

A Blueprint to improve West Virginia Perinatal Health



September 2006

The West Virginia Perinatal Wellness Study is a project of

**West Virginia Community Voices, Inc. and
West Virginia Healthy Kids and Families Coalition**



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Partners

West Virginia Perinatal Wellness Study 2006

American Academy of Pediatrics, West Virginia Chapter
American College of Gynecology and Obstetrics, West Virginia Chapter & National
American College of Nurse Midwives - West Virginia Chapter
Black Medical Society of West Virginia
Bureau for Medical Services, West Virginia DHHR
Bureau for Public Health, West Virginia DHHR
Carelink
Hospitals and Birthing Centers in West Virginia
March of Dimes –West Virginia Chapter
Marshall University Medical School – Department of Obstetrics and Gynecology
Mountain State Blue Cross Blue Shield
Mission West Virginia, Inc.
Office of Epidemiology and Health Promotion – West Virginia DHHR
Office of Maternal, Child and Family Health – West Virginia DHHR
Partnership of African American Churches
Partners in Community Outreach
The Health Plan
Unicare
West Virginia Association of Addiction Professionals
West Virginia Center of Excellence in Women’s Health
West Virginia Children’s Health Insurance Program
West Virginia Council of Churches
West Virginia Health Care Authority
West Virginia Hospital Association
West Virginia Kids Count
West Virginia Primary Care Association
West Virginia Public Employees Insurance Agency
West Virginia School of Osteopathic Medicine
West Virginia Section of the Association of Women’s Health, Obstetric, and Neonatal Nurses
West Virginia State Medical Association
West Virginia University Institute for Health Policy Research
West Virginia University Medical School, Morgantown and CAMC Campuses
Wellness Council of West Virginia -West Virginia Worksite Wellness Programs
Women, Infants, and Children (WIC) Food and Nutrition Program – West Virginia DHHR

*Nancy Tolliver, RN, MSIR,
Clark Hansbarger, MD*

When the Claude Worthington Benedum Foundation issued its annual report in 2005, it asked, “Is it possible for a state with a difficult economy to help its kids to better health?” The answer was a resounding, “Yes.” Among other things, if we want to improve the health and well-being of our children, the report advised, we must begin long before birth. Better health for our children will be the result of better health for pregnant women and infants.

About 21,000 new babies are born in West Virginia each year. This is a relatively small number - a workable number. By working together, we can make sure that 21,000 new babies and their mothers have the best health care possible to assure a healthy beginning.

While there are solutions to our child health problems, we are concerned that we have made little progress over the past decade in improving infant mortality. The number of low birth weight babies has increased and more babies are spending the first weeks of life in neonatal intensive care. More and more of our children suffer from chronic disease such as asthma, diabetes, and obesity.

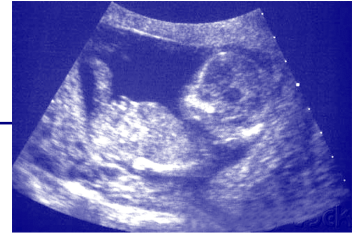
After taking a close look at perinatal health care in West Virginia, we have determined that our current system of caring for pregnant women and babies should be overhauled.

We have also found that there is a desire and strong support to make improvements in perinatal care in West Virginia. The partners in this study agreed that this is the right time and place for a comprehensive and collaborative approach. The professional medical and nursing associations, tertiary care facilities, medical residency programs, small rural and urban hospitals, birthing centers, nurse-midwives, pediatricians, and obstetricians from around the state told us what should happen to improve care. They also told us that they want to be a part of the process to overhaul the perinatal health care system.

From the initial phase of this study, it appears that most elements of a cohesive system of care are available and possible. Instead of local and regional systems, however, we need to move toward a statewide approach. We need to better utilize new methods of communication, assure a statewide emergency transportation system, provide better support for medical professionals in rural areas, better utilize our perinatal intellectual resources, and more fully implement parent support and education programs already available but underutilized and underfunded.

West Virginians have a history of working together. In perinatal health we have periodically come together to review and revise how we care for women and children. **We have an urgent need to come together again, address our current problems, and use the new technologies to coordinate and support a statewide system.** The *Blueprint to Improve West Virginia Perinatal Health* can be our guide. Working together, we can make it happen.

Introduction



Nancy Tolliver, RN, MSIR

Contributors: Jeannie Clark RN; Ann Dacey BSN, RN; Clark Hansbarger, MD; Cinnie Kittle, MS; Lois Morgan RN, BSN; Pat Moore Moss, MSW

Ten years ago, West Virginia birth statistics were much brighter than today. The pre-term rate was 10.7 percent; the primary C-section rate was 16.1 percent, and the vaginal births after caesarean section (VBAC) rate was 28.3 percent. Today the corresponding data shows no improvements, in fact, we are worse than the national averages for those indicators.

WV DATA	Pre-Term Deliveries	C-Sections	VBAC
1993	10.7%	16.1%	28.3%
2003	11.6%	29.5%	16%

If West Virginia could achieve improvement in these numbers fewer babies would be lost and more dollars would be saved by health insurance payers and by the state of West Virginia.

To learn the reasons for West Virginia's poor perinatal statistics, the Claude Worthington Benedum Foundation awarded \$50,000 to the West Virginia Healthy Kids and Families Coalition and West Virginia Community Voices, Inc., to conduct a study on the current status of perinatal health in West Virginia.

