A Comparative Analysis of Statewide Programs and Initiatives to Improve Perinatal and Maternal Health

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Prepared for:

Dr. Calvin A. Kent, Ph.D.

Prepared by:

Jade Brooks
Graduate Research Assistant

Center for Business and
Economic Research
Marshall University
One John Marshall Drive
Huntington, WV 25755

MARSHALL UNIVERSITY
CENTER FOR BUSINESS AND ECONOMIC RESEARCH

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Introduction

The perinatal period during a pregnancy generally begins at 22 weeks gestation and continues up to one month after birth. During this time, the general health of the mother and infant is imperative for a successful, full-term birth. Problems associated with perinatal health can impose negative consequences that affect both the infant and the families. These problems consist of not only of health-related complications but can also include added financial burdens to parents and families due to the medical costs associated with perinatal health complications.

Perinatal health is a growing concern in the United States. The health of mothers and infants is of critical importance as both are a direct reflection of the current health status of the nation (CDC 2010). Just as important is the concern for the health of the next generations of infants born in the United States. As a major health predictor for the next generation, perinatal health should be of top priority in order to better the health of mothers and infants in the future.

Both national and statewide programs geared towards the improvement of perinatal health are fundamental in order to effectively manage the increasing perinatal complications in the U.S. It has been found that a major focus of many public health efforts is improving the health of pregnant women and infants (DHHR 2010b).

The purpose of this report is to first examine the literature and determine major indicators of perinatal health in the United States. For each indicator, a section is devoted towards discussing the potential negative outcomes associated with the perinatal period of pregnancy. Key national and statewide programs will then be identified that have proven to be successful in positively influencing perinatal health in the nation by increasing perinatal education and awareness among the general public.

The next section of the report will provide a comparison of perinatal programs and initiatives in West Virginia and the surrounding states in order to determine where West Virginia may be falling short. In the final section of the report, recommendations will be made based on guidance from the literature as to how West Virginia can better provide perinatal health education and awareness to the public, especially those who are underprivileged that may not have access to programs otherwise.

Guidance from the Literature—*Perinatal Health Indicators*

Neonatal Morbidity

Neonatal morbidity refers to the negative complications that begin around the time of birth that are associated with poor perinatal health during pregnancy. One of the major concerns of programs driven to improve perinatal and maternal health is to battle the negative outcomes of neonatal morbidities by increasing perinatal health awareness and education among the general public and pregnant women—those who are in need of it most.

Prematurity

Premature birth, also referred to as preterm birth, is a serious health problem in the United States (Institute of Medicine 2006). An infant born before 37 weeks gestation is considered a preterm birth. According to National Institute of Child Health and Human Development, premature birth is one of the top causes of infant death in this country (NICHD 2010). In a report brief published by the Institute of Medicine, it was estimated that premature births cost the nation more than $26 billion annually. The same report found that for each infant born prematurely, there is cost of approximately $51,600 per birth (Institute of Medicine 2006).

According to the March of Dimes, in the U.S., one in eight infants are born premature (March of Dimes 2009). The March of Dimes also found that in comparison to other developed countries, the United States has the highest rates of premature births at 12.7 percent. In the *Premature Birth Report Card* published by the March of Dimes in 2009, states were graded by comparing the premature birth rates of each state to the Healthy People 2010 national objective of 7.6 percent or less (March of Dimes 2009). Table 1 illustrates the scoring criteria utilized by the March of Dimes in order to determine specific grades for each state based on the preterm birth rate.

Table 1: Premature Birth Rate Grading Criteria

A	Preterm birth rate less than or equal to 7.6 percent
B	Preterm birth rate greater than 7.6 percent, but less than 9.4 percent
C	Preterm birth rate greater than or equal to 9.4 percent, but less than 11.3 percent
D	Preterm birth rate greater than or equal to 11.3 percent, but less than 13.2 percent
F	Preterm birth rate greater than or equal to 13.2 percent

Source: March of Dimes 2009 Premature Birth Report Card

No state, as of 2009, had accomplished the national objective of a premature birth rate of 7.6 percent or lower. Nationwide, Vermont has the lowest premature birth rate of 9.2 percent with a grade "B", with New Hampshire not far behind at 9.4 percent and a grade of "C" respectively.

As shown in Table 2 below, for 2007 West Virginia received a grade of "F" based on the preterm birth rate. Although this rate is not close to the national objective for 2010, it has decreased slightly since 2005 from 14.4 percent to 13.9 percent. West Virginia is not the only state with a grade of "F". Many other states fall well above the national objective, including three surrounding states. Of the surrounding states with a grade of "F," Kentucky had the highest preterm birth rate of 15.2 percent, Maryland had a slightly lower rate than West Virginia at 13.4 percent, and Ohio had the lowest preterm birth rate with a grade of "F" at 13.2 percent. Only two surrounding states had preterm birth rates low enough to receive a "D" grade, with Virginia at 12.1 percent and Pennsylvania at 11.8 percent.

Table 2: Premature Birth Rates (Percentage) and Report Card Grade by State: 2005-2007

	2005	2006	2007	Grade
Kentucky	15.2	15.1	15.2	F
Maryland	13.3	13.5	13.4	F
Ohio	13.0	13.3	13.2	F
Pennsylvania	11.9	11.8	11.8	D
Virginia	12.3	12.0	12.1	D
West Virginia	14.4	14.0	13.9	F

Source: March of Dimes 2009 Premature Birth Report Card

In the United States, the percent of preterm births has been increasing steadily since the mid-1980s (Martin et al. 2006). A portion of this increase, according to one study, could be attributed to the increase in multiple births due to the use of assisted reproductive therapies and to changes in the medical management of pregnancy which includes cesarean deliveries and inductions of labor (Martin et al. 2006). Inducing labor early (prior to 39 weeks) is both expensive and dangerous. Early induction frequently leads to elective cesarean sections.

There is national evidence that both inductions and cesarean sections are becoming more frequent. Research shows that the early induction of labor is associated with health related complications for both mother and baby. The risks of early induction include a two to three times higher rate of admission to Neonatal Intensive Care Units (NICU). The cost of a baby

which uses the NICU is up to 10 times the cost of a normal vaginal delivery. It is suggested that delaying birth until at least 39 weeks reduces the admission of newborns to NICU from 18 to 4 percent of all births (Oshiro 2004). Research suggests that induction of labor is a factor in escalating rates of cesarean deliveries, preterm births, and neonatal intensive care admissions (Oshiro 2004). These infants have a greater probability of respiratory complications and lower birth weights. In addition to the higher original costs, the problems of infancy continue into adulthood. Early inductions also are potentially harmful to mothers including risk of infection, uterine rupture and prolonged pain and time of recovery (Oshiro 2004).

