching Scales and the KIPS are presented in Table 24. There were 2,344 children at 32 sites who were old enough to be assessed for this objective have received at least one assessment of parent-child interaction using either the NCAST or KIPS. In all, 2,134 children received at least one assessment of parent-child interaction. Of the 2,134 families with at least one completed assessment, 94% were within normal limits. HFV's level of performance on this critical indicator exceeds the 85% evaluation criterion. HFV's performance during FY 2015 was similarly strong; 94% of the 1,666 active families with at least one assessment were within normal limits. These results are very encouraging and indicate that children are receiving positive maternal care-giving and establishing healthy attachments. Moreover, the sites have achieved consistently at this level for the past five years.

Table 24. Results of Parent-Child Interaction Assessments

	FY 2015		FY 2011-2015	
Total Number of Children Old Enough for NCAST or KIPS	1716		2344	
Number of Children With At Least One NCAST or KIPS	1666	97.1	2134	91.0
	N	**%**	**N**	**%**
Within Normal Limits (> 10th Percentile)	1385	94.2	2006	94.0

b. Goal 3, Objective b: 85% of families will have optimal home environments to support child development or will show improvement in home environments after one year of participation.

In addition to parent-child interaction, the quality and quantity of developmental stimulation provided to children by their families represent key factors in children's development. Scientists have clearly documented that children's early experiences have a lifelong influence on brain development (Perry & Pollard, 1997, 1998). HFV, working through 32 community-based programs, teaches parents ways to put this research into practice. Because of the importance of this area, optimizing the home environment was established as a program objective for all HFV sites.

Measurement Instrument: The adequacy of developmental stimulation in each participant's home environment is assessed using the Home Observation for Measurement of the Environment (HOME) (Caldwell & Bradley, 1984). The HOME is a standardized instrument that has been widely researched, and assesses six aspects of the child's home environment that are known to foster cognitive development. It is comprised of 45 items divided into six subdomains: (1) responsivity of mother, (2) acceptance, (3) organization, (4) learning materials, (5) maternal involvement, and (6) variety in daily stimulation. The HOME is administered during a 45-90 minute home visit when the child is one-, six-, and 12-months old, and annually thereafter. The administration is conducted in a manner intended to minimize intrusiveness, yet it provides a way to determine if the program is having the intended impact of

strengthening the quantity and quality of the developmental stimulation provided in the home environment.

A summary of the assessments of each family's home environment are presented in Table 25. During the FY 2011-FY 2015 time period, approximately 92% of the 2,690 children at 24 sites who were old enough for the HOME received an in-home assessment.. HFV programs conducted one or more assessments on 2,486 families. Ninety-one percent of those families had home environments that were within normal limits. This means that the child's activities, daily routines, and home environment were structured in ways that appropriately meet the child's needs. This level of performance exceeded the statewide objective in this domain. During FY 2015, the program conducted HOME assessments for 1,921 active families. The results were excellent and consistent with the earlier findings: 95% of all active families had home environments that were within normal limits. These overall results are encouraging; the level of attainment across the last five fiscal years reflect ongoing success in this critical domain.

Table 25. Results of HOME Assessments

	FY 2015		**FY 2011-2015**	
Total Number of Children Old Enough for HOME	1921		2690	
Number of Children With At Least One HOME	1717	89.4	2486	92.4
	N	**%**	**N**	**%**
Within Normal Limits (> 60 %)	1631	95.0	2254	90.7

c. Goal 3, Objective c: 80% of fathers who are involved in parenting their children at program entry will continue involvement at same or improved levels.

The PIMS data collection system includes a question on fathers' involvement which is recorded as a baseline when the family is assessed and then is recorded again at follow-up points at 6 months, 12

months, 24 months, 36 months, 48 months, and 60 months. In response to the question, "Is the father involved with the target child," participants can respond with a choice of:

Emotionally and financially involved
Emotionally involved only
Financially involved only
Not involved
Does not know about child
Deceased
Other
Unknown

The first three responses are considered "involved." The last four responses are not used in the analysis. Also, the analysis can only be completed where the participant (or the father) has provided both baseline and follow-up information. For this year's first analysis of father involvement data, 1,490 fathers had baseline and follow-up data.

This objective, the first of two on father envolvement, examines the stability and change over time of those fathers whose baseline response fell into the first three categories, which are all considered "involved." For purposes of the analysis, the responses were ordered as above. Between baseline and follow-up, the response could a) stay the same, b) improve, or c) worsen. Improvement constituted moving to at least the next category up (i.e., from "Financially involved only" to "Emotionally involved only" to "Emotionally and financially involved") and worsening constituted moving to at least the next category down or to "not involved."

The results of this analysis are presented in Table 26. Of the 1161, fathers who were involved at baseline, 1076 (93%) improved or stayed the same (Improved: 70 (6%) or stayed the same: 1006 (87%)).

Only 85 fathers (7%) who were involved at baseline showed a decreased level of involvement at follow-up. This result indicates that HFV met this objective during this, the second year of analysis.

Table 26. Father Involvement with Participating Children - Baseline to Follow-up Change

Number with Involvement Info:	1489					
	Improved		**Unchanged**		**Worsened**	
Level of Involvement	**N**	**%**	**N**	**%**	**N**	**%**
Emotionally and Financially			940	62.6	63	4.2
Emotionally Involved	67	4.5	61	4.1	21	1.4
Paying Child Support Only:	3	0.2	5	0.33	1	0.1
Not Involved:	80	5.3	148	9.8	0	0.0

d. Goal 3, Objective c: 50% of fathers who are not involved in parenting their children at program entry will show an improved involvement level at follow-up

Of the 228 fathers who were not involved with their children at baseline, 80 (35%) showed an increased level of participation at follow-up. This level of improved involvement falls short of the level set by consensus of the HFV Program Directors; however, it is likely that expecting the program to have an influence on the level of involvement of 50% of the non-involved fathers is an overly optimistic objective.

The overall findings on the four objectives in the parenting domain indicate that HFV has performed very well in the cornerstone of the Healthy Families America model, i.e., the parent-child interaction.

4. Child Abuse and Neglect

In the first major study of child abuse and neglect in 20 years, researchers with the National Academy of Sciences (Institute of Medicine & National Research Council, 2013) reported that abuse can reshape a child's brain and cause damaging consequences that unfold over a lifetime.

The Committee on Child Maltreatment Research, Policy, and Practice for the Next Decade's Report goes on to say that, if untreated, the effects of abuse and neglect can impact children's physical and mental health, their ability to control emotions and impulses, their achievements in school, and the relationships they form as adults and members of our communities. The researchers recommended "an immediate and coordinated" effort to understand, treat, and most of all, prevent new cases of abuse and neglect. They estimated $80 billion in the direct costs of hospitalization, law enforcement, and child welfare, and the indirect costs of special education, juvenile and adult justice, health services, homelessness, and lost work productivity. The Chair of the Committee warned that "child abuse and neglect is a serious public health problem which requires immediate, urgent attention."

The U.S. Department of Health and Human Services reported that the number of children abused and neglected rose from 1.42 million in 1986 to 2.81 million in 1993, an increase of 92% (U.S. Department of Health and Human Services, Children's Bureau, 1996). The study also estimated that the number of children seriously injured from abuse nearly quadrupled in that same time period. Shamefully, the rates have continued increasing unabated. In 2005, 899,000 children were victims and, sadly, nearly half of those child victims received no treatment. From 1984 to 1993, there was a similar increase in juvenile crime and murders committed by juveniles (Snyder & Sickmund, 1999). However, by 2001 a Monitoring the Future report (Johnston, O'Malley, Bachman & Schulenberg, 2003) indicated that this juvenile crime and murder rate had declined back to its original 1984 level. Yet reports of child abuse and neglect grew by eight percent, and founded cases increased by four percent in Virginia (DSS, 2004).

Experts believe that the more dismal trends in abuse and neglect compared with other crime/violence statistics during that period were attributable to the lack of emphasis on, and, thus, a lack of funding for, the prevention of abuse and neglect.

The most recent statistics on child abuse and neglect reported by the National Clearinghouse on Child Abuse and Neglect Information (U.S. Department of Health and Human Services, 2010) estimated that there were 3.7 million cases of suspected child abuse and neglect reported to Child Protective Services in 2006. A total of over 700,000 (10.6 per 1,000) children were substantiated as victims of child maltreatment. Moreover, according to the National Center on Child Abuse Prevention Research over four children die from abuse or neglect every day (U.S. Department of Health and Human Services, 2010). Among substantiated cases, the nation's youngest children were over represented. One third of all the victims were under four years of age; the highest rate of maltreatment was observed during the first year of life (21.7 per 1,000). The vulnerability of these youngest children cannot be overstated. They have the greatest risk of death from maltreatment and many of their outcomes are often the most severe and intractable. These statistics suggest that a renewed focus on primary prevention, especially through home-visiting programs starting at the time of birth, can be an effective method of dealing with this alarming trend.