Process

The study began by identifying all potential partners. Some partners made a major contribution to the study and many others offered support and help.

First Lady Gayle Manchin championed the study along with Robert C. Nerhood, MD, Chair, Perinatal Committee, District IV, American Academy of Gynecology (ACOG) and Chair of the Marshall University School of Medicine, Department of Obstetrics and Gynecology; Scott Rotruck, then CEO of the Morgantown Chamber of Commerce; Joan Phillips, MD, pediatrician and president of the American College of Pediatrics – WV Chapter; and Beverly Railey Walter, Vice President for Programs, Claude Worthington Benedum Foundation.

Two institutions dedicated staff to this Study. The West Virginia University School of Medicine, National Center of Excellence in Women's Health donated the time of Ann Dacey, project co-director. The West Virginia Hospital Association donated the time of Cinnie Kittle, Day One Coordinator.

Senator Roman Prezioso, Delegate Don Perdue and other legislators lent a hand by sponsoring a joint resolution during the 2006 regular legislative session calling for the Study. Several legislators and legislative counsels participated in the Perinatal Wellness Summit held May 18, 2006.

Identifying the Current Status

To identify the current status of perinatal wellness in the state, information and data was provided by the organizations and agencies that follow. The study focused on gathering and considering the most current and accurate data and information. Most of the data is from the 1999-2004 time period.

West Virginia Health Care Authority

The WV Health Care Authority analyzed UB-92 Hospital Discharge Data Reports for 1999 through 2004 to identify important information, including:

- Major Payer Groups
- Cesarean Section Rates by WV Hospital
- Cesarean Section Rates by Payer Group
- Vaginal Birth After Cesarean Section (VBAC) Rates by WV Hospital
- Neonatal Intensive Care Unit Utilization in WV Hospitals by Payer Group
- Neonatal Intensive Care Unit Utilization- Charges and Length of Stay
- Maternity Care in WV Hospitals –Average and Median Total Charges
- WV Hospitals and Birthing Centers Providing Maternity Services

Office of Epidemiology and Health Promotion

The State Office of Vital Records compiled numerous reports for review including births, low birth weight, infant mortality, premature birth (<37 weeks gestation), multiple births, and maternal smoking. All data are reported by births by county, by age of mother, and by race of mother. Births with abruptio placenta to mothers who smoked during pregnancy by age of mother are also reported. The Office reported certain medical risk factors identified by the West Virginia birth certificate, including diabetes, chronic hypertension, hypertension associated with pregnancy, eclampsia, abruptio placenta, labor induction followed by c-section rates for first time mothers, transfer of infant to a tertiary care facility, neonatal deaths, and postneonatal deaths.

Office of Maternal, Child, and Family Health

The Office of Maternal, Child and Family Health in the WV Department of Health and Human Resources contributed several reports including the WV Pregnancy Risk Assessment Monitoring System (PRAMS). PRAMS is an ongoing, population-based surveillance system designed to identify and monitor selected maternal experiences and behaviors. The Office also provided a comprehensive report, *Perinatal Care: Improving Pregnancy Outcomes 5/4/06*, defining the infrastructure of care providers, progress made in access to care, and identifying some of the major medical and social factors affecting pregnancy outcomes.

The West Virginia University School of Medicine, Department of Pediatrics, **Birth Score Program**, provided an analysis of the experiences of 12,756 pregnant women, some receiving Right From the Start (RFTS) services and some not. This information is extremely useful. It demonstrates that West Virginia has a program in place that has made significant progress toward improving pregnancy and newborn outcomes. However, only 52 percent of the women eligible for RFTS receive services.

The Women, Infants and Children (WIC) Program

WIC is a federally funded program under USDA, that provides education and food for those qualifying for the program. WIC provided a report regarding breastfeeding rates of WIC participants for 2004.

Gathering Statewide Input

Professionals from all over West Virginia provided information for the study. Hearing and understanding the experiences and opinions of perinatal providers across the state gave us important information with which to understand the data collected. It also allowed us to question the completeness of some methods of collecting and reporting data that are used for program development purposes. Several surveys to gather input from perinatal providers across the state were conducted.

Surveys conducted as part of this study include:

Worksite Wellness and Perinatal Health Survey: Nationwide, many companies have found they can save money in insurance costs because of better pregnancy outcomes with worksite programs focusing on prenatal wellness. The March of Dimes found that it is not uncommon for companies to spend 50 percent or more of their total health care bills on pregnancy related costs. We attempted to survey businesses in West Virginia, sending surveys to all members of the Wellness Council of West Virginia and posting the survey on our website. Only seven companies responded to the survey and none reported a focus on perinatal wellness.

Perinatal Education and Support Programs and Services Survey: In an effort to learn more about education and support programs and services available to pregnant women and new mothers in West Virginia, we sent more than 1,800 surveys to potential providers during April 2006 and posted the survey on the web site. The surveys focused on three categories of providers:

- Non-hospital and hospital-based breastfeeding education programs
- In-home and out-of-home perinatal education and support programs
- Perinatal product retailers

Although the return on the survey was not extensive, the information gained was extremely valuable in identifying gaps in services and needed improvements. The survey results are used in this report in establishing policy recommendations related to improving breastfeeding, nutrition, and parent support.