Low Birth Weight

Not only are there added financial costs associated with preterm birth, but infants born preterm are at much higher risks for other health-related complications. Birth weight is one of the most important predictors of an infant's subsequent health and survival (Matthews and MacDorman 2007). One serious complication associated with infants born prematurely is the higher risk of low birth weight. Low birth weight is one of the top four complications that account for more than half of all infant deaths; the other three complications include birth defects and disorders relating to short gestation and sudden infant death syndrome (SIDS) (CDC 2010).

Infants born weighing less than 5 pounds, 8 ounces (2,500 grams) are considered low birth weight. One study found that almost 67 percent of low birth weight infants are born premature. The same study went on to explain that approximately 1 in every 12 infants is born with low birth weight in the United States (Martin et al. 2007). Infants born at a low birth weight are much more likely than infants born at a normal weight to have health-related complications during the neonatal period and are at a higher risk of requiring specialized care in a newborn intensive care unit (NICU) (March of Dimes 2008).

In a report published by the United States Centers for Disease Control and Prevention, it was found that because of their much greater risk of death, infants at the lowest birth weights have a large impact on national infant mortality (infant mortality rates will be discussed in more detail in a later section) (Matthews and MacDorman 2007). Maternal use of drugs can increase the risk that an infant will be born at a low birth weight (DHHR 2010b). According to the West Virginia Department of Health and Human Resources, cigarette smoking is the greatest known risk factor

for low birth weight (DHHR 2010b). However, prevention of risk factors such as low birth can be prevented with effective prenatal counseling and early education and care.

Healthy People 2010, which is discussed in more detail later in this report, is a national initiative extended from the previous Healthy People 2000 to improve the nation's health as a whole. One of the objectives of Healthy People 2010 is to reduce the low birth weight rate to an incidence of no more than five percent of all live births nationally by 2010. Nationally, the percentage of infants born low birth weight increased slightly from 8.1 percent in 2004 to 8.3 percent in 2006. According to the March of Dimes, the most recent statistics displayed that 1 in 10 infants was born at low birth weight in West Virginia. Table 3 illustrates the most recent statistics of low birth weight rates in percentages for West Virginia and the five surrounding states. As of 2006, West Virginia had the highest low birth weight rate of 9.7 percent, which was a slight increase from 9.3 percent in 2004.

Two other states, Maryland and Kentucky, also had low birth weight rates above nine percent at 9.4 percent and 9.1 percent respectively. Three surrounding states had rates below nine percent including Ohio (8.8 percent), Pennsylvania (8.5 percent) and Virginia (8.3 percent). Of West Virginia and the five surrounding states, each state had experienced an increase or stagnation in the low birth weight rate from 2004 to 2006; no state as of 2006 was even close to the Healthy People 2010 low birth weight national objective of five percent or below.

Table 3: Low Birth Weight Rates (Percentage): 2004-2006

	2004	2005	2006
Kentucky	8.8	9.1	9.1
Maryland	9.3	9.1	9.4
Ohio	8.5	8.7	8.8
Pennsylvania	8.2	8.4	8.5
Virginia	8.3	8.2	8.3
West Virginia	9.3	9.6	9.7
United States	**8.1**	**8.2**	**8.3**

Source: March of Dimes PeriStats (http://www.marchofdimes.com/peristats/default.aspx)

Other Complications

Respiratory Distress Syndrome (RDS)

Breathing problems are common among infants born before 37 weeks gestation. Inconsistent breathing is common in premature infants but the most serious breathing-related concern is the higher risk for the infant to develop a serious lung condition known as neonatal respiratory distress syndrome (RDS). RDS rarely occurs in full-term infants. RDS is more common in premature infants because their lungs are either underdeveloped or are unable to make enough surfactant which is the liquid that coats the inside of the lungs. This liquid is essential because it helps keep the lungs open so that infants can breathe in air once they're born. Infants born with RDS may need additional oxygen and mechanical breathing support to keep their lungs expanded (March of Dimes 2008).

Intraventricular Hemorrhage

One complication that is less prevalent, but still a major concern for infants born prematurely is known as intraventricular hemorrhage or bleeding in the brain. This complication occurs most often in very low birth weight premature infants (those born weighing less than 1500 grams or 3 pounds, 4 ounces), usually in the first three days of life (March of Dimes 2008). Newborns born prematurely with small brain hemorrhages may have no symptoms, but some newborns with larger hemorrhages may experience seizures, lethargy, or even coma (March of Dimes 2008).

Necrotizing Enterocolitis (NEC)

Infants born prematurely and at a low birth weight are at an increased risk of intestinal problems. Premature infants are more likely to develop a serious intestinal problem known as necrotizing enterocolitis (NEC). This intestinal problem can be extremely dangerous and usually develops during the neonatal period or between two and three weeks after birth (March of Dimes 2008). Although NEC can be treated with intravenous antibiotics, it can sometimes lead to feeding difficulties, abdominal swelling and other complications.

One study conducted by the University at Buffalo found that infants born extremely prematurely (at less than 28 weeks gestation) are 3 to 4 times more likely to be educational underachievers than infants born at or near full term (University at Buffalo 2000). The same study went on to discuss that according to other research published in the *Journal of Paediatric and Perinatal Epidemiology,* there is a significant increase in risk of a child requiring special education, grade

repetition and the use of additional school-based services when born extremely preterm (University at Buffalo 2000).

According to the March of Dimes, there are many factors during the perinatal period of pregnancy that can contribute to premature birth, low birth weight, and other previously mentioned complications. Some of these factors include:

- chronic health problems in mother (high blood pressure, diabetes or heart and lung problems)
- smoking
- alcohol and drugs
- infections involving the uterus (cytomegalovirus, rubella, chickenpox and toxoplasmosis)
- placental problems which can reduce blood flow and nutrients to the fetus
- inadequate maternal weight gain
- socioeconomic factors (low income, lack of thorough perinatal health education) (ACOG 2000; Berghella 2007; Goldenberg and Culhane 2007).

Neonatal Mortality

It has been found that neonatal mortality is the result of a complex set of factors that include both biological and social characteristics (WV Healthy Kids and Families 2006). Infant deaths and infant mortality rates are considered to be useful as an important indicator of a population's health (WV Healthy Kids and Families 2006). Infant death is also an important measure of a nation's social well-being (DHHR 2010b). According to a data brief published by the National Center for Health Statistics, the most recent data suggests that in 2005, the United States ranked 30th in the world in infant mortality (NCHS 2009). The study went on to explain that the primary reason for the higher infant mortality rate when compared to other countries was directly related to the extremely high percentage of premature births in the nation.

Because infant mortality rates on both a national and statewide level are on the rise, another objective of Healthy People 2010 is to reduce the infant mortality rate in the United States from the 1997 baseline of 7.5 deaths per 1,000 live births to 4.5 deaths per 1,000 live births by 2010 (CDC 2010). This rate is applicable to the perinatal period between 28 weeks gestation and one

week after birth. In 2005, the national infant mortality rate was 6.9 percent. According to the March of Dimes, the most recent statistics for West Virginia showed evidence that 170 infants died before reaching their first birthday in 2005.