In Virginia, during FY 2015, 49,868 children were reported as possible victims of abuse, and 6,592 children were victims of founded investigations (i.e., a review of the facts met the legal criteria for abuse or neglect). Thirty-two percent of all victims in founded investigations of child abuse and neglect were children aged four or younger. Forty-eight of Virginia's children died of causes attributable to abuse or neglect. This number is significantly higher than the number of child fatalities reported each year from 2011-2013 (32, 38, and 36 respectively) and similar to the 47 fatalities in FY 2014. Thirty-eight of those 48 children who died in FY 2015 were aged four or younger**.** In addition, 33,809 children

were placed in "Assessment Track," meaning that a CPS worker completed a family needs assessment and developed a written safety plan. These statistics document that there is an urgent need for home visiting programs in Virginia. During state fiscal year 2014, investigations of abuse and neglect reports resulted in 1,846 out-of-home placements of children. One or both parents were identified as the perpetrators in 67% of the founded cases.

The Centers for Disease Control and Prevention's Task Force on Community Preventative Services issued a strong recommendation that early home visitation programs be implemented or continued. The Task Force's recent review of the scientific literature on home visiting suggests that approximately 40% of all maltreatment might be prevented if this recommendation is followed (Task Force on Community Preventative Services, 2002). In Virginia, prevention programs working with parents clearly have the opportunity to reduce the number of new cases of child abuse and neglect.

A report entitled "America's Children: Key National Indicators of Well-Being" (Federal Interagency on Child and Family Statistics, 1997), provides critical information concerning the appropriateness of using general population rates as comparison baselines. The report examined child abuse rates from the *Third National Incidence Study of Child Abuse and Neglect* for all families and for families stratified by income level. The overall national maltreatment rate reported was 2.3%; however, the rate for families with incomes over $30,000 was 0.02%, 2% for family incomes of $15,000 - $30,000, and 4.7% for families with incomes under $15,000. The rate for the poorest families was 22 times higher than the rate for families with the highest income.

The results of the *Fourth National Incidence Study of Child Abuse and Neglect (NIS-4*) was released in February 2010. Those results confirmed that children of unemployed parents experience two times the rate of maltreatment overall, and that children living in households with below $15,000 income

had seven times the rate of maltreatment of other children. These are precisely the families that HFV serves.

The different rates of child abuse and neglect for the poor and the unemployed are dramatic and have clear implications, given the current national economic crisis, for evaluating Healthy Families programs. Many participating HFV families have incomes that place them in the lowest income group. In addition to poverty, many HFV participants are single parents and many have low educational attainment, thereby adding to the overall level of risk. Thus, when taking risk level and family income into account, child abuse and neglect rates across HFV sites were far below the 4.7% comparison standard based on participant level of income and family risk factors. This relationship between child abuse and neglect and socioeconomic level has been reaffirmed by what is now the most authoritative study in this area. Though somewhat older, it remains the most authoritative study in this area and continues to be cited.

Importantly, a major epidemiological study was conducted by the state of Florida (Wu et al., 2004) that followed all infants born since 1996. The study tracked perinatal and sociodemographic risk factors associated with maltreatment and identified 11 risk factors that increased the risk of child maltreatment. Five of the 11 factors had adjusted relative risks (RR) of two or greater: Mother smoked during pregnancy (RR 2.8); more than two siblings (RR 2.7); Medicaid beneficiary (RR 2.1); unmarried marital status (RR 2.0); low birth weight infant (RR 2.0). Infants who had four of these five risk factors had a maltreatment rate seven times higher than the population average. These findings suggest that HFV is in fact preventing child maltreatment and that our earlier comparison standard may have in fact been an underestimate.

The Healthy Families model is designed to improve family coping skills, promote positive parenting skills and parent-child interaction, promote optimal child development, and as a result, prevent

child abuse and neglect. The fourth and final goal of the HFV statewide evaluation is also to prevent children from being abused or neglected. To measure progress toward this goal, the HFV statewide evaluation plan established a specific objective to reduce founded reports of child abuse and neglect among families who receive at least one year of service.

Assessing impacts on child maltreatment rates is a challenging and expensive task. The most demanding approach would track all participants over a long period of time and, if the participant moved out of Virginia, search the databases of each U.S. state to produce the most accurate analysis of rates among participants. This evaluation project was designed to provide useful information about the impact of the Healthy Families initiative within the bounds of budgetary constraints, resource limitations, informed consent issues, and current evaluation science. The primary decision to limit the analysis to participants enrolled in the program for at least one year, whether or not they were currently active, affected the analysis of child abuse and neglect. This decision was made because a year was considered to be the "dosage" necessary to demonstrate an impact on rates of founded cases of abuse and neglect. Thus, it seems likely that restricting the population in this way, however, will lead to more positive outcomes than if the analyses included individuals who only participated briefly.

Since the implementation of the Hampton Healthy Start program in FY 1993, the rates of founded cases of child abuse and neglect for Healthy Families participants have been examined in a number of contexts. The six-year, random-assignment study of Hampton Healthy Start indicated that the annual rate of founded cases never exceeded 1.5% (Galano & Huntington, 1999b). Additionally, Northern Virginia Family Services programs have consistently found rates of 1% or less and in FY 2013 and FY 2014 had no founded complaints among participants.

a. Goal 4 Objective a: 95% of HF families who receive at least 12 months of services will not have founded reports of child abuse and neglect of target child(ren) while enrolled.

Prior to FY 2015, HFV worked with VA DSS to conduct over 8,000 searches of the CPS Central Registry in the previous five years. During 2012, DSS imposed a temporary ban on CPS searches so no new searches were conducted that year. This means that the last five years of searches will provide the best estimate of the program's impact on the rates of founded cases. In FY 2015, there were 1,179 searches and the 0.8% rate of founded cases, in FY 2014, 1,260 searches with a 0.7% rate, in FY 2013, 863 searches with a 0.8% rate, in FY 2011, 2,441 searches with a 0.7% rate, and in FY 2010, there were 2,582 searches with a 0.8% rate of founded cases. HFV program sites have enjoyed a remarkably consistent record of success in this domain, always having a rate of founded cases lower than 1%. In summary, there were 64 founded cases for a total of 8,325 searches of the CPS Central Registry for a remarkable .7% rate for the 5-year time span. Program managers and home visitors can be proud of this achievement.

This 0.8% rate was consistent with those found for HFV during the past 4 years. In FY 2014, Healthy Families conducted 1,260 searches and nine founded cases were confirmed. This represents a rate of 0.71%. During 2015, there were 1,179 searches of the central registry. There were 10 confirmed cases for a rate of 0.8%. Perhaps the best estimate of HFV's impact is the rate of 1.24% based on over 12,500 searches conducted over the last five years. Moreover, the fact there are so few perpetrators in a population where over 50% of enrolled mothers self report a childhood history of abuse strongly suggests that HFV is contributing successfully to its goal of breaking the cycle of violence.

Table 27. Percentage of Families Participating in Healthy Families Virginia with Founded Child Protective Services Reports

Number of CPS searches conducted	1179	
	N	**%**
Founded CPS Cases	10	0.8

Most importantly, HFV is preventing cases of child maltreatment. HFV conducted 12,500 searches over the past five years, using the scientifically derived 4.7% comparison estimate (*Federal Interagency Forum on Child and Family Studies,* 1997). We predict that there would be 587 founded cases of child maltreatment. Instead, the actual number of cases was 137, meaning that HFV prevented 450 founded cases of abuse and neglect. One way to understand these findings is to examine the impact of HFV for a single year. Across each of the past 5 years, the average number of cases prevented was 90. This indicates that the annual costs of child abuse and neglect were reduced by $709,678 and that the total lifetime cost was reduced by $18,901,080. At a time when healthcare spending accounts for 18% of Virginia's economy and is projected to increase because of preventable conditions, we cannot afford to ignore the value of prevention programs such as HFV.

b. Overall Summary: Child Abuse and Neglect.

This year's report provides continuing evidence for the effectiveness of Healthy Families as a child maltreatment prevention program. First, the statewide rate of confirmed cases of child abuse and neglect was 0.8% based on 1,179 cases. Moreover, an examination of the CPS central registry reveals that in FY 2014, there were 1,260 searches with a 0.7% rate, in FY 2013, 863 searches with a 0.8% rate, in FY 2011, 2,441 searches with a 0.7% rate, and in FY 2010, there were 2,582 searches with a 0.8% rate of founded cases. HFV program sites have enjoyed a remarkably consistent record of success in this domain, always having a rate of founded cases lower than 1%. In summary, there were 64 founded cases for a total of 8,325 searches of the CPS Central Registry for a remarkable 0.7% rate for the 5-year time span. Program managers and home visitors can be proud of this achievement. This result strongly suggests that HFV is contributing successfully to breaking the cycle of violence.

PART IV: CONCLUSIONS

A. Program Outcomes

The outcome findings are organized within the framework of the Statewide Goals and Objectives adopted in June 1999. The major HFV evaluation domains include the following:

- Achieve positive pregnancy outcomes and maternal and child health outcomes.
- Promote optimal child development by screening for suspected delays, referring children for evaluations, and monitoring participation in treatment programs.
- Promote positive parent-child interaction and stimulating home environments that support child development.
- Prevent abuse and neglect.

1. Child Health

Overall, the results in this health domain, especially in the areas of children's and maternal health, are very encouraging.