The West Virginia Key Informant Survey sought opinions and experiences of medical and nursing providers of perinatal care regarding why West Virginia has not made the same progress in reducing infant mortality and low birth weight as the rest of the nation. The survey was intended to reach those practicing in rural areas of the state, as well as urban areas. It was the hope of the study that West Virginia medical and nursing personnel, not able to participate in the Perinatal Wellness Summit, could provide their expert opinions and experiences to the issues.

The West Virginia Key Informant Survey was conducted from March 21, 2006 through May 2, 2006. The survey tool contained two open-ended questions to gain the opinions of health professionals regarding 1) health and health care concerns related to the state's continuing high rate of infant mortality, and 2) potential solutions that should be considered to help reverse the current trend in infant mortality. The survey was conducted through a variety of methods, including U.S. Postal Service, web site posting, fax, and e-mail.

The survey was conducted with the assistance of the following professional associations:

- The American Academy of Pediatrics – West Virginia Chapter
- The American College of Obstetricians and Gynecologists - National and West Virginia Chapters
- The American College of Nurse Midwifery – West Virginia Chapter
- The West Virginia Hospital Association
- The West Virginia State Medical Association

The West Virginia Key Informant Survey findings served as the primary source for policy priorities identified during the West Virginia Perinatal Wellness Summit on May 18, 2006. The survey response rate was excellent. The provider types, number and percent responding are listed in the chart on the next page.

Provider Type	Number Delivering In 2006	Number on Distribution List	Number Responding to Survey	Percentage Survey Respondents to Providers
Obstetrician/Gynecologist	145		33	28%
Certified Nurse Midwives	41		19	46%
Family Practice Physicians	19		5	26%
ER Physicians	0		2	
Pediatricians	0	198	38	19%
Hospitals & Birth Centers	34	34	21	62%

In addition, expert presenters for the Summit submitted policy recommendations for consideration.

Summit Gathering: On May 18, 2006, eighty perinatal care providers gathered in Charleston to present additional information that could be used to further analyze the problems and identify potential solutions. This prestigious group included representatives of each professional association focused on perinatal care: hospitals, tertiary care facilities, obstetrical and pediatric residency programs, and outreach programs in the state.

Topics presented include the following listed by presenter:

- The State of Perinatal Wellness in WV – *Robert Nerhood, MD*
- What We Know From Birth Score – *Martha Mullett, MD*
- Leading Medical Cause of Prematurity & Eclampsia – *David Chafin, MD*
- Perinatal Healthcare Disparities in WV – *Luis Bracero, MD*
- Mother’s Little Helper: What Do Pregnant Smokers Have to Say? – *Robert Anderson, MA*
- Oral Health and Perinatal Wellness – *Richard Meckstroth, DDS*
- Key Informant Survey Findings – *Nancy Tolliver, RN, MSIR*
- Obstetrical Providers in WV – *Ann Dacey, RN, BSN*
- Prenatal Drug Abuse – *Stefan Maxwell, MD*
- WV Neonatal Transport Data – *Janet Graeber, MD*
- Cost Savings Resulting from Improved Perinatal Outcomes in WV – *Calvin Kent, PhD*
- ANGELS Program – Arkansas – *Curtis Lowery, MD*
- Perinatal Policy Implications to Consider – *Pat Moore-Moss, MSW*

Information and data from each of the presentations was essential in formulating the policy priority recommendations that appear later in this report.