Table 4: Infant Mortality Rates (Percentage): 2003-2005

	2003	2004	2005
Kentucky	6.8	6.8	6.7
Maryland	9.3	9.1	9.4
Ohio	7.8	7.5	8.2
Pennsylvania	7.3	7.3	7.3
Virginia	7.7	7.4	7.5
West Virginia	7.5	7.6	8.2
United States	**6.8**	**6.8**	**6.9**

Source: March of Dimes PeriStats (http://www.marchofdimes.com/peristats/default.aspx)

Table 4 illustrates the most recent statistics of infant mortality rates in percentages for the United States, West Virginia and the five surrounding states. In the United States, the infant mortality rate has remained relatively constant with a slight increase from 6.8 percent in 2005 to 6.9 percent in 2005. As of 2005 for the six previously mentioned states, Maryland had the highest infant mortality rate of 9.4 percent. West Virginia and Ohio were tied for the second highest infant mortality rate of 8.2 percent, which was a slight increase from 7.6 percent in 2004. Two other states, Virginia and Pennsylvania, had infant mortality rates well above the Healthy People 2010 objective at 7.5 percent and 7.3 percent respectively. Kentucky had the lowest infant mortality rate of 6.7 percent per 1,000 live births. Of West Virginia and the five surrounding states, every state had experienced an increase or stagnation in the infant mortality rates from 2003 to 2005 except Kentucky which dropped slightly from 6.8 percent in 2004 to 6.7 percent in 2005. As of 2005, no state was close to the Healthy People 2010 national objective of 4.5 percent or below.

Success and Continuing Efforts

Many programs, initiatives and interventions have been implemented in order to improve perinatal and maternal health across the nation. Poor birth outcomes and maternal health can be positively influenced through the use of timely, high-quality prenatal care (DHHR 2010b). The

following section describes in detail just a few examples of independent, state and national programs that have been proven to be successful in some type of improvement of women's and infant health, as well as some continuing efforts to improve the health of the nation into the future.

Evergreen Hospital Medical Center

This report does not specifically focus on the health-related benefits associated with breastfeeding since the majority of breastfeeding takes place after the "perinatal period," however, breastfeeding education is a crucial part of infant health. As a part of a program at Evergreen Hospital Medical Center in Kirkland, Washington, infant feeding classes are available to new mothers interested in breastfeeding. This program has proven to be successful in an increased number of women choosing to breastfeed their infants. As a result of past success, the program is now part of the global program, Baby Friendly Hospital Initiative (BFHI), which encourages and recognizes hospitals and birthing centers that offer an optimal level of care for lactation. No hospital in West Virginia has achieved this designation to date.

Healthy Timing and Spacing of Pregnancy Intervention

Recommendations from both national and international organizations indicate that at least 24 months should pass before a woman should plan to become pregnant again. The health impacts for pregnancies occurring prior to the passage of the recommended 24 months are substantial for both child and mother. Early pregnancies increase the risk by 70 percent of premature birth and accompanying complications. These complications include low birth weight, respiratory distress and mental disabilities which were discussed previously in this report.

The Healthy Timing and Spacing of Pregnancy (HTSP) intervention is a global initiative facilitated by the United States Agency for International Development to help women and families delay or space their pregnancies to achieve the healthiest outcomes for women, newborns, infants, and children (USAID 2008). In a report published by the USAID, it was stated that "HTSP encompasses a broader concept of the reproductive cycle—starting from healthiest age for the first pregnancy in adolescents, to spacing subsequent pregnancies following a live birth, still birth, miscarriage or abortion – capturing *all* pregnancy-related intervals in a woman's reproductive life…" (USAID 2008).

It is the goal of HTSP to provide guidance on planning healthy pregnancies to women around the world. HTSP promotes three key messages (USAID 2008):

- Women should space the births of their children at least two years apart—where three to four years is optimal.
- There are added benefits to the health of the mother and children when properly spaced.
- Several family planning methods are available that can help women achieve optimum birth spacing.

Intermountain Healthcare

Intermountain Healthcare based in Salt Lake City, Utah facilitated an guideline-based intervention to reduce the inappropriate use of elective inductions of labor through the implementation of an evidence-based guideline along with patient education, performance monitoring, and peer review (Oshiro 2004). As mentioned previously, research suggests that induction of labor is a factor in escalating rates of cesarean deliveries, preterm births, and neonatal intensive care admissions (Oshiro 2004). In a study conducted as part of the intervention, it was found that approximately one-third of labor inductions were inappropriate and unnecessary based on labor induction guidelines recommended by the ACOG (ACOG 2009).

In response to the elevated rate of inappropriate induction procedures, the Intermountain Healthcare Council implemented a set of six guidelines for labor induction procedures for health care providers in the area. The guidelines are as follows (Intermountain Healthcare 2007):

1. Delivery should be electively undertaken only after 39 weeks gestation, regardless of fetal lung maturity.
2. A counseling session should take place regarding the indications for induction, the agents and methods of labor stimulation and the possible need for repeat induction.
3. An assessment of fetal maturity is required before any induction may take place.
4. The cervix should be assessed to determine cervical ripeness and the Bishop Score should be utilized as the appropriate measurement.
5. Contraindications to and precautions of inducing labor should be understand by the patient.

As a result of the implementation of the labor induction guidelines, total elective inductions for pregnancies of less than 39 weeks gestation decreased from an average of 27 percent of births in 2001 to five percent of all births in 2004 for the participating hospitals (Oshiro 2004). Not only did this intervention reduce the number of elective labor inductions for participating hospitals, but there was a significant cost reduction as well. The Intermountain Healthcare intervention resulted in a total maternal and neonatal variable cost decrease from $1,622 per case in January 2003 to $1,480 in the first half of 2004 for the participating hospitals (Oshiro 2004).

March of Dimes

The March of Dimes is a national not-for-profit organization with a mission "to improve the health of babies by preventing birth defects, premature birth, and infant mortality" (March of Dimes 2010). In order to follow the mission set forth for the organization, the March of Dimes attempts to save infants' lives through research, community services, education and advocacy. The March of Dimes collaborates with researchers, volunteers, educators, outreach workers and advocates in order to work together to improve perinatal and maternal health throughout the nation.

Despite a weak economy in the past few years, the March of Dimes has remained dedicated to the improvement of women's and infant health (March of Dimes 2010). In the 2008 official report published by the March of Dimes, many proven successes were discussed. Some of these successes are described below.

- All 50 states and the District of Columbia now require that every newborn be screened for at least 21 serious conditions recommended by the American College of Medical Genetics
    - Although all states now have laws or rules that require the screening, as of December 31, 2008, Pennsylvania and West Virginia still must implement their expanded programs.
- As a result of the Surgeon General's Conference on Preterm Birth, an action agenda to reduce the prematurity rate was created in order to:
    - Advocate for funding for the National Center for Health Statistics (NCHS) to implement changes in state and national vital statistics regarding prematurity.