- **Healthy Birth Weight:** Ninety percent of the babies born to the 1,857 prenatal enrollees FYs 2011-2015 were within the healthy birth weight range (i.e., weighed at least 2,500 grams or approximately 5½ pounds), surpassing the state criterion. The FY 2015 rate was similarly strong: 92% of infants born to the 1,115 active families were within the healthy birth weight range. The rate for the overall Virginia general population was 91.8%. These findings are noteworthy because these rates are virtually equivalent, despite the fact that HFV is working with a higher-risk population. HFV's overall level of performance (90%), as well as its performance during the most recent fiscal year (also 91%), represents a significant improvement compared with its FY 2011 77% statewide rate.

CHILD HEALTH OUTCOMES

•**Birth Weight** - Goal: 85% of prenatal enrollees will deliver babies weighing at least 2500 grams.

90% of all children were born with healthy birth weights from FY 2011-FY 2015.

For **FY 2015**, 92% of all active children were born with healthy birth weights.

•**Connection to and Continuation with Medical Care Providers:** Approximately 93% of the 4,728 births to mothers enrolled in Healthy Families programs using PIMS had a primary medical care provider within two months of enrollment. In addition, 94% of those children continued with health care providers after six months of participation in the program. On a positive note, the **FY 2015** connection rate rose to 94% and the continuation rate to 98%. Both the connection and continuation rates surpass the statewide evaluation criteria, demonstrating that HFV succeeds statewide in ensuring children have access to a physician and the medical care they need. The continuation rate for FY2015 was the highest ever attained.

CHILD HEALTH OUTCOMES (Continued)

•**Connection to Medical Care Providers** - Goal: 85% of participating children will have a medical provider at birth or within 2 months of birth.

93% of all children had a primary health care provider within two months of birth.

•**Continuation with a Medical Care Provider** - Goal: 80% of participating children with a medical provider will continue to receive services from the medical provider.

94% of all children continued to have medical care providers after six months.

The **FY 2015** connection rate was 94% and continuation rate was 98%.

•**Immunizations:** Age-appropriate immunization is one of the most important indicators of well-being for children. HFV has established a goal that 80% of all target children will receive all immunizations as recommended by the American Academy of Pediatrics and the Virginia Department of Health. Eighty-six percent of the 3,293 children enrolled in both PIMS and non-PIMS Healthy Families programs Fys 2011-2015 received 100% of their **16 scheduled** immunizations. **The immunization coverage rate was an impressive 90% for FY 2015.**

The U.S. Department of Health and Human Services (2013) estimated that the national base rate for children receiving the recommended series of **15 immunizations** was 77.7% in CY 2013. For a more direct comparison with HFV programs, the 2012 U.S. National Immunization Survey conducted by the Centers for Disease Control and Prevention estimated the 2013 vaccination completion rate was also 79.3% for the Virginia general population. HFV's performance (88%) surpasses the demanding statewide objective, exceeds the 2013 Virginia average of 79.3% for the general population, and also exceeds the Virginia Department of Health FY 2014 immunization rate of 68.2% (see VDH's Sentinel Report) for comparable high-risk families. Healthy Families programs can take pride in this level of performance. The HFV immunization coverage rate for **FY 2015** of 90% is impressive.

Scientific alert: Progress towards full immunization of young preschoolers has stalled and DECLINED since 2004, according to a Child Trends analysis of recently released national data from the Centers for Disease Control and Prevention (CDC&P). Examining the demanding 4:3:1:3:3:1 Series demonstrates that the national full immunization rate rose from 55.1% to 80.9% between 1995 and 2004. The rate has since stalled. The 2006 rate was 80.6%. The national rate actually declined over the last two years – the 2008 rate was 78.2%. In Virginia, the situation was similar but worse because there was even more of a decline. The 4:3:1:3:3:1 Series rates rose from 52.8% to 81.0% between 1995 and 2004. The

2006 rate was 81.5%. **The 2014 rate for Virginia was 79.3%**. This is a major decline in an indicator that many scientists view as a proxy for the overall health of our children.

4:3:1:3:3:1						
Vaccine Series	**1995**	**2004**	**2005**	**2006**	**2008**	**2014**
Virginia	52.8%	81.0%	85.0%	81.5%	73.2%	**79.3%**
U.S.	55.1%	80.9%	80.8%	80.6%	78.2%	**77.7%**

Importantly, during the same period, the immunization rates for HFV (based on families at high risk for poor outcomes) have not stalled; rather, they have continued to rise and the rate was 86% for the last five years – the same time period that Virginia declined. Of special significance is the 90% immunization coverage rate for **FY 2015** compared to the Virginia average of 79.3%.

CHILD HEALTH OUTCOMES (CONTINUED)

•**Immunization** - Goal: 80% of participating children will receive 100% of scheduled immunizations.

86% of all children received 100% of their 16 scheduled immunizations. (HFV's immunization rate was not only higher than the rate for similar high-risk families, but also substantially higher than the rate for the Virginia general population).

•**90% of 2,292 active children received 100% of their 16 scheduled immunizations during FY 2015.**

These positive child and maternal health findings complement the results emerging from other HFA programs nationally, which have also demonstrated improved health care status, service utilization, and high rates of immunization.

2. Maternal Health

HFV recently established statewide goals in the area of mothers' health to reduce closely-spaced births and delay/reduce repeat pregnancies. HFV has established the goal that 85% of teen mothers and 75% of non-teen mothers will have an interval of at least 24 months between the target child's birth and subsequent births. A meta-analysis conducted in 2006 (Conde-Agudelo, Rosas-Bermudez, & Kafury-Goeta, 2006) found that short (less than 6 months) inter-pregnancy intervals are associated with increased risk of adverse perinatal outcomes (i.e. pre-term birth, low birth weight, and small for gestational age).

A total of 760 mothers (46 teen and 716 non-teen) have been participating in the HFV programs for at least two years following the birth of their child, which represents the targeted 24-month interval specified for this objective. Forty-six (85%) of the 54 teen mothers have had no subsequent births as of this writing. A total of 8 teen mothers (15%) had a subsequent birth before the end of the targeted 24-month interval. This represents an overall 85% success rate, equaling the 85% criterion set for established programs. These findings are encouraging. They confirm that HFV is helping teens avoid closely-spaced pregnancies, thus allowing them to pursue education and other life goals.

Positively, 574 (80%) of the 716 non-teen mothers have had no subsequent births and 52 (7%) mothers had a subsequent birth after the 24-month targeted interval. This represents an overall statewide success rate of 87% with this group of older, non-teen mothers. A total of 91 mothers (13%) had subsequent births occurring before the target child had reached the age of 24 months. HFV programs' positive performances easily surpassed the statewide objective of 75% and represent continued success in this domain.

These findings suggest Healthy Families programs effectively helped women reduce closely-spaced and unintended pregnancies. Such delays in subsequent child birth are associated with improved

MATERNAL HEALTH OUTCOMES

•Birth Interval - Teens: Goal: 85% of teen mothers will have no subsequent births or will have an interval of at least 24 months between the target child's birth and subsequent births.

80% of teen mothers had no subsequent births. Five percent of teen mothers had a subsequent birth **after** the targeted 24-month interval. **This represents a 85% success rate statewide.**

•Birth Interval - Non-Teens: Goal: 75% of non-teen mothers will have no subsequent births or will have an interval of at least 24 months between the target child's birth and subsequent births.

574 of the 716 (80%) non-teen mothers had no subsequent births. Fifty-two (7%) had a subsequent birth after the targeted 24-month interval. **This represents a 87% success rate statewide.**

These delays in subsequent child birth are associated with higher educational attainment, improved child health, increased future job status, and decreased infant homicide.

child health, higher educational attainment, and increased future job status.

3. Child Development

All of the sites endorsed the objectives of monitoring child development by systematic developmental screening, referring those children with suspected delays to early intervention services for further assessment, and following up with referred children. In fact, these objectives are part of the *HFA Best Practice Standards*. Approximately 88% of the 2,615 children were appropriately screened (FY 2011-2015) for developmental delays and the FY 2015 rate was a slightly stronger 92%. While some programs previously experienced difficulty conducting semi-annual screenings, this overall performance of 88% represents a strong level of consistent performance across the past 5-year period and the 92% for FY 2015 represents a very positive level of attainment. Two hundred and seventeen children (8.5%) had suspected developmental delays. Seventy parents (32%) declined a referral for further services. Of the

remaining 147 children, 134 (91%) were referred for further developmental assessment. This level of performance surpassed the statewide evaluation criterion. Over the last five years, fewer than five percent of the children with suspected delays were not referred. Not making a referral was often attributable to parents leaving the program before the referral process was complete. Of the children referred for developmental assessment, 70 had confirmed delays, and programs ascertained that 61 (91%) of those children received appropriate developmental services. This strong level of performance has been maintained for the last five years.

CHILD DEVELOPMENT

•Developmental Screening - Goal: 90% of participating children will be screened for appropriate development semi-annually for the first three years and annually thereafter.

88% of the 2,615 eligible children were appropriately screened for suspected delays. In FY 2015, 92% of 1,930 children who were actively enrolled were appropriately screened..

•Referral to services - Goal: 90% of children with suspected developmental delays will be referred for further developmental assessment and services where appropriate.