Chapter 1

Perinatal Health in West Virginia – Changes Over Time

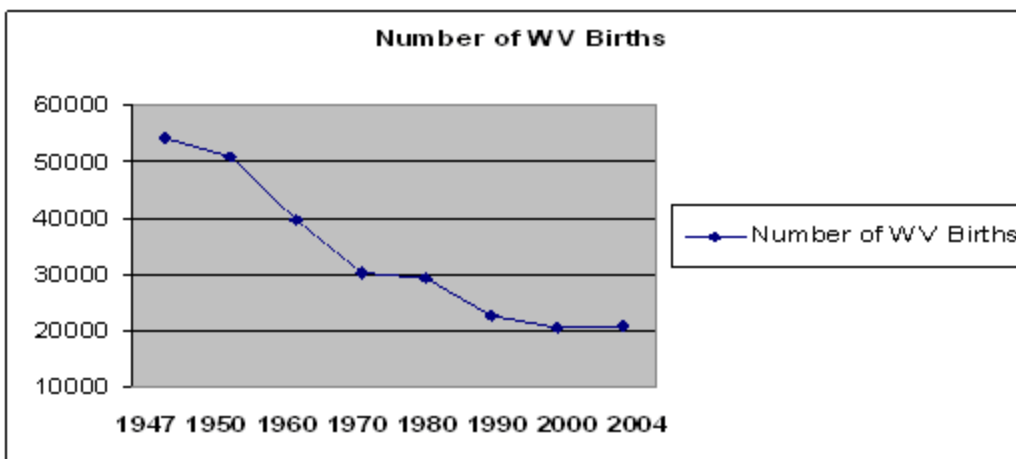
Population and Health Outcomes

Ann Dacey, RN, BSN

Contributors: Tom Light, BA; Daniel Christy, MPA

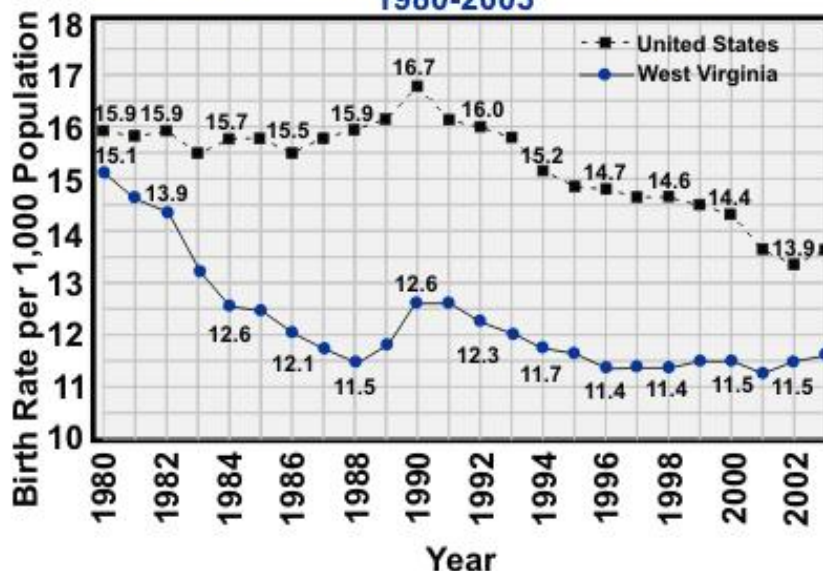
Population Trends 1947 – 2004: Since 1947 the size of the population, numbers of births, birth rates, and infant mortality have all declined in West Virginia. Although there have been very slight increases in some years, the annual number of births in West Virginia has declined from a high of 54,170 in 1947 to 20,911 in 2004. West Virginia’s population peaked in 1950 with 2,005,552 people and has stayed about 1.8 million since 1992.

Year	1947	1950	1960	1970	1980	1990	2000	2004
# Births	54,170	50,850	39,696	30,194	29,438	22,582	20,860	20,911
Population (millions)	1.84	2.01	1.86	1.74	1.94	1.79	1.81	1.82



West Virginia’s birth rate has been below the national average since 1980. In 2004, the overall birth rate was 11.5 births per 1,000 population compared to a U.S. rate of 14.1 per thousand.

West Virginia and United States Birth Rates 1980-2003



Teen Birth Rate: The teen birth rate in West Virginia has declined by 23 percent since 1991. In 2003, West Virginia’s teen birth rate was higher than the national average but it was the birth rate to older teens ages 18 – 19 that accounted for this. West Virginia was below the national average in births to younger teens ages 15 – 17.

West Virginia and U.S. Teen Birth Rates 15-19 in 1990 and 2003		
	1991	2003
West Virginia	58.0	44.8
United States	61.8	41.6

2003 WV and U.S. Teen Birth Rates 15-19			
	Total Teen Birth Rate	Teen Birth Rate Ages 15 - 17	Teen Birth Rate Ages 18 - 19
West Virginia	44.8	21.1	79.7
United States	41.6	22.4	70.7

Births to Unmarried Women: The percentage of births occurring out of wedlock has been slowly rising in West Virginia, particularly among unmarried teen mothers where it rose from 71.4 percent in 2002 to 76.5 percent in 2004. In 1950, five percent of births were to unmarried women. In 2004, 34.7 percent of births were to unmarried women.

Percent Of Births To Unmarried Women		
1950	2004	2004
All Women	All Women	Teens
5%	34.7%	76.5%

Infant Mortality Rate: Infant mortality is the result of a complex set of biological and social factors, and infant deaths have long been viewed as an important indicator of a population’s health. From 1976 to 1988 there was considerable effort in West Virginia to reduce the incidence of neonatal mortality and post-neonatal mortality. The infant mortality rate in West Virginia made the most rapid decline in the 1970s and continued to decline in the 1980s until 1989. Many factors may be responsible for the decline. The advent of a strong federal and state supported family planning program and the legalization and availability of abortion may also have played important roles in reducing infant mortality. For most of the 1980s the infant mortality rate in West Virginia was below the national average.

While the rest of the nation has shown an almost steady decline in the rate of infant mortality since 1994, West Virginia’s rate has remained slightly above the national average for each of the last 10 years. Because of the relatively low numbers of births in West Virginia, it is best to look at infant mortality rates in five-year averages.

The average infant mortality rate for the last five years of available data shows West Virginia’s infant mortality rate higher than the national average.

U.S. and WV Infant Mortality Rates 2000 – 2004						
Year	2000	2001	2002	2003	2004	Average
WV	7.6	7.3	9.1	7.3	7.6	7.8
U.S.	6.9	6.8	7	6.9	6.8	6.9

Smoking and Alcohol Use During Pregnancy: West Virginia leads the nation in the percentage of women who smoke during pregnancy. The national percentage is just over ten percent and the percentage of West Virginia women who smoke is close to 26.8 percent. There has been little improvement since 1990 when it was 27.3 percent. Forty-one percent of Medicaid covered pregnant women smoke. In 2004, women who smoked experienced more low birth weight babies than women who did not smoke. Alcohol use among West Virginia pregnant women is lower than the national rate.

Smoking and Alcohol Use Among Pregnant Women		
	% Women who smoke	% Women who use Alcohol
West Virginia	26.8% (2004)	0.6% (2004)
United States	10.2% (2002)	0.8% (2002)

Smoking and Low Birth Weight Babies	
Percent of Babies Born Low Birth Weight in 2004	
WV Pregnant Smokers	14.3%
WV Pregnant Non-Smokers	7.2%

Low Birthweight Births and Prematurity

Prematurity and smoking are the leading causes of low birth weight. West Virginia has had a higher than national average percentage of low birth weight babies every year since 1994. Likewise we have had a higher average of premature births every year since 1995.