    - Enhance the accuracy of gestational dating by implementing the Institute of Medicine's recommendation for routine first trimester ultrasound.
    - Develop a blueprint and cost estimate for research centers dedicated to the study and prevention of preterm birth.
    - Pursue an advocacy agenda to gain new funding for the PREEMIE Act and other federal programs.
    - Create a quality improvement initiative to decrease inductions and cesarean sections.
- The first Premature Birth Report Card (mentioned previously in this report) discussed the growing problem of prematurity throughout the entire United States.
- $26.8 million was invested in new research grants in order to better understand and prevent birth defects, premature birth and infant mortality in the areas of:
    - basic biological processes of development,
    - genetics, and
    - prevention of premature birth (March of Dimes 2010).

According to the 2008 report, it is the goal of the March of Dimes to remain involved in continued efforts on the improvement of perinatal and maternal health in the United States. To do this, the organization recently voted and decided to dedicate continued research and development to the growing problem of prematurity and other infant-related health complications. The March of Dimes also decided to declare prematurity prevention a global campaign that will be extended to the year 2020 (March of Dimes 2010).

Comparison of Programs in West Virginia and Surrounding States

West Virginia

Birth Score

Birth Score is a program designed to identify infants who are at greatest risk for health and developmental problems, and to ensure that these children have access to appropriate health and special care systems. The risk status for a newborn is determined by utilizing a Birth Score system comprised of seven weighted factors that include maternal age, infant's sex, mother's

education, previous pregnancies, infant's birth weight, infant feeding intention, and the mother's use of nicotine during pregnancy (Mullett 2009).

As perinatal care up to one month after birth is of the highest importance in the State, Birth Score involves the collaboration of major state organizations including the West Virginia Bureau for Public Health, Office of Maternal, Child and Family Health and the West Virginia University School of Medicine Department of Pediatrics in order to effectively identify infants with high risk developmental problems.

Through collaboration, the involved organizations developed the Birth Score-Developmental Risk Screen and Newborn Hearing Screen initiatives. This program has proven to be successful in expanding the state's capacity to meet the federally required "child find" responsibilities (DHHR 2010a). Child Find is a system utilized in the State to determine whether or not a child requires special education once enrolled in school. As part of the West Virginia State Board Policy 2419, the Birth Score program is able to meet the federal requirements of the Child Find system through the pre-screening process of newborns and infants for health risks and developmental problems that could produce learning or developmental problems once the infant reaches school-age. Birth Score has also made a significant contribution to the reduction of mortality among West Virginia infants who are one month to one year of age (DHHR 2010a).

Right From The Start (RFTS)

The Right From the Start Project (RFTS) began offering comprehensive services to West Virginia government covered pregnant women in 1990. Right From the Start is a program in West Virginia through the Division of Perinatal and Women's Health that provides in-home care coordination services to high risk, low income pregnant women through the second postpartum month and Medicaid eligible high risk infants through one year of age. RFTS also helps women obtain medical coverage for both themselves and their infants, and provides access to other "enhanced" services such as parenting classes, transportation to medical appointments, smoking cessation programs, and health and nutrition programs.

RFTS works with approximately 76 community agencies throughout the State in order to provide a coordination of health care services and enhanced education services to high-risk individuals in need. Currently, there are 165 Designated Care Coordinators (DCCs) in West Virginia that are

dedicated to providing access to early and adequate prenatal care. There are also obstetricians, nurse practitioners, midwives and family practice physicians throughout the state (and bordering states) who have contractual agreements with RFTS to provide services to eligible women. In order to be eligible for RFTS services, women must:

- Be pregnant;
- Live in the State; and
- Apply for a DHHR Medicaid card.

For an infant to be considered eligible for RFTS services, the infant must:

- Be a West Virginia resident;
- Have a valid DHHR Medicaid card; and
- Be less than one year of age.

It has been found that through the RFTS project, improvement in the health of West Virginia's perinatal population is a result of a carefully crafted, highly-interdependent partnership (DHHR 2010c). Tertiary care centers, primary care centers, local health departments, private practitioners and community agencies have worked with the Office of Maternal, Child and Family Health (OMCFH) for nearly 30 years to improve the health and well-being of the State's people.

According to a data analysis conducted by the Birth Score Program at West Virginia University School of Pediatrics, the percent of eligible women choosing to participate for RFTS services has increased from 67 percent in 1995 to 84 percent participation in 2002 (Morgan 2002). Tables 5 and 6 illustrate the client figures for the RFTS program for the calendar year 2007 and 2008. In West Virginia, there was a significant increased in total clients served through RFTS from 2007 to 2008. In 2007, a total of 42,782 clients were served; 49,459 clients were served in 2008.

In one year, the RFTS increased access to services available to almost 6,700 individuals in need of services. The largest segment of clients served in-home for both years were infants at 12,594 in 2007 and 13,991 in 2008. Prenatal clients also represented a large portion of total clients served in 2007 with 7,772 in-home visits and 11,402 other contacts in 2007 (office visits, clinic visits, phone or other locations). However, in 2008, more prenatal clients were served with 8,294 in-home visits and 12,251 other contacts.

Table 5: Right From The Start Client Enrollment and In-Home Visits: CY 2007

	Unduplicated Clients	In-Home Visits	Other Contacts*	Total Contacts
Prenatal	3,590	7,772	11,402	19,174
Infant	3,396	12,594	11,014	23,608
Enhanced Services Only	313	-	-	-
Total	**7,299**	**20,366**	**22,416**	**42,782**

*Other contacts includes office, clinic, phone, and other miscellaneous locations

Source: WV Department of Health and Human Resources (http://www.wvdhhr.org/rfts/)

Table 6: Right From The Start Client Enrollment and In-Home Visits: CY 2008

	Unduplicated Clients	In-Home Visits	Other Contacts*	Total Contacts
Prenatal	3,662	8,294	12,251	20,545
Infant	3,625	13,991	14,923	28,914
Enhanced Services Only	469	-	-	-
Total	**7,756**	**22,285**	**27,174**	**49,459**

*Other contacts includes office, clinic, phone, and other miscellaneous locations

Source: WV Department of Health and Human Resources (http://www.wvdhhr.org/rfts/)

Helping Appalachian Parents and Infants (HAPI) Project

The Healthy Start, Helping Appalachian Parents and Infants Project was developed through extensive collaboration between the Office of Maternal, Child and Family Health and West Virginia University in order to provide services to high-risk pregnant women and infants. HAPI is funded through Health Resources and Services Administration (HRSA) and is one of 96 Healthy Start Projects nationally. This is the only Healthy Start Project in West Virginia. HAPI initially began in four counties in West Virginia but due to the program's success has now expanded to eight counties including Barbour, Harrison, Marion, Monongalia, Preston, Randolph, Taylor, and Upshur. HAPI has also new service components to eligible women and infants such as oral health services, substance abuse screening and outreach services. There are three main objectives of the HAPI project:

- Helping women become healthier before becoming pregnant
- Encouraging healthy spacing between pregnancies
- Focusing on mental health issues

Care coordination services are offered to eligible women and infants (services are in accordance with standard Right From The Start project protocols). HAPI, however, extends past some objectives of the RFTS program and includes the preconception phase as well. Services extend for 2 years after the birth of the infant. The following criteria determine eligibility for HAPI services:

- Any current Right From the Start participant.
- Pregnant women who are WV Residents and have the WV Medicaid card.
- Risk Screening criteria such as, smoking status, postpartum depression, low birth weight, high birth score, etc. "Mom" is the identified participant, services focusing on Mom's well being.