91% of the 147 children with suspected delays were referred for further developmental assessment in FY 2015.

•Monitoring services - Goal: 100% of children with confirmed developmental delays will be monitored for the status of their connection with recommended services.

Of the 70 children with confirmed delays, 64 (91%) of those families were monitored for connection with appropriate developmental services in FY 2015.

Healthy Families programs succeeded in ensuring the referral of children with suspected delays to early intervention services and following children to ensure the receipt of services.

4. Parenting and the Home Environment

This important domain provides a cornerstone for the effects of HFV; therefore, the evaluation uses three highly regarded scientific measures, the Nursing Child Assessment Satellite Training

(NCAST), the Keys to Interactive Parenting Scale (KIPS), and the Home Observation for Measurement of the Environment (HOME) to assess this domain. Specifically, these measures examine parent-child interaction and the quantity and quality of the developmental stimulation that families provide children in their home environments. In addition, the HFV Statewide Evaluation collects information on the fathers' involvement with their children.

Of the 2,344 children who were old enough for an assessment of parent-child interaction, 2,134 (91%) had at least one NCAST or KIPS assessment completed. Of those 2,006 families, 94% of the assessments were within normal limits. During FY 2015, HFV's performance was similarly strong: 94% of the 1,666 active families with an NCAST/KIPS assessment were within normal limits. HFV's performance clearly exceeds the 85% evaluation criterion. These findings are encouraging and indicate that children are receiving positive maternal care-giving and establishing healthy attachments.

There were 2,690 families whose children were old enough for the HOME and 2,486 (92% of those families received one or more in-home assessments. Of those 2,486 families, 2,254 (91%) had home environments that were within normal limits. HFV's FY 2015 performance was slightly better; 95% of the 1,717 active families with an assessment had HOME environments that were within normal limits. This performance easily exceeded the statewide objective in this domain.

Overall, Healthy Families participants displayed high levels of sensitivity to their children's cues, solid understanding of their children's development, knowledge of alternative methods of discipline and less overall distress and rigidity than might be expected given their risk factors.

PARENT-CHILD INTERACTION AND THE HOME ENVIRONMENT

•Goal: 85% of participants will demonstrate positive parent-child interaction or show improvement.

94% of the 2,006 NCAST or KIPS assessments of parent-child interactions were within normal limits. In **FY 2015**, 94% of the NCAST assessments for 1,666 active families were within normal limits.

•Goal: 85% of participants will have optimal home environments to support child development or their home environments will show improvement.

91% of the 2,486 HOME assessments were within normal limits. During **FY 2015**, 95% of the HOME assessments for all 1,717 active families were within normal limits.

HFV's performance statewide exceeded the benchmarks established. Overall, Healthy Families participants displayed sensitivity to their children's cues, greater understanding of their children's development, greater knowledge of alternative methods of discipline, and less overall distress and rigidity.

5. Child Abuse and Neglect

Since the implementation of the Hampton Healthy Start program in FY 1993, the examination of rates of founded cases of child abuse and neglect for Healthy Families participants have been examined in a number of contexts. The six-year, random assignment study of Hampton Healthy Start indicated that the annual rate of founded cases never exceeded 1.5% (Galano & Huntington, 1999b). Additionally, Northern Virginia Family Services programs have consistently found rates of 1% or less and have had no founded cases in the preceding two fiscal years.

This year's report provides continuing strong evidence for the effectiveness of Healthy Families as a child maltreatment prevention program. In FY 2015, HFV was able to resume searches of the Virginia Child Protective Services Central Registry. HFV conducted 1,179 searches and 10 founded

cases were confirmed. This represents a rate of 0.8%. This 0.8% rate was consistent with those found for HFV during the last 4 years. Moreover, the fact there are so few perpetrators in a population where over 50% of enrolled mothers self report a childhood history of abuse strongly suggests that HFV is contributing successfully to its goal of breaking the cycle of violence.

Most importantly, HFV is preventing cases of child maltreatment. HFV conducted 12,500 searches over the past five years, using the scientifically derived 4.7% comparison estimate (*Federal Interagency Forum on Child and Family Studies,* 1997). We predict that there would be 587 founded cases of child maltreatment. Instead, the actual number of cases was 137, meaning that HFV prevented 450 founded cases of abuse and neglect. One way to understand these findings is to examine the impact of HFV for a single year. Across each of the past 5 years, the average number of cases prevented was 90. This indicates that the annual costs of child abuse and neglect were reduced by $709,678 and that the total lifetime cost was reduced by $18,901,080. At a time when healthcare spending accounts for 18% of Virginia's economy and is projected to increase because of preventable conditions, we cannot afford to ignore the value of prevention programs such as HFV.

Over 7,600 searches of the Child Protective Services Central Registry for families who participated in HFV in FY 2009 through FY 2011 detected a rate of founded cases of child abuse and neglect less than 1% in each of those years (0.9%, 0.8%, and 0.7% respectively). This is a remarkable accomplishment given that 50% of all participating mothers reported that they themselves had been abused as children.

Yet also in FY 2014, 47 children in Virginia – 35 under the age of 4 – died from child abuse and neglect. This number is significantly higher than the number of child fatalities reported each year from 2011-2013, (33, 38, and 33 respectively.) Our leaders in the General Assembly need to partner with the almost 100 localities that comprise HFV by taking action that will strengthen families and reduce

reliance on expensive systems of repair. Implementing these recommendations can further reduce child abuse and neglect, and improve the lives of children and families served by Healthy Families, saving both lives and scarce economic resources.

PART V. RECOMMENDATIONS

All Virginians should feel a sense of pride for the support our leaders in the General Assembly have provided to the citizens of the Commonwealth through their unwavering support of the Healthy Families initiative. Despite the difficult period of the recession starting in 2009, the General Assembly continued to provided financial support to help nurture and strengthen families through home visiting. Now, it is time to renew and enhance the legislators' partnership with the 75 localities that comprise HFV by taking action that will improve early family outcomes and reduce reliance on expensive systems of repairing preventible problems. Implementing these recommendations can further reduce child abuse and neglect, and improve the lives of children and families served by Healthy Families, saving both lives and scarce economic resources.

- **Continue to serve high-risk families *because prevention saves money.***

The National Human Services Assembly brief, "Home Visiting Strengthening Families by Promoting Parenting Success," presented information suggesting that home visiting may carry more benefits for high-risk families than low-risk ones. A cost-benefit analysis comparing low-risk to high-risk families indicated that the benefits were only slightly greater than the costs for low-risk families, however, the return for high-risk families was $5.7 to $1. *That translates to $43,320 in savings for every $7,600 invested to serve a HFV family for two years*. Healthy Families serves many families that have low incomes, low education levels, and non-English-speaking parents, and families headed by parents who are neither currently employed nor attending school. These high-risk families may enjoy the greatest long-term benefits and more of them should be included as important targets of HFV's intervention.

New York State's Healthy Families (HFNY) recently conducted a cost-benefit analysis. They estimated that if the state of New York had a record of preventing low birth weight in their highest risk population similar to HFNY's, the state would have averted 4,300 low birth weight deliveries and saved

$96.8 million in Medicaid expenditures. Reducing HFV's capacity to serve high-risk families will likely result in increased CPS reports and foster care placements with the associated program costs, which some communities are already experiencing.

- **Support the 5-Year Home Visiting Expansion Plan submitted by the Children's Cabinet to make evidence-based home visiting services available to more Virginia families while maintaining the current funding level of $4,285,501 for Healthy Families.**

Scaling up services for HFV's programs will yield significant savings by producing fewer low birth weight babies, less child maltreatment, fewer teen births, and fewer children not ready to learn. Currently, 31 of the 32 sites are serving less than 10% of the families who could benefit from the services.

Today, 9,066 families are served by 450 home visitors in 110 communities, meeting 7.5% of the statewide need, which is supported by $34 million in public/private investments. In 2017, the new plan would serve 10,000 families by 500 home visitors, meeting 8% of the need and representing 4.5 million in new dollars. In 2021, 17,000 families would be served by 850 home visitors, meeting 15% of the need and requiring $8 million in new allocations. The new biennial investment for 2017-2018 would be $15.75 million, and the new biennial investment for 2019-2020 would be $21.5 million. Healthy Families TA/QA staff should work with the communities in which HFV sites exist to ensure that home visitors receive optimal training and evidence-based curricula.

Healthy Families works. For the last three years in the Commonwealth, the Healthy Family Virginia (HFV) statewide initiative achieved a very high level of success in preventing child abuse and neglect.The founded rate for FY 2015 was 0.6% based on 1,273 searches, FY 2014 was 0.7% based on 1,260 searches, and the previous year, FY 2013, the statewide rate of confirmed cases of child abuse and neglect was 0.8% based on 863 searches.

In addition, between 2007 and 2012, Galano and Huntington (2012) conducted 12,500 searches of the Child Protective Services (CPS) Central Registry. Using a scientifically derived 4.7% incidence estimate[4], we predict that there would have been 587 founded cases of child maltreatment among Healthy Families participants. The actual number of cases was 137, meaning that **HFV prevented 450 founded cases of abuse and neglect.**

One way to understand these findings is to examine the impact of HFV for a single year. Across each of the past 5 years, the average number of cases prevented was 90. This indicates that the annual costs of child abuse and neglect were reduced by $709,678 and that the total lifetime cost was reduced by $18,901,080. At a time when healthcare spending accounts for 18% of Virginia's economy and is projected to increase because of preventable conditions, we cannot afford to ignore the value of prevention programs such as HFV.