US and WV Percentages of Low Birth Weight Babies												
Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
WV	7.2	7.5	7.9	8.0	8.3	8.0	8.0	8.3	8.5	9.0	8.6	9.3
U.S.	7.2	7.3	7.3	7.4	7.5	7.6	7.6	7.6	7.7	7.8	7.9	8.1

Since the annual numbers of births to black women are so much smaller, five-year averages are shown on the next page.

Prenatal Care

Early prenatal care has been associated with better birth outcomes. West Virginia women have received early and adequate prenatal care at rates better than the rest of the country since 1998. In 2004, 86 percent of West Virginia mothers with known prenatal care began their care during the first trimester of pregnancy, compared to 83.9 percent of mothers nationwide in 2004.

Some Data on West Virginia Births by Race

West Virginia has little racial diversity with less than 5 percent of all births to women of non-white races. Among women with known prenatal care, more white mothers than black mothers began care during the first trimester. African American women are much more likely to have a low birth weight baby or death of a baby than a white woman.

2004 WV Births by Race			
Factor:	White	African-American	Other
Number of Births	19,982	661	268
Percent of all Births	95.6%	3.2%	1.3%
1st Trimester Prenatal Care	86.3%	76.3%	8.2%
No Prenatal Care	0.6%	1.1%	**
Infant Mortality Rate	7.4	15.1	3.7
Low Birth Weight	9.2%	14.2%	6.2%

Since the annual numbers of births to black women are so much smaller, five-year averages are shown below.

Low Birthweight Births by Race of Mother West Virginia Residents, 2000-2004 Excludes Unknown Birthweights			
Race	Number of Births	Low Birth- Weight	Percent of Total
White	99,479	8,676	8.7%
Black	3,509	473	13.5%
All Other	924	80	8.9%
WV Total	103,912	9,229	8.9%

Mothers Who Smoked During Pregnancy by Race of Mother West Virginia Residents, 2000-2004			
Race	Number of Births	Mothers Who Smoked	Percent of Total
White	99,479	26,339	26.7%
Black	3,509	935	26.8%
All Other	924	69	7.7%
WV Total	103,912	27,343	26.5%

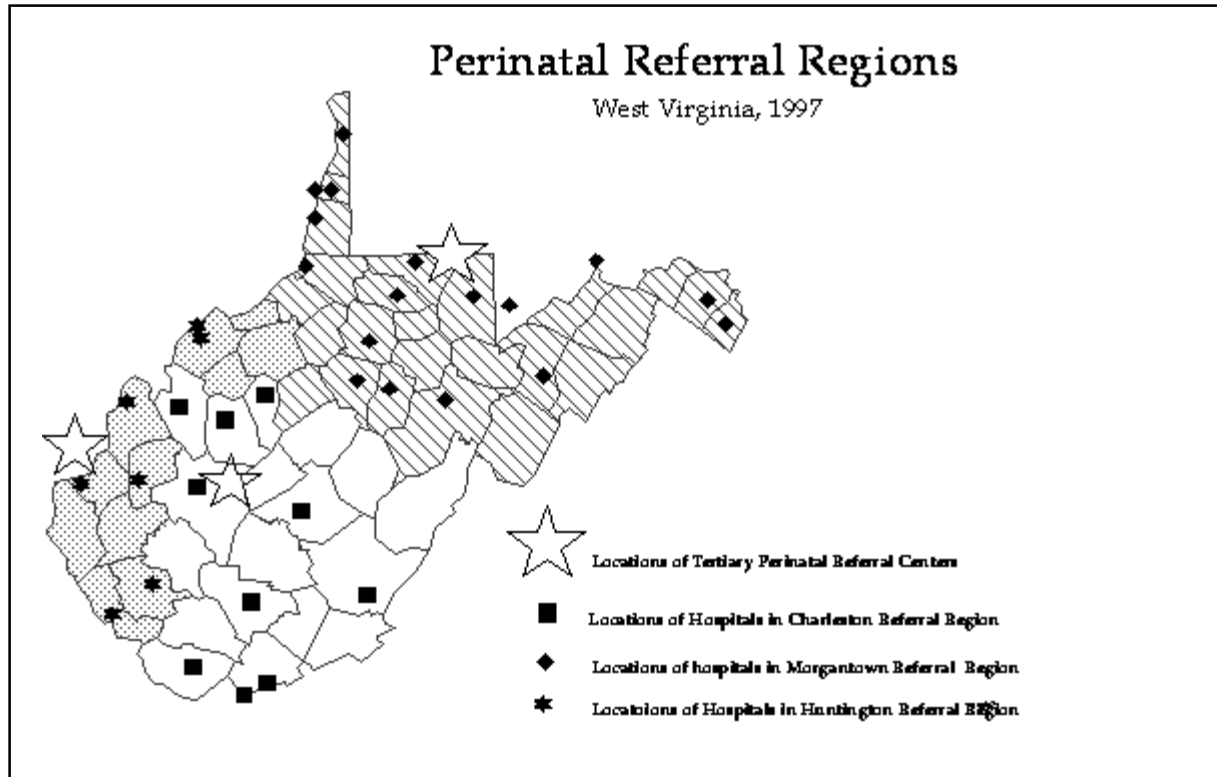
Note: Percentage excludes unknown smoking status

Infant Deaths by Race of Mother West Virginia Residents, 2000-2004			
Race	Number of Births	Number of Infant Deaths	Rate per 1,000 Births
White	99,479	744	7.5
Black	3,509	62	17.7
All Other	924	1	1.1
WV Total	103,912	807	7.8

Regionalization and Outreach Education

Ann Dacey, RN, BSN

Contributors: Stephen Bush, MD; Brenda Daugherty, RN, MSN, NNP; Janet Graeber, MD; Diane Kopcjal, RN, MSN; Pat Moore-Moss, MSW; Marlene Merkel; Martha Mullett, MD; Robert Nerhood, MD; Barbara Nightengale, RN, NNP; Susan Watkins, RN, MSN.