West Virginia Healthy People 2010

Before the year 2000, the *Healthy People 2000: National Health Promotion and Disease Prevention Objectives* created awareness among the general public, government and interested organizations about the health status of the nation's people. In order to evaluate the health status of the state of West Virginia, over thirty West Virginia work groups (over 300 people representing the various national health focus areas) identified and targeted a specific set of West Virginia health objectives to be achieved by the year 2010 (DHHR 2010b). Section 16 of *A Healthier Future for West Virginia—Healthy People 2010* discusses in detail the objectives for maternal, infant and child health to be achieved by 2010. The target objectives related to infant and maternal health for the State are provided below[1].

- Reduce the prevalence of cigarette smoking among pregnant women to 12% or lower
- Reduce low birth weight to an incidence of no more than 5% of live births and very low birth weight to no more than 1% of live births.
- Increase the proportion of all pregnant women who receive 1st trimester prenatal care to at least 90%
- Reduce the infant mortality rate to less than 7 deaths per 1,000 live births
- Reduce the incidence of pre-term birth before 39 weeks gestation to 7.6% of live births

[1] Only the objectives pertaining specifically to perinatal and maternal health are included in this section. (Source: West Virginia Department of Health and Human Resources, *A Healthier Future for West Virginia—Healthy People 2010*. http://www.wvdhhr.org/bph/hp2010/objective/contents.html.

- Reduce the sudden infant death syndrome (SIDS) mortality rate to 0.3 per 1,000 live births
- Reduce the incidence of spina bifida and other neural tube defects to 3 per 10,000 live births.
- Ensure that all newborns are screened by state-sponsored programs to detect phenylketonuria (PKU), congenital hypothyroidism, galactosemia and hemoglobinopathies.
- Reduce the perinatal mortality rate per 1,000 live births (deaths of infants from 20 weeks gestation to 28 days) by 30%

Although current data is not available for all of the West Virginia Healthy People 2010 objectives, Table 7 provides the most recent statistics for four of the most prevalent perinatal-related complications associated with pregnancy. In 2008, 26.5 percent of women claimed that they did smoke cigarettes while pregnant which is drastically higher than the 2010 objective of 12 percent of below. As of 2006, the low birth weight rate in West Virginia hovered at 9.7 percent of live births—again, significantly higher than the 2010 objective of five percent or lower. It was found for the most recent data on preterm birth rates in the State that in 2007 West Virginia's rate was more than six percent higher than the Healthy People objective of 7.6 percent. In 2005, West Virginia was close to the Healthy People objective of less than seven deaths per 1,000 live births at an infant mortality rate of 8.2 percent.

Table 7: West Virginia Healthy People 2010 Objectives for the Improvement of Perinatal and Maternal Health

Objectives	West Virginia Statistics
Reduce the prevalence of cigarette smoking among pregnant women to 12% or lower	26.5%
Reduce low birth weight to an incidence of no more than 5% of live births	9.7%
Reduce the incidence of preterm birth before 39 weeks gestation to 7.6% of live births	13.9%
Reduce the infant mortality rate to less than 7 deaths per 1,000 live births	8.2

Source: 2008 West Virginia Kids Count Data Book (the most recent statistics are from years 2005-2008 provided by the Data Book).

It is apparent from the previous table at the time of the data provided that West Virginia has work to do in the area of perinatal and maternal health. Through extensive collaboration of West

Virginia perinatal programs and initiatives discussed in this section, the State is continually moving forward in order to achieve the West Virginia Healthy People 2010 objectives.

West Virginia Perinatal Partnership

The West Virginia Perinatal Partnership (WVPP) is a statewide partnership of health care professionals and public and private organizations working to improve perinatal health in West Virginia. The Partnership has remained dedicated to the following objectives since 2006 in order to improve infant and maternal health in the West Virginia (WVPP 2008):

- For health care providers to be able to best care for pregnant women and their babies;
- Study research and trends in mother/child health and work to distribute that information;
- Disseminate the latest knowledge about perinatal health through educational programs;
- Encourage new laws that promote better health for pregnant women and their babies;
- Create opportunities for perinatal professionals to share their expertise with each other; and
- Work to reduce tobacco and drug use among pregnant women and foster oral health care in pregnant women and infants.

In a relationship with the WV Health Care Authority and the March of Dimes, the WVPP has worked closely to conduct the Obstetrical Collaborative Quality Initiative. As mentioned in an earlier section, it has been found that elective induction of labor has a higher risk of health complications for both the mother and infant. The main objective of this initiative was to reduce elective deliveries prior to 39 weeks gestation. With 15 hospitals in the State participating and the close collaboration with involved organizations, the program was successful—the rate of elective deliveries declined in the participating hospitals from 21.8 percent of births to 8.1 percent of births from January through August of 2009 (WVPP 2008).

Breastfeeding is noted to be the most beneficial feeding method for the health of most infants (Weimer 2001). Since the perinatal period extends through one month after birth, breastfeeding awareness is imperative to the health of an infant. It has been a main goal of the WVPP to increase the breastfeeding rates in the State by the implementation of programs and development of policy recommendations. Because breastfeeding was considered a public act of indecency

until 2007, the WVPP supported Legislative deliberations to provide women with the freedom to breastfeed with protection by law—which passed in 2007.

The WVPP was able to obtain $20,000 in fiscal year 2007 and 2008 to provide lactation consultant training to hospital obstetrical nurses and other health care professionals. This was possible through collaborative efforts with the Legislative Oversight Committee on Health and Human Resources. This collaboration proved to be successful when over 70 health care professionals were trained and certified in lactation consultation in 2007. The training continued in 2008 with 70 more health care providers receiving the training. The WVPP also assisted in establishing the WV Breastfeeding Alliance. Although no research has been done as to the success of the Alliance, it does provide the opportunity for health care professionals and nurses to learn the most up-to-date information on lactation education.

Ohio

Ohio Perinatal Quality Collaborative

Ohio ranks 35th among states in infant mortality and 31st in prematurity—where preterm birth is the leading cause of infant mortality in the State (OPQC 2010). Ohio Perinatal Quality Collaborative is a collaborative effort by Ohio care providers, hospitals, parents and policy makers to indentify and facilitate effective improvement methods to reduce preterm birth, morbidity and mortality in Ohio. OPQC is funded through a contract with the Ohio Department of Job and Family Services (ODJFS) for 2 years to further development research on quality improvement of perinatal health care throughout the state.