Moreover, never before have we known as much about the high costs of failing to preventing child abuse and neglect. A Pew Center on the States economic impact analysis of child abuse and neglect concluded that the cost to the U.S. is a staggering $258 million per day, exacting a toll on the educational, health and mental health, and criminal justice arenas. Preventing child abuse and neglect is the most logical way to reduce those costs. Preventing a single incident of child abuse and neglect not only averts the immediate cost of treatment and prosecution, but also long-term criminality, mental health, and health problems.

The Continuing Need. Despite HFV's strong record of prevention with its participants, abuse and neglect, as well as the fatalities which can result, continue to be problems for the families and children of the Commonwealth. **Forty-eight** children in Virginia, **38** of whom were younger than 4, died

[4] The 4.7% comparison standard was based on a special investigation of the number of maltreated children and rates of child abuse and neglect by family structure, common income, and gender. The study was conducted by the *Federal Interagency Forum on Child and Family Studies* (1997), using the Third National Incidence Study of Child Abuse and Neglect.

from child abuse and neglect in FY 2014. This number is significantly higher than the number of child fatalities reported each year from 2011-2013, (32, 38, and 36 respectively–an average of 35.3) and similar to the 47 in 2014. This highlights the insufficiency of home visiting programs reaching only 7.5% of the families in need statewide, which leads to the next recommendation.

- **Provide full-time funding for all of the Technical Assistance/Quality Assurance staff to foster high-quality programs that are capable of producing strong outcomes.**

A November 2007 Family Strengthening Policy Center brief (National Human Services Assembly) distinguished between **high-quality programs** that are capable of producing strong outcomes and lower-quality programs that do not consistently produce positive child and family outcomes. The authors made recommendations to state and local governments about the need for a full complement of TA/QA staff to ensure that all HFV sites are high-quality programs.

High quality programs engage in rigorous quality assurance and staff supervision and place an emphasis on ensuring high-fidelity of implementation. HFV has maintained a serious commitment to technical assistance/quality assurance. Staff have been assigned to work with program directors to monitor performance and modify programs to ensure that they are consistent with HFA accreditation standards and best practices. High-quality programs are able to engage families successfully as measured by intensity of visits and duration of services (as HFV has done). These characteristics require key staff positions and appropriate levels of funding. Full funding for all four TA/QA staff positions and the HFV Director position should be restored.

- **Strengthen families by connecting and reconnecting fathers with their children to promote safe, stable, and successful families.**

Involved and responsible fathers who are present in the lives of their children contribute to improved outcomes for children, families, and the entire community. Implement more activities aimed at engaging and retaining fathers. Assess the success of these interventions by creating a measurement data system in PIMS to track fathers' engagement and retention. Also assess the contribution that father involvement and/or living with their familes makes to reducing non-marital births, to increasing marriages, and to increasing positive economic and child and family outcomes.

- **Continue to use evidence-based curricula approved by HFA for parent education. PCAV/HFV, should continue to ensure training is provided for new staff and facilitate full implementation of evidence-informed curricula.**

The HFA accreditation standards have approved four curricula including Growing Great Kids (GGK), The Nurturing Parenting Program, Parents As Teachers (PAT), and Partners for a Healthy Baby. GGK was specifically designed to be utilized in Healthy Families home visiting programs. It is a research-based curriculum designed to foster optimal parenting skills, strengthen the parent-child relationship, and strengthen the role of the home visitor, that has the potential to improve services for Virginia families. PAT is a nationally recognized, award-winning curriculum with demonstrated intermediate and long-term impacts on children and their parents, which has been widely utilized by home visiting programs, and has been shown to be cost-effective. Focusing on fidelity of implementation will ensure that short-term, intermediate, and long-term objectives are realized. HFV should utilize its full cadre of TA/QA staff to more effectively utilize its most important resources: the home visitor and the home visit. Having additional funds to support the training of trainers for the GGK curriculum in Virginia would be a valuable resource for our programs.

- **Support the Virginia Pay for Success Initiative in order to finance proven productive early childhood programs that will increase life outlook for Virginia's children, strengthen workforce development, and reduce taxpayer burdens.**

Cultivate a diverse network of supporters including the Governor's Office, State agencies, the Virginia Chamber, philanthropic foundations, service providers, academic institutions, and managed care organizations. Continue to work with Third Sector Capital Partners and the Pay For Success Council to model stakeholder returns by building on the results of a 2003 study concerning prenatal home visiting to at risk mothers and its measurable reduction of infant healthcare costs.

Work with the Pay For Success Council to identify initial social impact target issue areas in prenatal healthcare, early childhood health and development that can be used to justify Pay for Success (PFS) for social impact financing model and participate in and support the PFS Feasibility Study.

- **Continue HFV's support for the HFA accreditation process by participating as a State System in FY 2016.**

In 2007 HFV staff and administrators attained the goal of having 100% of all eligible sites fully accredited. During the last eight years, HFV has continued to train and deploy regionally-based technical assistance/quality assurance (TA/QA) staff. With their assistance, each Virginia site individually completed the rigorous national accreditation process, and in the following accreditation round, HFV and the sites became fully accredited at the State System level. Virginia is one of the few states that can cite this accomplishment. Successfully completing the process to be accredited as a State System has a number of benefits, including; greater ability to demonstrate fidelity of implementation across the entire range of Healthy Families sites in Virginia; a consistent, standardized process for developing and maintaining policies and procedures; and greater investment in all 32 sites' quality of services and attainment of statewide goals and objectives.

In FY2015, HFV underwent their second accreditation round as a State System. This process is continuing into FY2016, with continuing site visits and recommendations from the HFA Accreditation Panel. We, the Evaluators, are certain that the HFV system will again come through with flying colors.

PART VI. REFERENCES

Afifi, T. O., & Macmillan, H. L. (2011). Resilience following child maltreatment: A review of protective factors. *Canadian Journal of Psychiatry 56*(5): 266-272.

Ainsworth, M. D. S. (1993). Attachment as related to the mother-infant interaction. In C. Rovee-Colier & L. P. Lipsett (Eds.), Advances in infancy research, 8. Norwood, NJ: Ablex.

Ammerman, R.T., Putnam, F.W., Mekibib, A., Chen, L., Holleb, L.J., Stevens, J., Short, J.A., & Van Ginkel, J.B. (2009). Changes in depressive symptoms in first time mothers in home visitation. Child Abuse and Neglect. 33, 127-138.

American Academy of Pediatrics. (2010). Unemployment linked with child maltreatment. ScienceDaily. Retrieved April 15, 2014 from www.sciencedaily.com/releases/2010/10/101003081452.htm.

Annie E. Casey Foundation. (2004). 2004 Kids Count Data Book: The State Profiles of Child Well-being. Annie E. Casey Foundation, Baltimore, MD.

Barnard, K. (1994). NCAST Teaching Scale. NCAST, University of Washington.

Barnard, K. (1978). NCAST Feeding & Teaching Scales. NCAST, University of Washington.

Bavolek, S. J., & Comstock, C. (1985). Nurturing Program for parents and children: Program implementation manual, 2. Park City, UT: Family Development Resources, Inc.

Brand, S.R., Engel, S.M., Canfield, R.L., and Yehuda, R. (2006). The Effect of Mternal PTSD Following in Utero Trauma Exposure on Behavior and Temperament in the 9-month-Old Infant. Annals of the New York Academy of Science 1071: 454-458..

Breaky, G., & Pratt, B. (1991). Healthy growth for Hawaii's "Healthy Start": Toward a systematic statewide approach to the prevention of child abuse and neglect. Zero to Three, 11(4), 16-22.

Brickhouse, T.H., Haldiman, R.R. & Evani, B. (2013). The impact of a home visiting program on children's utilization of dental services. *Pediatrics 132*, S140-S146.

Bright Futures. (2002). Bright Futures: Guidelines for health supervision of infants, children, and adolescents (2nd ed., rev.) Edited by Morris Green and Judith S. Palfrey. Arlington, VA: National Center for Education in Maternal and Child Health. http://www.brightfutures.org/bf2/pdf/index.html

Caldwell, B. & Bradley, R. (1984). Home observation for measurement of the environment. Little Rock, AR: University of Arkansas.

Carnegie Task Force on Meeting the Needs of Young Children (1994). Starting points: Meeting the needs of our youngest children. The report of the Carnegie Task Force on Meeting the Needs of Young Children. New York: Carnegie Corporation of New York.

Center on the Developing Child at Harvard University (2014). A Decade of Science Informing Policy: The Story of the National Scientific Council on the Developing Child. http://www.developingchild.net

Centers for Disease Control and Prevention, The National Center for Injury Prevention and Control (2007) *The Effects of Childhood Stress on Health Across the Lifespan*. Available from http://www.cdc.gov/ncipc/pub-res/pdf.