A system of perinatal regionalization has been in place in West Virginia since the mid 1970s shortly after neonatal intensive care units (NICUs) were opened in Morgantown, Huntington, and Charleston. The Charleston and Morgantown centers are affiliated with West Virginia University School of Medicine Departments of Pediatrics and Obstetrics and Gynecology. The Huntington facility is affiliated with Marshall University School of Medicine Departments of Pediatrics and Obstetrics and Gynecology.

In 1975, the Maternal and Child Health Division of the West Virginia Department of Health funded the *West Virginia Committee for Perinatal Health* to plan and implement regionalization of perinatal care in the state. Reports and recommendations from this committee were published in 1976 and 1979. Title XIX federal funding further supported education and outreach in a program called the *West Virginia Improved Pregnancy Outcome Project*. When that funding ended in the early 1980s, the West Virginia Bureau for public health continued to support regionalization.

Unlike other states that closed low volume obstetric facilities, West Virginia elected to develop a perinatal outreach education and referral system. The motivating factor for this decision was geography, mountainous terrain, winter road conditions, and the philosophy that while not every community could offer specialized care, all West Virginia women should have basic, low-risk maternity services as close to home as possible. In spite of ongoing support for regionalization, many community hospitals closed their obstetric and newborn

services in the early 1980s. In cities where there were duplicate facilities, some services merged. (See map of closed obstetric/newborn facilities at the end of this section.)

Perinatal regionalization in the state of West Virginia was developed to make all levels of perinatal care available to all pregnant women and newborns no matter where they lived. The secret to the success of regionalization was communication and the regional backup of facilities that were not equipped to handle complications.

Each of West Virginia tertiary perinatal centers has a 24-hour perinatal consultation “telephone hot line,” a high-risk prenatal clinic, and a high-risk labor and delivery unit. Charleston and Huntington each have two perinatologists but WVU Hospitals in Morgantown currently has none.

All the tertiary care centers have neonatal intensive care units and 24-hour neonatal transport teams staffed by neonatal nurses or neonatal nurse practitioners. These transport teams stabilize and transport sick babies from their referral hospitals. Both helicopters and ambulances are used. Neonatal transport teams have been in place at the three tertiary care centers since the mid 1970s. In addition to neonatal transport teams, Cabell-Huntington Hospital has had a maternal transport team in place since 1977 utilizing both ground and air transport.

Along with communication, another very important element of perinatal regionalization is outreach education. ACOG/AAP standards emphasize the importance of outreach education from tertiary care centers. The West Virginia DHHR, Bureau for Public Health, Office of Maternal, Child and Family Health (OMCFH) funded perinatal outreach education from the 1970’s until June 2003. In funded contracts with the bureau, each of the tertiary perinatal facilities agreed annually to provide:

“...regionalized Outreach Education Program to support health care providers of their regions in the care of high-risk prenatal patients and neonates, in general, to improve the pregnancy outcome and reduce infant mortality and morbidity in their regions...”

Each tertiary center had a team of obstetrical and neonatal nurse specialists, perinatologists, and neonatologists who were funded to provide outreach education. Although there were slight variations in each region, the outreach educators provided workshops and programs for health professionals of their referral hospitals. Equally important to the educational aspects of outreach programs were the interpersonal contacts between the parties involved and the consequent networking between providers that significantly facilitated interactions between the referring and accepting entities at all levels.

State funding for outreach and education ended in 2003. In spite of loss of funding, the three tertiary care centers have continued some hospital visitation and education upon request.

The need to re-establish a coordinated statewide perinatal system, which includes training and education, has been cited in surveys and meetings that led to this *Blueprint*.

Institutions Providing Obstetrical and Neonatal Care – NICU Beds

Nancy Tolliver, RN, MSIR

Contributors: Ann Dacey, RN, BSN; Janet Graeber, MD; Canny Kittle, MS; Stefan Maxwell, MD; Lois Morgan, RN, BSN; Martha Mullett, MD, MPH; Robert Nerhood, MD; Barbara Nightengale, RN, NNP, MSN

The West Virginia Health Care Authority regulates the number of hospital and birthing center beds and the level of care that can be provided within these beds through the Certificate of Need (CON) process. Generally, the number of obstetrical and newborn beds approved is dictated by the total number of deliveries within a certain driving distance around the service area of the facility. In addition, the level of care is a system of identifying care provision according to the complexity and sophistication of the care needed.

Birth Centers: Birth centers are not licensed as hospitals and provide the least obstetrical medical intervention. Birth centers provide professional care to medically low risk women during pregnancy, birth and immediately following childbirth. Birth centers are designed for women with non-complicated pregnancies, with an anticipation of a low risk delivery and discharge of the mother and infant within 24 hours after birth.