The current goal of the program is to assure that all initiation of labor or caesarean sections on women who are not in labor occur only when obstetrically or medically indicated. In one year, the OPQC plans to reduce the number of women in the State who choose to electively induce labor or caesarean sections between 36.1 to 38.6 weeks gestation by 60% (OPQC 2010). No other research is available, however, on the effectiveness of the program on Ohio's perinatal and maternal health.

Ohio University Community Health Program—Perinatal Initiative

The Ohio University Community Health Program's Perinatal Initiative was established to provide perinatal education to high-risk pregnant women at and below the 200 percent poverty

level who are uninsured or underinsured. The Initiative has been highly involved with the communities surrounding Ohio University in order to assist underprivileged women.

These services are provided to eligible residents of southeastern Ohio:

- Assistance with smoking cessation, nutrition, exercise and prenatal education services
- Depression screenings, social and emotional support, case management and referrals to other community agencies.

The Initiative has proven to be successful since its inception in 2000. As a result of the continued efforts demonstrated through the Ohio University Perinatal Initiative, in 2008 there were a total of 130 women in 283 visits who received services for a total of $36,233.

Regional Perinatal Center Program

In order to reach all women and infants in the state of Ohio, the state is divided into six individual regions with a Regional Perinatal Center located in each region throughout the state in the following counties: Cuyahoga, Franklin, Hamilton, Lucas, Montgomery and Summit. To provide both evidence-based and risk-appropriate perinatal care to women and infants, the program maintains regional activities designed to reduce perinatal mortality and morbidity. The regional program is responsible for funding each of the six agencies to support regional perinatal system development through the coordination of resources for prenatal and newborn care.

Through the use of a Perinatal Data Use Consortium, the program is able to promote the importance in the reduction of both perinatal mortality and morbidity. The Perinatal Data Use Consortium is designed to advance data knowledge and application of professionals concerned with perinatal health to improve the quality of perinatal care across the State. Specifically, the Region IV Perinatal Center located in Columbus, Ohio is involved in another separate collaborative effort, the Perinatal Education Consortium of Central & Southeastern Ohio (PECCSO), to provide consistent evidence- based education through regional partnership. This effort is provided through a wide array of courses which include:

- OB Emergencies
- Basic Fetal Monitoring
- Advanced Fetal Monitoring

- Breastfeeding Update
- Basic Cesarean Section
- Labor Support
- Labor Support vs. Epidural Support
- Care of the Late Preterm Infant (OSU Medical Center 2010).

There is currently no data available as to how many individuals in Ohio actually participate in this program or if the program can be attributable to decreasing infant mortality and morbidity rates in the State.

Kentucky

Health Access Nurturing Development Services (HANDS)

The Health Access Nurturing Development Services (HANDS) program provides voluntary home visitation services to expectant parents residing in the state of Kentucky. The Kentucky Department for Public Health has declared four specific goals for the HANDS program. There is no information available as to the specifics, however these goals include:

- Healthy pregnancies and births;
- Healthy child growth and development;
- Healthy, safe homes;
- Self-sufficient families (Kentucky Department for Public Health 2010).

Home visitation services are provided by the HANDS program are available to pregnant women at any time during the pregnancy and continues up to three months after birth. As a preliminary part of the program, families meet with a HANDS Parent Visitor to discuss any questions or concerns related to pregnancy and the infant's health. The HANDS Parent Visitor also provides the family with general information about other community resources available for new parents. After the preliminary meeting takes place, if necessary support is provided through home visitation services.

Like many other perinatal health programs, there is no research available on the effectiveness of the HANDS program in the Kentucky.

Kentucky Perinatal Association

The Kentucky Perinatal Association (KPA) began in 1988 as a statewide non-profit, volunteer organization with collaboration from maternal and infant healthcare organizations throughout the State. In 2009, KPA earned the "State Initiative Award," as the best state chapter in the nation by the National Perinatal Association (KPA 2009). As a partnership with other state health agencies, the KPA is currently involved in a campaign to decrease the incidence of late term births and reducing perinatal morbidity and mortality.

In comparison to the West Virginia Perinatal Partnership, little information and data is available on the Kentucky Perinatal Association's involvement in the State. Not only this, but no research has been done on the success of the program in decreasing the incidence of late term births and the reduction of perinatal morbidity and mortality.

Healthy Babies Are Worth The Wait

Healthy Babies are Worth the Wait is a three year initiative in Kentucky that works directly with health care providers and community partners at three targeted intervention sites in Kentucky to reduce premature birth. The initiative strives to ensure that all pregnant women in the State have access to the care and information necessary to experience healthy, full-term pregnancies.

The initiative, which began in January 2007, is funded by the Prematurity Prevention Partnership between the March of Dimes, Johnson & Johnson Pediatric Institute and the Kentucky Department for Public Health. *Healthy Babies are Worth the Wait* is dedicated to attaining three main objectives to improve the health and well-being of infants born in the State. These objectives include:

- Reducing the singleton preterm birth rate by 15% in the three intervention sites through direct intervention with expectant mothers by medical professionals.
- Raising awareness of the issue of preterm birth among all members of the community by working with community leaders.
- Enhancing an ongoing local and national dialogue about risk factors for preterm birth and prevention options (Healthy Babies Are Worth The Wait 2010).

According to the Kentucky Cabinet for Health and Family Services website, data collection and evaluation of the Healthy Babies are Worth the Wait program would be done at the end

of 2009 (Healthy Babies are Worth The Wait 2010). Therefore, this information has not yet been released to the public.

Virginia

Regional Perinatal Councils

In 1992, the Regional Perinatal Councils were created statewide throughout Virginia in order to provide a network of public/private partnerships that assess the needs of infants and women of reproductive age. Through a collaborative effort with the American College of Obstetricians and Gynecologists and the federal Maternal and Child Health Bureau, the Regional Perinatal Councils have developed the Fetal and Infant Mortality Review Program (FIMR). FIMR is a community-based program that collects data on infant deaths and birth defects in the State to identify common causes or precipitating factors. FIMR is an imperative element of the Regional Perinatal Councils goal to improve programs and systems of care for mothers and infants in Virginia.

By utilizing the findings and insights gained through FIMR, the Regional Perinatal Centers develop work plans to address the identified perinatal issues for their regions. Local projects are then implemented to improve any identified problems associated with perinatal care and health. The program also helps to create community-oriented solutions to the problems associated with infant mortality and morbidity. This is possible through the identification of services that are lacking in the communities and the opportunity for cooperation among existing programs.

The Regional Perinatal Councils are comprised of seven separate perinatal councils that are listed below.