Centers for Disease Control and Prevention, National Immunization Program (2007). *MIS data, tables, Jan-Dec 06*. Available from http://www.cdc.gov/vaccines/stats-surv/nis/data/tables_2006.htm

Center of Urban Poverty and Social Change (2002, September) Period Life Table Estimates of the Prevalence and Age-Specific Hazard Rates of Child Maltreatment in Recent Birth Cohorts in Cuyahoga County. (Number 2002-09-01). Cleveland, OH: Sabol, W. J., Polousky, E. K., & Billing, A.

Child Trends (2007). New analysis finds early childhood vaccination rates have stalled. Child Trends Washington D.C. Issued November 14, 2007.

Child Welfare League of America, (January, 2006). Issue brief on child abuse and neglect. Washington, DC: Author.

Cicchetti, D., & Lynch, M. (1995). Failures in the expectable environment and their impact on individual development. In D. Cicchetti & D.J. Cohen (Eds.), Developmental Psychopathology, 2, 32-71. New York: John Wiley & Sons.

Cicchetti, D., & Toth, S. L. (2000) Child maltreatment in the early years of life. In J.D. Osofsky & H.E. Fitzgerald (Eds.), WAIMH Handbook of Infant Mental Health, 4, 255-294. New York: Cambridge University Press.

Cicchetti, D. (2007). Intervention and policy implications of research on neurobiological functioning in maltreated children. In L.J. Aber, S.J. Bishop-Josef, S.M. Jones, K. Taffe, & D.A. Phillips (Eds.), *Child development and social policy: Knowledge for action*. Washington, DC: American Psychological Association.

Cicchetti, D. & Valentino, K. (2006). An ecological-transactional perspective on child

maltreatment: Failure of the average expectable environment and its influence on child development. In D. Cicchetti & D.J. Cohen (Eds.), *Developmental psychopathology*. Hoboken, NJ: Wiley.

Conde-Agudelo, A., Rosas-Bermudez, A., & Kafury-Goeta, A. (2006). Birth spacing and adverse perinatal outcomes. *Journal of the American medical Association*; 296 (8), 929-932.

Culp & Schellenbach (2007). HFA Research Update. In A.M. Culp & C.J. Schellenbach. Practice, Research and Policy Agendas for Healthy Families America: A Program Designed to Prevent Child Maltreatment. Child and Family Policy and Practice Review, 3 (2), 15-19.

Crume, T. L., DiGuieseppi, C., Byers, T., Sirotnak, A., & Garrett, C. (2002). Underascertainment of child maltreatment fatalities by death certificates, 1990-1998. Pediatrics, 110(2).

Daro, D., & Harding, K. (1999). Healthy Families America: Using research to enhance practice. The Future of Children, The David and Lucille Packard Foundation, Los Altos, CA.

Daro, D., Mc Curdy, K., Rauh, V., Nelson, C., & Brown, L. (1999). The engagement and retention of participants and family support programs: a multi-level approach. Four year grant proposal submitted to David and Lucille Packard Foundation, Los Altos, CA.

Davies-Netzley, S., Herbert, M., & Hugh, R. (1996). Childhood Abuse as a Precursor to Homelessness for Homeless Women With Severe Mental Illness. Rockville, MD: National Institute of Mental Health.

Department of Health and Human Services (2001). Youth violence: A report by the Surgeon General. Washington D.C.

Department of Social Services, Child Protective Services (2004). Richmond, Virginia.

Department of Social Services, Child Protective Services (2006). http://www.dss.virginia.gov/geninfo/reports/children/cps.cgi. Richmond, Virginia.

Department of Social Services, Child Protective Services (2007). http://www.dss.virginia.gov/geninfo/reports/children/cps.cgi. Richmond, Virginia.

Dodge, K.A., Goodman, W.B., Murphy, R.A., O'Donnell, K., & Sato, J. (2013). Randomized controlled trial of universal postnatal nurse home visiting: Impact on emergency care. *Pediatrics, 132*, S140-S146.

DuMont, K., Mitchell-Herzfeild, S., Greene, R., Lee, E., Lowenfels, A., Rodriguez, M., and Dorabawil, V., (2008). Healthy Families New York (HFNY) randomized trail: Effects on early child abuse and neglect. Child Abuse & Neglect, 32, 295-315.

Duncan, R. D., Saunders, B. E., Kilpatrick, D. G., Hanson, R. F., & Resnick, H. S. (1996). Childhood Physical Assault as a Risk Factor for PTSD, Depression, and Substance Abuse: Findings from a National Survey. American Journal of Orthopsychiatry. Washington, DC: National Institute on Drug Abuse.

Edwards VJ, Holden GW, Anda RF, Felitti VJ (2003).. Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: results from the Adverse Childhood Experiences (ACE) Study. American Journal of Psychiatry;160(8):1453–60.

Fagan, J. (2015). Fathers and Healthy Child Development: Evidence from Research. Fifth National Summit on Quality in Home Visiting Programs.

Family and Work Institute. (1997). The new brain research and your child's healthy development. I Am Your Child Foundation, Beverly Hills, CA.

Federal Interagency Forum on Child and Family Statistics. (1997). America's children: Key national indicators of well-being. Washington, DC: U.S. Government Printing Office.

Felitti VJ. (2002). The relationship between adverse childhood experiences and adult health: turning gold into lead. *The Permanente Journal*;6:44–47.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. The Adverse Childhood Experiences (ACE) Study. American Journal of Preventive Medicine.

Fourth National Incidence Study of Child Abuse and Neglect (NIS–4) Report to Congress Executive Summary

Galano, J. (2008) (Ed). The Healthy Families America Initiative: Integrating Research, Theory and Practice. Binghamton, NY: The Haworth Press.

Galano, J., & Huntington, L. (2008). Healthy Families Virginia, FY 2004-2008: Statewide

Evaluation Report. Prepared for Prevent Child Abuse Virginia, The Applied Social Psychology Research Institute, The College of William & Mary, Williamsburg, VA.

Galano, J., & Huntington, L. (2007). Healthy Families Virginia, FY 2003-2007: Statewide Evaluation Report. Prepared for Prevent Child Abuse Virginia, The Applied Social Psychology Research Institute, The College of William & Mary, Williamsburg, VA.

Galano, J. & Huntington, L. (2007). 2007 Healthy Families Partnership Benchmark Study: Measuring Community-Wide Impact. Prepared by the Applied Social Psychology Research Institute, College of William and Mary, Williamsburg, VA.

Galano, J., & Huntington, L. (2006). Healthy Families Virginia, FY 2002-2006: Statewide Evaluation Report. Prepared for Prevent Child Abuse Virginia, The Applied Social Psychology Research Institute, The College of William & Mary, Williamsburg, VA.

Galano, J., & Huntington, L. (2005). Healthy Families Virginia, FY 2001-2005: Statewide Evaluation Report. Prepared for Prevent Child Abuse Virginia, The Applied Social Psychology Research Institute, The College of William & Mary, Williamsburg, VA.

Galano, J., & Huntington, L. (2004). Healthy Families Virginia, FY 2000-2004: Statewide Evaluation Report. Prepared for Prevent Child Abuse Virginia, The Applied Social Psychology Research Institute, The College of William & Mary, Williamsburg, VA.

Galano, J., & Huntington, L. (2003). Healthy Families Virginia, FY 2000-2003: Statewide Evaluation Report. Prepared for Prevent Child Abuse Virginia, The Applied Social Psychology Research Institute, The College of William & Mary, Williamsburg, VA.

Galano, J., & Huntington, L. (2002). Healthy Families Virginia, FY 2002: Statewide Evaluation Report. Prepared for Prevent Child Abuse Virginia, The Applied Social

Psychology Research Institute, The College of William & Mary, Williamsburg, VA.

Galano, J., & Huntington, L. (2001). Healthy Families Virginia, FY 2001: Statewide Evaluation Report. Prepared for Prevent Child Abuse Virginia, The Applied Social Psychology Research Institute, The College of William & Mary, Williamsburg, VA.

Galano, J., & Huntington, L. (2000). Healthy Families Virginia, FY 2000: Statewide Evaluation Report. Prepared for Prevent Child Abuse Virginia, The Applied Social Psychology Research Institute, The College of William & Mary, Williamsburg, VA.

Galano, J., & Huntington, L. (1999a). Healthy Families Virginia, FY 1999: Statewide Evaluation Report. Prepared for Prevent Child Abuse Virginia, The Applied Social Psychology Research Institute, The College of William & Mary, Williamsburg, VA.

Galano, J., & Huntington, L. (1999b). Evaluation of the Hampton, Virginia, Healthy Families Partnership: 1992-1998. Center for Public Policy Research, The Thomas Jefferson Program in Public Policy, The College of William and Mary, Williamsburg, VA.

Galobardes, B., Smith, G. D., & Lynch, J. W. (2006). Systematic review of the influence of childhood socioeconomic circumstances on risk for cardiovascular disease in adulthood. *Annals of Epidemiology, 16*, 91-104.