In West Virginia, the first birth center services were established at the West Virginia School of Osteopathic Medicine in Lewisburg and at Glendale in the mid 1970s. Birth centers became subject to the Certificate of Need (CON) process in the late 1970s and new centers opened in Charleston, Rainelle, Hurricane, and Scarbro. As of 2006, only the Hurricane site, WomenCare, Inc. continues to offer delivery services.

Level I Hospital Obstetrical Units: To receive a CON as a level I obstetrical unit, a hospital must show that it would perform at least 750 deliveries annually, or fewer than 750 if the absence of the service would result in a population of 5,000 or more being 30 minutes driving time from another obstetrical unit. A level I obstetrical unit is described as one that provides services primarily for uncomplicated maternity and newborn patients. All but nine of the 34 obstetrical facilities in the state provide fewer than 750 deliveries annually.

Level II Hospital Obstetrical Units: A level II hospital obstetrical unit must provide a full range of maternal and newborn services for uncomplicated births and for the majority of complicated obstetrical problems and certain neonatal illnesses. To receive a CON as a level II unit, a hospital must provide at least 1,100 deliveries annually.

Both level I and level II obstetrical and neonatal units must have written policies defining the level of birth risk and newborn complications that they will attempt to serve, as opposed to patients they will refer to higher-level facilities.

Level III Hospital Obstetrical Units: The WV Health Care Authority limits the designation of level III obstetrical units, as well as tertiary care pediatric units and neonatal intensive care units, to just three institutions in the state: West Virginia University Hospitals, Inc., Charleston Area Medical Center, and Cabell-Huntington Hospital. All three are associated with obstetrical and pediatric medical residency programs and maintain high technology equipment and medical experts in maternal-fetal medicine and other specialties. In addition to serving women and infants for all the serious types of maternal-fetal and neonatal illnesses and abnormalities, they also provide for normal, uncomplicated deliveries.

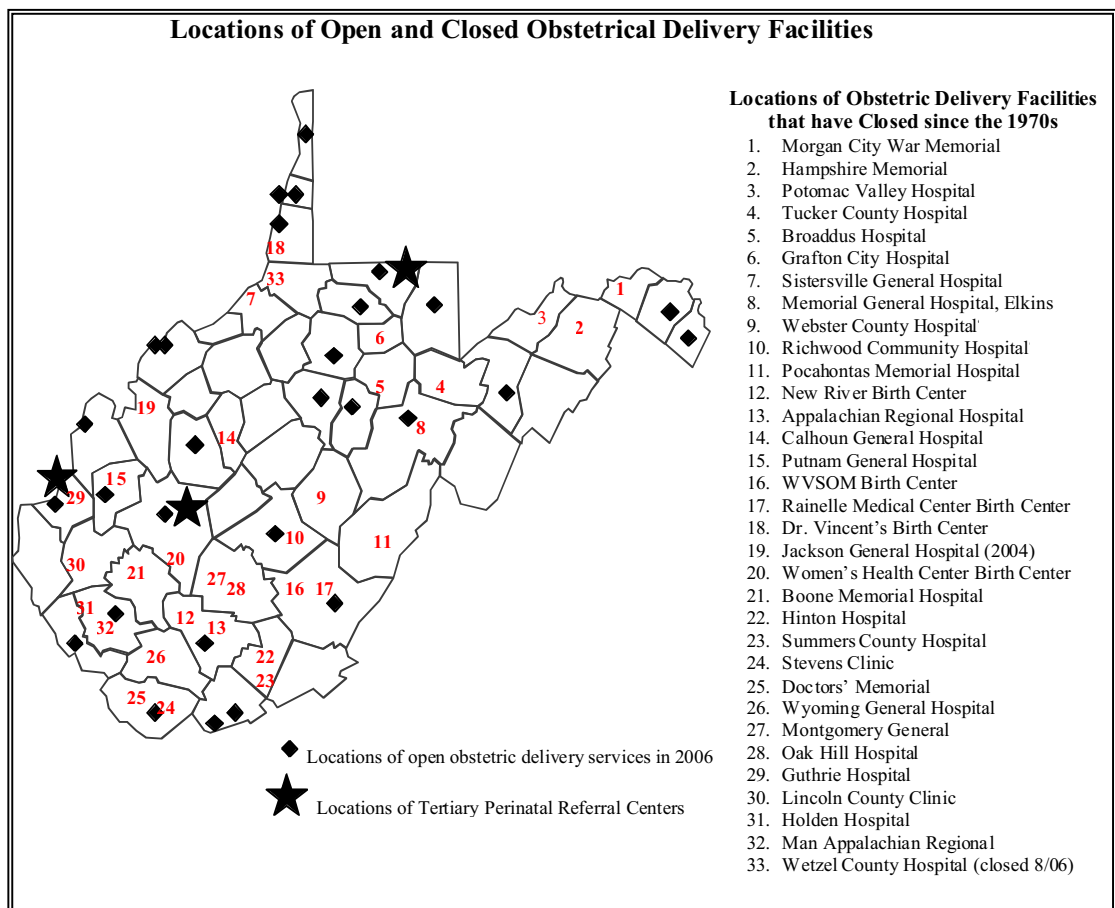
Level III Neonatal Intensive Care Units (NICU): NICUs are established within hospitals to provide extraordinary surveillance and support of vital functions and definitive therapy for infants having acute or potentially reversible life threatening impairment of vital systems. NICU beds are limited by the CON process to the three tertiary care centers, West Virginia University Hospitals, Inc., Charleston Area Medical Center, and Cabell-Huntington Hospital.