- Southwest Virginia Perinatal Council
- Blue Ridge Perinatal Council
- South Central Perinatal Council
- Skyline Region Perinatal Council
- Northern Virginia Perinatal Council
- Central Commonwealth Perinatal Council
- Eastern Virginia Perinatal Council (Virginia Department of Health 2010).

Although most of the Councils are smaller in size and serve a small number of counties in the State, the Southwest Virginia Perinatal Council serves 24 counties, making it one of the largest Councils in the State. The Southwest Virginia Perinatal Council is dedicated to providing appropriate care to mothers and infants in the community. The Council is involved in the Perinatal Consortium, a community based initiative to better coordinate and support national, state and local efforts on behalf of mothers, infants and their families. The perinatal consortium collaborates with numerous community organizations and coalitions to promote perinatal health throughout the region.

Although the Virginia Perinatal Council is a large organization that serves the State through collaboration of seven separate perinatal councils, the Council has not provided any research on the effectiveness of the continuing efforts or any successes resulting from perinatal activities throughout the State.

Pennsylvania

Pennsylvania Perinatal Partnership

Through collaborative efforts with Pennsylvania's Healthy Start Projects and Maternal and Child Health Programs, the Pennsylvania Perinatal Partnership is dedicated to the improvement of maternal and infant health outcomes in the State. Through education, advocacy, and collaboration, the Partnership continually emphasizes the importance of key factors directly related to maternal and perinatal health. These factors include making sure that women are healthy when they become pregnant, that they continue to be healthy during pregnancy, that they are healthy between pregnancies, and that their babies are born, and remain healthy. The Pennsylvania Partnership has found that the key to perinatal health is prevention—in order assist women in having safe and healthy pregnancies (Pennsylvania Perinatal Partnership 2010).

Although Pennsylvania does have a perinatal program, the Pennsylvania Perinatal Partnership, the State is lacking in evidence-based research or statistics on the effectiveness of the program's efforts on perinatal and maternal health in Pennsylvania.

Maryland

Maternal and Perinatal Health Program

In collaboration with local health departments, hospitals, private providers, professional organizations and community groups, the Maternal and Perinatal Health Program is dedicated to the improvement of the quality of services for more than 70,000 infants born each year in Maryland (Maryland Family Health Administration 2010b). The Maternal and Perinatal Health Program has declared a main goal to prevent maternal and infant deaths and other adverse perinatal outcomes by promoting preconception health, assuring early entry into prenatal care, and improving perinatal care throughout the state of Maryland. The program remains dedicated to community participation and contribution as well as the continual involvement of new statewide activities that include:

- The development of a Fact Sheet available to general public on prematurity awareness
- Continual support of a telephone hotline that assists pregnant women seeking prenatal care
- Development of the Administration of the Pregnancy Risk Assessment Monitoring System (PRAMS) which is a statewide survey that identifies and monitors selected maternal behaviors
- Spreading awareness of the importance of preconception health
- Continual promotion of the importance of breastfeeding
- Funding support activities for Sudden Infant Death Syndrome (SIDS) (Maryland Family Health Administration 2010b).

The Maternal and Perinatal Health Program is also responsible for the launch of two perinatal-related initiatives in the State. The Maryland Babies Born Healthy Initiative was initiated to reduce infant mortality and eliminate racial disparities in Maryland. The Initiative is designed to focus specifically on prevention services and quality improvement. In order to improve infant health, it has been determined that it is necessary to incorporate a comprehensive multifaceted approach to dealing with poor pregnancy outcomes in the State (Maryland Family Health Administration 2010a). The second perinatal initiative launched by the Maternal and Perinatal Health Program is the Crenshaw Perinatal Health Initiative. This Initiative was designed to assess prenatal services available to Maryland communities, assure that adequate prenatal care is

available, and the develop policies necessary to improve any issues identified (Maryland Family Health Administration 2010a).

Through its continuing efforts, the Maternal and Perinatal Health Program has been successful with a contribution to fewer infant deaths from 8.6 deaths per 1,000 births in 1998 to 7.3 deaths 2005 (Center for Maternal and Child Health 2009). The Program has also proven to be a contributing factor in fewer teen births in the State. Through the family planning services provided by the Maternal and Perinatal Health Program, it was estimated that approximately 21,600 pregnancies are averted each year (Center for Maternal and Child Health 2009).

Perinatal Collaborative

In Maryland, research indicates that mothers and babies remain at risk of unintended injury during labor and birth in the American healthcare system (Maryland Patient Safety Center 2010). The Maryland Perinatal Collaborative is ponsored by the Department of Health & Mental Hygiene's Maternal and Child Health Division and began in 2006. The Collaborative's mission is to create perinatal units that deliver care safely and reliably with zero preventable adverse outcomes by various proven methods, including:

- Standardization of electronic fetal monitoring (EFM) language
- Training in team coordination and teamwork behaviors
- Assessment of safety culture (Maryland Patient Safety Center 2010).

As a result of the Perinatal Collaborative, many partner hospitals have experienced improvements in patient health. St. Agnes Hospital is one example of perinatal improvements directly related to the work of the Perinatal Collaborative. As a result of improved communication and preparedness through the Collaborative's efforts, St. Agnes Hospital experienced a 16-month period of zero birth traumas (Maryland Patient Safety Center 2010).

Conclusion and Recommendations

This report has examined the major indicators of perinatal health in the United States. Prematurity and low birth weight among many other perinatal-related complications, have become major concerns for the future health and safety of the nation's people—especially pregnant women and infants. Neonatal mortality is another growing concern as the infant death

rate has been on the rise on both the state and national levels (CDC 2010). The research suggests that prenatal visits provide pregnant women with the opportunity to learn about the adverse effects of drug and substance abuse during pregnancy (DHHR 2010b). It has also been found that high-quality prenatal and perinatal care can reduce poor birth outcomes and improve maternal health throughout the nation (DHHR 2010b).

As a result of the increasing complications associated with pregnant women and perinatal health, state, national and even global programs have dedicated continual efforts towards the improvement of maternal and perinatal health for current and future generations. The Healthy People 2010 initiative has increased the awareness of the importance of perinatal health on a national and state level. With objectives set forth by the national initiative to be accomplished by 2010, it is the goal of the West Virginia Healthy People 2010 program to focus specifically on West Virginia's maternal and infant health.

In a comparison to other states, West Virginia is on its way to a healthier population through its extensive collaboration with state and national programs to improve the health and well-being of pregnant women and infants in the State. In the "Comparison of Programs in West Virginia and Surrounding States" section of this report, a few of West Virginia's perinatal programs and initiatives are summarized along with those programs and initiatives of other states, as well. With extensive collaboration among the many organizations in the state including the West Virginia Perinatal Partnership, Right From The Start, Birth Score, West Virginia Healthy People 2010 and many others, West Virginia has been successful in providing greater access to pregnant women in need of prenatal and perinatal care, reducing the number of elective labor deliveries, and improved breastfeeding education and training programs in the State (DHHR 2010c; WVPP 2008).