Gelles, Richard J., & Perlman, Staci (2012). Estimated Annual Cost of Child Abuse and Neglect. Chicago IL: Prevent Child Abuse America, available at https://www.preventchildabusenc.org/assets/preventchildabusenc/files/cms/100/1299.pdf

Gomby, D. S., Culoss, P. L., & Behrman, R. E. (1999). The Future of Children. Home visiting: Recent program evaluations– Analysis and recommendations, 9: 4-26. The

David and Lucile Packard Foundation.

Goyal, N.K., Hall, E.S., Meinzen-Durr, J.K., Kahn, R.S., Short, J.A., Van Ginkel, J.B., & Ammerman, R.T. (2013). Dosage effect of prenatal home visiting on pregnancy outcomes in at-risk, first-time mothers. *Pediatrics, 132*, S118-S125.

Green, A. H., Voeller, K.,Gaines, R.W., & Kulsie, J. (1981). Neurological impairment in maltreated children, Child Abuse and Neglect 5:129-134.

Hahn, R. A., Bilukha, O. O., Crosby, A., Fullilove, M. T., Liberman, A., Moscicki, E. K., ... & Briss, P. (2003). First reports evaluating the effectiveness of strategies for preventing violence: early childhood home visitation. Findings from the Task Force on Community Preventive Services. *MMWR. Recommendations and reports: Morbidity and mortality weekly report. Recommendations and reports/Centers for Disease Control*, *52*(RR-14), 1-9.

Harding, K., Galano, J., Martin, J. B., Huntington, L., Schellenbach, C. J. (2008). Healthy Families America Outcomes: Emerging Research Findings and Implications for the Field. *Journal of Prevention and Intervention in the Community*.Source: Infant Mortality Statistics from the 2005 Period Linked Birth/Infant Death Data Set *NVSR* 2008;57(2)

Institute of Medicine. (1985). Preventing low birth weight. Washington, DC: National Academy Press.

Institute of Medicine & National Research Council of the National Academy of Sciences. (2013). New directions in child abuse and neglect research. Committee on Child Maltreatment Research, Policy, and Practice for the Next Decade: Phase II. National

Academy Press: DC.

Institute of Medicine & National Research Council of the National Academy of Sciences. (2014). *New directions in child abuse and neglect research*. Washington, DC: The National Academies Press.

IOM (Institute of Medicine) and NRC (National Research Council). 2014.

Johnston, L.D., O'Malley, P.M., Bachman J.G., Schulenberg J.E. (2003) Monitoring the Future: National Results on Adolescent Drug Use -- Overview of Key Findings. University of Michigan Institute for Social Research, Ann Arbor, MI.

Karoly, L. A., Greenwood, P. W., Everingham, S. S., Hoube, J., Kilburn, M. R., Rydell, C.P., Sander, M. & Chiesa, J. (1998). Investing in our children: What we know and don't know about the costs and benefits of early childhood interventions. Santa Monica, CA: The RAND Corporation.

Karoly, L. A., Greenwood, P. W., Rydell, C. P., Chiesa, J., Everingham, S. S., Kilburn, M. R., Hoube, J., & Sander, M. (1998). Investing in our children: What we know and don't know about the costs and benefits of early childhood interventions. Santa Monica, CA: The RAND Corporation.

Kellermann, N. P. F. (2000). Psychopathology in children of Holocaust survivors: A review of the research literature. Israel Journal of Psychiatry.

Kelly, B. T., Thornberry, T. P., & Smith, C. A. (1997). In the Wake of Childhood Maltreatment. Juvenile Justice Bulletin. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

Kinard, E. M. (1979). The psychological consequences of abuse for the child. Journal of Social Issues.

Kitzman, H., Olds, D., Henderson, C. R. Jr., Hanks, C., Cole, R., Tatelbaum, R., McConnochie, K. M., Sidora, K., Luckey, D. W., Shaver, D., Engelhardt, K., James, D., & Barnard, K. (1997). Effects of prenatal and infancy home visiting by nurses in pregnancy outcomes, childhood injuries, and repeated childbearing. Journal of the American Medical Association, 278: 644-652.

Kline, D. F. (1977). The consequences of neglected cases. In A. M. Thomas, Children Alone: What Can Be Done About Abuse and Neglect. Reston, VA: Council for Exceptional Children.

Kolko, D. J. (1996). Child physical abuse. J. Briere & L. Berliner (Eds.), The APSAC handbook on child maltreatment, 21-50. Thousand Oaks, CA: Sage Productions, Inc.

Lamb ME (ed.). The role of the father in child development, 4th edition. Hoboken, NJ: John Wiley & Sons, Inc. 2004

Lester, B.M., Marsit, C.J., Bromer, C. (2014). Behavioral Epigenetics and the Developmental Origins of Child Mental Health Disorders, Infant and Early Childhood Mental Health: Core Conceptions and Clinical Practive. Edited by Brandt, K., Perry, B.D. Seligman, S., Tonick, E.

Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services. A Healthy start: Begin before baby's

born. Accessed September 27, 2005. http://www.mchb.hrsa.gov/programs/womeninfants/prenatal.htm

Martin, H. P., & Rodeheffer, M. A. (1980). The Psychological Impact of Abuse in Children. In: G. J. Williams. Traumatic Abuse and Neglect of Children at Home. Johns Hopkins University Press, Baltimore, MD.

Mathews, T. J, & MacDorman, M. F. (2008). Infant Mortality Statistics from the 2005 Period Linked Birth/Infant Death Data Set. National Vital Statistics Reports. Centers for Disease Control and Prevention, July, 2008.

Merrick, M.T., Leeb, R.T., and Lee, R.D. (2013). Examining the Role of Safe, Stable, and Nurturing Relationships in the Intergenerational Continuity of Child Maltreatment–Introduction to the Special Issue. Journal of Adolescent Health 1-4.

Miller, C. (2013, September 23). How Trauma Changes Genes (and How We Can Change Them Back.) Child Mind Institute. Retrieved April 25, 2016.

Mitchel, L & Cohn-Donnelly, A. (1993). Healthy Families America: building a national system. The APSAC Advisor, 6(4), 9-27.

Mitchell-Herzfeld, S., Izzo, C., Greene, R., Lee, E., & Lowenfels, A. (2005). Evaluation of Healthy Families New York (HFNY): First Year Program Impacts, Rensselaer, N.Y.: New York State Office of Children and Family Services, Bureau of Evaluation and Research, Albany, N.Y.: Center for Human Services Research, University at Albany, February 2005 available at http://www.ocfs.state.ny.us/main/prevention/assets/HFNY_FirstYearProgramImpacts.pdf as of January 2006).

Morgan, S. R. (1976). The Battered child in the classroom. Journal of Pediatric Psychology.

Myers-Walls, J. A., Elicker, M., & Baydyk, J. (1998) Which families stay and which ones

leave an early home visiting program? Healthy Families America Research Network Newsletter. Spring National Committee to Prevent Child Abuse, Chicago, IL.

National Committee to Prevent Child Abuse (1996). Implementation Planning: Family Assessment Services and Home Visitor Services. National Committee to Prevent Child Abuse: Chicago, IL.

National Council on Crime and Delinquency (1990). Juveniles Taken Into Custody.

National Immunization Survey [online data file] (2004). Atlanta, GA: National Immunization Program and the National Center for Health Statistics, Centers for Disease Control and Prevention.

National Immunization Survey [online data file] (2005). Atlanta, GA: National Immunization Program and the National Center for Health Statistics, Centers for Disease Control and Prevention.

National Immunization Survey [online data file] (2006). Atlanta, GA: National Immunization Program and the National Center for Health Statistics, Centers for Disease Control and Prevention.

National Research Council, (1993). Understanding child abuse and neglect. Panel on the understanding and control of violent behavior. A. J. Reiss, Jr., & J. A. Roth (Eds.), Washington, D.C.: National Academy Press.

National Research Council and Institute of Medicine, (2000). From neurons to neighborhoods: the science of early childhood development. Committee on Integrating Science of Early Childhood Development. In J. P. Shonkoff & D. A. Phillips (Eds). Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

National Scientific Council on the Developing Child. Cambridge: The Council: 2005 [cited

2007 April 9]. Excessive stress disrupts the architecture of the developing brain. Working Paper No. 3. Available from: http://www.developingchild.net/pubs/wp/Stress_Disrupts_Architecture_Developing_Brain.pdf

National Scientific Council on the Developing Child (2010). Early Experiences Can Alter Gene Expressions and Affect Long-Term Development: Working Paper No. 10. http://www.developingchild.net

Olds, D. (1997). The prenatal/early infancy project: Fifteen years later. In G. W. Albee & T. P. Gullotta (Eds.). Primary Prevention Works, 41-67. Thousand Oaks, CA., Sage.

Olds, D.L. (2007). Preventing crime with prenatal and infancy support of parents: The nurse-family partnership. *Victims & Offenders: Special Issue on Early Intervention, 2,* 205-225.

Olds, D. L., Eckenrode, J., Henderson, C. R., Kitzman, H., Powers, J., Cole, R., Sidora, K., Morris, P., Pettit, L. M., & Luckey, D. (1997). Long-term effects of home visitation on maternal life course and child abuse and neglect: Fifteen-year follow-up of a randomized trial. Journal of the American Medical Association, 278: 637-643.

Olds, D. L, & Kitzman, H., Cole, R., & Robinson, J. (1997). Theoretical foundations of a program of home visitation for pregnant women and parents of young children. Journal of Community Psychology, 25: 9-25.