Despite many successes as a result of West Virginia's programs, the State is still well below the national expectations for perinatal health. As mentioned previously, West Virginia has been involved through the collaboration of state programs in reaching the West Virginia Healthy People 2010 objectives. Unfortunately, as the most recent data illustrates in a previous section, the State has yet to reach any of the 2010 objectives for perinatal and maternal health.

Many West Virginia programs with goals to improve perinatal health have done slightly better at providing accessibility to general information about the success and effectiveness of the programs on the State's maternal and infant health. The West Virginia Perinatal Partnership, for example, has had much research conducted on the effectiveness of its efforts in the State. Right From The Start is another program that has provided research and statistics on successes directly attributable to the program's efforts. Other programs, though, such as Birth Score and the HAPI project do not have evidence-based research easily available in order to determine the effectiveness of the programs on the State.

There is little evaluation of the programs and initiatives in many of West Virginia's surrounding states. Therefore, it was extremely difficult to approximate the effectiveness of the programs on the health and well-being of the women and infants in those states. Pennsylvania, for example, currently has one program with an online website that simply describes the declared goals and objectives. This program (Pennsylvania Perinatal Partnership) is comparable in its mission to the West Virginia Perinatal Partnership; however, has not conducted any research as to the effectiveness of the program, much less provided general information regarding the program to the general public. For this reason, it is important for other states to follow in the footsteps of programs such as the West Virginia Perinatal Partnership. By conducting research and making this information easily accessible, States can better estimate the health of its women and infants.

Through the successes and effectiveness of programs and initiatives described briefly in this report, it can be inferred that these types of programs are not just necessary to a State's wellbeing but completely indispensable if future generations are to be healthier. Ultimately, it seems as though West Virginia is on the right path towards improved perinatal health. Through extensive collaboration, West Virginia has been consistently successful in the battle towards a healthier State.

Appendix

Statewide Programs			
Title	**Responsible Organization**	**Scope of Program**	**Locations**
West Virginia			
West Virginia Perinatal Partnership	West Virginia Healthy Kids and Families Coalition and West Virginia Community Voices	A statewide partnership of health care professionals and public and private organizations working to improve perinatal health in West Virginia	Organizations and partners that take part in projects are located statewide
Right from the Start	Division of Perinatal and Women's Health	Obtain medical coverage for both mother and baby, access to other services such as parenting classes, transportation to medical appointments, assistance with quitting smoking, and nutrition guidelines	Statewide
Birth Score	West Virginia Bureau for Public Health, Office of Maternal, Child and Family Health and the West Virginia University School of Medicine, Department of Pediatrics	Identification of infants who are at greatest risk for health and developmental problems, and ensuring that these children have access to appropriate health and special care systems	32 birthing sites throughout the state
West Virginia Healthy People 2010	West Virginia Bureau for Public Health	Designed to encourage a second public health revolution in the history of the United States (specific objectives for improving perinatal and maternal health)	Statewide
Helping Appalachian Parents and Infants Project	Healthy Start	Main objectives of the HAPI project include helping women become healthier before becoming pregnant, encouraging healthy spacing between pregnancies, and focusing on mental health issues	Eight counties including Barbour, Harrison, Marion, Monongalia, Preston, Randolph, Taylor, and Upshur

Ohio			
Regional Perinatal Center Program	Ohio Department of Health	To promote access to evidence-based and risk-appropriate perinatal care to women and their infants through regional activities with the goal of reducing perinatal mortality and morbidity	Located in 6 Ohio counties: Cuyahoga, Franklin, Hamilton, Lucas, Montgomery and Summit
Ohio University Community Health Program Perinatal Initiative	Ohio University College of Osteopathic Medicine	Provides perinatal education to high-risk pregnant women at and below the 200% poverty level who are uninsured or underinsured, assists with smoking cessation, nutrition, exercise and prenatal education services, Provides depression screenings, social and emotional support, case management and referrals to other community agencies	Services are provided to residents of southeastern Ohio
Ohio Perinatal Quality Collaborative	American Congress of Obstetricians and Gynecologists	Collaborative effort to identify and apply effective methods to reduce preterm birth and morbidity and mortality for preterm infants in Ohio	Organizations and partners that take part in projects are located statewide
Kentucky			
Kentucky Perinatal Association	Kentucky Perinatal Association	Promoting perinatal health and keeping perinatal health care problems and solutions in focus including efforts such as the ongoing planning for Educational Outreach Projects	Statewide
Healthy Babies are Worth the Wait	Prematurity Prevention Partnership	To ensure that all pregnant women in the State have access to the care and information necessary to experience healthy, full-term pregnancies	Statewide
Health Access Nurturing Development Services (HANDS)	Kentucky Cabinet for Health and Family Services	Voluntary home visitation program for new and expectant parents (one of the main goals is to support healthy pregnancies and birth)	Statewide

Virginia			
Regional Perinatal Councils	Virginia Department of Health	A statewide network of public/private partnerships that assess the needs of infants and women of reproductive age. Their purpose is to conduct Fetal and Infant Mortality Review Program (FIMR) To better coordinate and support national, state and local efforts on behalf of mothers, infants and their families. The perinatal consortium collaborates with numerous community organizations and coalitions to promote perinatal health throughout the region	7 regions: Southwest Virginia Perinatal Council, Blue Ridge Perinatal Council, South Central Perinatal Council, Skyline Region Perinatal Council, Northern Virginia Perinatal Council, Central Commonwealth Perinatal Council and Eastern Virginia Perinatal Council
Pennsylvania			
Pennsylvania Perinatal Partnership	Pennsylvania Perinatal Partnership	Dedicated to the improvement of maternal and infant health outcomes in the State	Statewide
Maryland			
Maternal and Perinatal Health Program	Family Health Administration	To prevent maternal and infant deaths and other adverse perinatal outcomes by promoting preconception health, assuring early entry into prenatal care, and improving perinatal care	Statewide
Perinatal Collaborative	Maryland Patient Safety Center	Create perinatal units that deliver care safely and reliably with zero preventable adverse outcomes	Statewide
Proven Success for Statewide Programs			
Title	**Responsible Organization**	**Scope of Program**	**Locations**
Evergreen Hospital Medical Center	Evergreen Hospital Medical Center	To ensure that infant feeding classes are available to new mothers interested in breastfeeding	Kirkland, Washington
Intermountain Healthcare	Intermountain Healthcare	The goal was to reduce the rate of inappropriate elective labor induction through implementation of an evidence-based clinical guideline along with performance	Salt Lake City, Utah

		monitoring, peer review, and patient education	
Healthy Timing and Spacing of Pregnancy Intervention	United States Agency for International Development	To help women and families delay or space their pregnancies to achieve the healthiest outcomes for women, newborns, infants, and children	Global
March of Dimes	March of Dimes	To improve the health of babies by preventing birth defects, premature birth, and infant mortality through research, community services, education and advocacy to save infants' lives	Local chapters are located in each state

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