Olds, D. L., Henderson, C. R., Chamberlin, R., & Tatelbaum, R. (1996). Preventing child abuse and neglect: A randomized trial of nurse home visitation. Pediatrics, 78: 65-78.

Olds, D. L., Henderson, C. R., & Kitzman, H. (1994). Does prenatal and early infancy nurse home-visitation have enduring effects on qualities of parental care-giving and child health at 25-50 months of life? Pediatrics, 93: 89-98.

Olds, D. L., Henderson, C. R. Jr., Kitzman, H. J., Eckenrode, J. J., Cole, R. E., & Tatelbeaum, R. C.(1999). Prenatal and infancy home visitation by nurses: recent findings. The Future of Children, 9: 47-65.

Olds, D. L, & Kitzman, H. (1990). Can home visitation improve the health of women and children at environmental risk? Pediatrics, 86: 108-116.

Olds, D. L., & Kitzman, H. (1993) Review of research on home visiting for pregnant women and parents of young children. The Future of Children, 3: 53-92.

Palkovitz R. (2002). Chapter 5: Involved fathering and child development: Advancing our understanding of good fathering. In: Tamis-LeMonda CS, Cabrera NJ (eds.). Handbook of father

PCA America. (2002). Healthy families America: A program that works. PCA America @ www.healthyfamiliesamerica.org

PCA America. (2007). Total Estimated Cost of Child Abuse and Neglect in the United States. Wang, C-T. & Holton, J. Funded by the Pew Charitable Trusts.

Paulozzi, L., & Sells, M. (2002). Variation in homicide risk during infancy-United States, 1989-1998. Morbidity and Mortality Weekly Report, 51 (09): 197-189. Centers for Disease Control and Prevention. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5109a3.htm.

Pembrey, M., Saffery, R., Bygren, L.O., et. al. (2014). Human transgenerational responses to early-life experience: potential impact on development, health and biomedical research. Journal of Medical Genetics, 51:563-572.

Perry, B.D. (1999). Memories of fear: How the brain stores and retrieves psychological states, feelings, behaviours, and thoughts from traumatic events. In J. Goodwin & R. Attias (Eds.) Images of the Body in trauma. New York: Basic Books.

Perry, B. D., & Pollard, R. (1998). Homeostasis, stress, trauma, and adaptation: A neurodevelopmental view of childhood trauma. Child and Adolescent Psychiatric Clinics of North America, 7: 33-51.

Perry, B. D., & Pollard, D. (1997). Altered brain development following global neglect in early childhood. Society For Neuroscience: Proceedings from Annual Meeting, New Orleans.

Prevent Child Abuse America. (2005). Healthy Families America: 2005 Annual Profile of Program Sites. Chicago, IL: Prevent Child Abuse America.

Prevent Child Abuse America. (2002). Healthy Families America: A program that works. Chicago, IL: Healthy Families America, Prevent Child Abuse America.

Prevent Child Abuse America. (2003). Healthy Families America: 2003 Annual Profile of Program Sites. Chicago, IL: Prevent Child Abuse America.

Prevent Child Abuse Virginia. (1999). Child Abuse Prevention Month Fact Sheet. Richmond, VA: Prevent Child Abuse Virginia.

Radcliffe, J., Schwarz, D., & Zhao, H. on behalf of the MOM program. (2013). The MOM program: Home visiting in partnership with pediatric care. *Pediatrics, 132*, S153-S159).

Rosenberg, J. & Wilcox, W. (2006a). The importance of fathers in the healthy development of children. The Presence of Fathers as a Protective Factor. Washington, DC, The Child Welfare Information Gateway.

Rosenberg, J. & Wilcox, W. (2006b). The importance of fathers in the healthy development of children. Perpetrators of Child Maltreatment. Washington, DC, The Child Welfare Information Gateway.

Setty-Venugopal, V., & Upadhyay, U. D. (2002). *Birth Spacing: Three to Five Saves Lives*. Population Reports, Series L, No. 13. Baltimore, Johns Hopkins Bloomberg School of Public Health, Population Information Program.

Snyder, H. N., & Sickmund, M. (1999). Juvenile Offenders and Victims. 1999 *National Report* (NJC 178257). Washington, DC: Office of Juvenile Justice & Delinquency Prevention.

Task Force on Community Preventive Services. (2002). Guide to Community Preventive Services. Atlanta, GA: Centers for Disease Control and Prevention. (http://www.thecommunity guide.org)

Thompson, R. A., & Wyatt, J. M. (1999). Current research on child maltreatment: Implications for educators. Educational Psychology Review, 8:163-182.

Tseng, A., Barry, K., & Labiberte, T. (2015) Resilence in Maltreated Children. Practice Notes Issue no. 25.

U.S. Advisory Board on Child Abuse and Neglect. (1991). A Nation's Shame: Fatal Child Abuse and Neglect in the United States . Washington, DC: U.S. Department of Heath and Human Services.

U.S. Advisory Board on Child Abuse and Neglect. (1995). Creating Caring Communities:

Blueprint for an Effective Federal Policy on Child Abuse Neglect. Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (2000). Healthy People 2010 (Conference Edition, in Two Volumes). Washington, DC: U.S. Department of Health and Human Services.

U.S. Department of Health and Human Services. (2004). Healthy People 2010 (Online Database). Washington, DC: U.S. Department of Health and Human Services.

U.S. Department of Health and Human Services. (2004). Child Maltreatment 2002. Washington, DC: U.S. Government Printing Office, 2004.

U.S. Department of Health and Human Services. (2009). Child Maltreatment 2007. Washington, DC: U.S. Government Printing Office, 2009. This report is available at: http://www.acf.hhs.gov/programs/cb/pubs/cm07/cm07.pdf

U.S. Department of Health and Human Services. (2008). Child Maltreatment 2006. Washington, DC: U.S. Government Printing Office, 2008. This report is available at: http://www.acf.hhs.gov/programs/cb/pubs/cm06/cm06.pdf

U.S. Department of Health and Human Services. (2010). Fourth National Incidence Study of Child Abuse and Neglect (NIS–4) Report to Congress Executive Summary

Washington,

DC: U.S. Government Printing Office. This report is available at: http://www.acf.hhs.gov/programs/opre/abuse_neglect/natl_incid/nis4_report_exec_summ_pdf_jan2010.pdf

U.S. Department of Health and Human Services. (2001). Youth Violence: A Report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Injury Prevention

and Control; Substance Abuse and Mental Health Services Administration, Center for Mental Health Service; and National Institutes of Health, National Institute of Mental Health.

U.S. Department of Health and Human Services, Children's Bureau (1996). Child Maltreatment 1996: Reports from the States to the National Child Abuse and Neglect System. Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services, (2013). Preventing Child Maltreatment and Promoting Well-Being: A Network for Action. Administration on Children Youth and Families, Administration for Children and Families, Washington, D.C.

Virginia Department of Health. (2001). Healthy Virginians 2010. Virginia Department of Health, Richmond, VA. (www.vdh.state.va.us/hv2010/index.html).

Virginia Department of Health. (2009). 2008 Sentinel Report: Immunization Coverage for Public Sector Clients. Division of Immunization, Virginia Department of Health, Richmond, VA.

Virginia Department of Health. (2008). Virginia Health Equity Report. Unequal Health Across the Commonwealth. Division of Health Statistics, Richmond, VA.

Virginia Department of Social Services. (2005). A Blue Ribbon Plan to Prevent Child Abuse and Neglect in Virginia: 2005-2009. Developed in cooperation with Virginia Commonwealth University Center for Public Policy. Virginia Department of Social Services, Richmond, Va.

Voices of Virginia's Children. (2007). http://www.vakids.org/work/kcdata.htm. Richmond, VA.

Watts-English, T., Fortson, B. L., Gibler, N., Hooper, S. R. and De Bellis, M. D. (2006), The psychobiology of maltreatment in childhood. *Journal of Social Issues, 62*: 717–736.

Widom, C. S. (1992). The cycle of violence. Washington, DC: National Institute of Justice.

Widom, C. S., & Ames, M. A. (1994). Criminal consequences of childhood sexual victimization. Child Abuse and Neglect. Washington, DC: National Institute of Justice.

Widom, C. S., et al. (1995). Alcohol abuse in abused and neglected children followed-up: Are they at increased risk? Journal of Studies on Alcohol. Washington DC: National Institute of Justice.

Wodarski, J. S., Kurtz, P. D., Gaudin, J. M., & Howing, P. T. (1989). Child maltreatment: Effects on school aged children's social and emotional development and school performance. Athens, GA: University of Georgia School of Social Work.

Wu, S., Ma, C., Carter, R.L., Ariet, M., Feaver, E.A., Resnick, M.C., & Roth, J. (2004). Risk factors for infant maltreatment: A population-based study. *Child Abuse and Neglect, 28*, 1253-1264.

Yehuda, R., Bierer, L.M., Schmieidler, J., Aferiat, D.H. Breslau, I., Dolan, S. (2000). Low cortisol and risk for PTSD in adult offspring of Holocaust survivors. American Journal of Psychiatry, 157(8), 1252-1259.