Number of Births By Facility: Of thirty-four birthing facilities in West Virginia, five hospitals reported more than 1,100 births each during 2004. According to West Virginia Health Care Authority discharge data, from 1999 through 2004, five facilities provided for an average of over 9,700 births a year, representing 47.8 percent of the births in the state. These facilities were:

- Cabell-Huntington Hospital
- Camden-Clark Memorial
- Charleston Area Medical Center
- Raleigh General Hospital
- West Virginia University Hospitals

Four hospitals reported between 750 and 1,100 births in 2004. During the years of 1999-2004 four hospitals provided for an average of 3,434 births annually, representing 16.8 percent of the births in the State. These hospitals were:

- Bluefield Regional Medical Center
- City Hospital
- United Hospital Center
- Wheeling Hospital



The remaining facilities all reported fewer than 750 births during 2004. These facilities provided for an average of 7,166 births annually (1999-2004), representing 35 percent of the births in the State. Since the 1970s, 33 licensed obstetrical delivery facilities have closed.

Providers of Obstetrical Care

Ann Dacey, RN, BSN; Stephanie Nicodemus, CNM; Nancy Tolliver, RN, MSIR

Contributors: Cindy Brown, CNM, MSN; James Brown, MD; Martha Carter, CNM, MSN; Allan Chamberlain, MD; Jann Foley, CNM, MSN; Evan Jenkins, Esq.; Ian Leggat, MD; Robert Nerhood, MD; Angelita Nixon, CNM, MSN; Thompson Percy, MD; Gary Thompson, Amy Tolliver, MS

No study of the numbers of obstetrical providers would be complete without a history of the practice environment in West Virginia, a discussion of malpractice liability, and reimbursement policies. In the 1980s, the news in West Virginia was full of stories about malpractice premiums rising and the large numbers of obstetricians leaving the state. Also making the news was Medicaid's low reimbursement rate for obstetrical services. The conventional wisdom was: **Low Medicaid Reimbursement + Rising Malpractice Premiums → Loss of Obstetrical Providers**

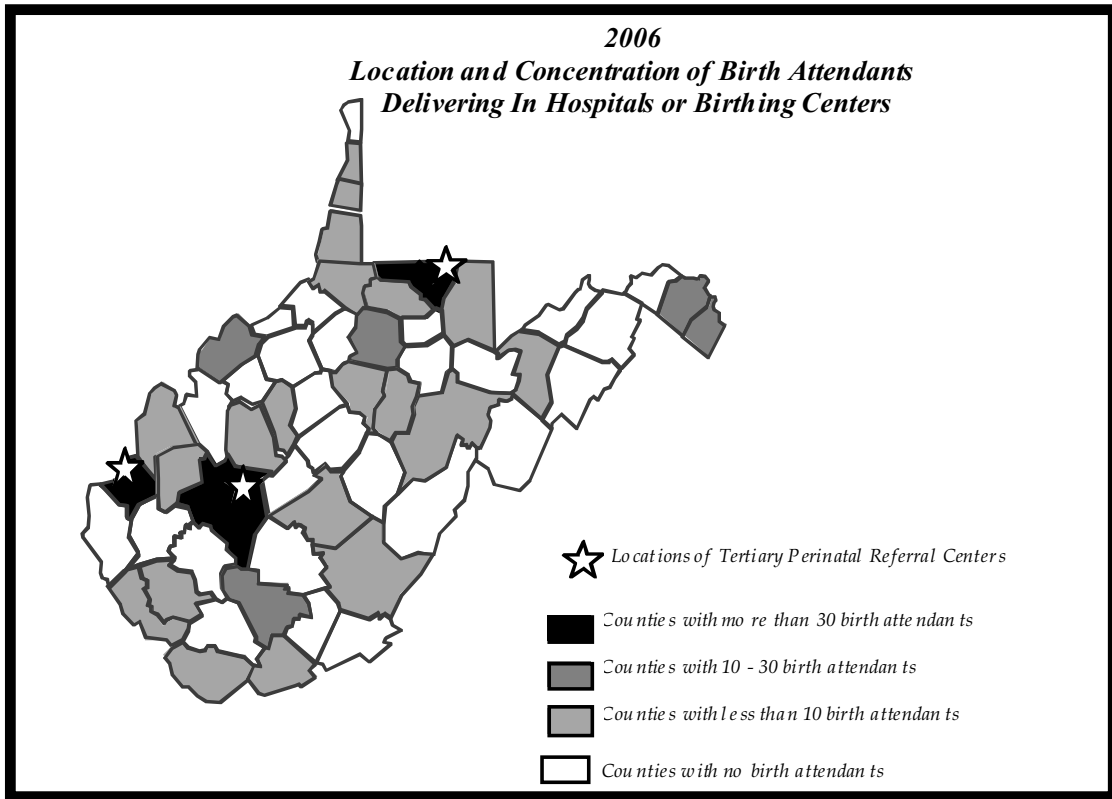
Physicians

Number of Obstetrical Providers: It remains unclear as to exactly how many obstetricians stopped providing obstetrical services in the 1980s and 1990s. A study completed in 1989 showed that 179 physicians (133 ob/gyn and 46 family-practice) were delivering babies in West Virginia in that year. The study also showed that between 1987-1989, 110 physicians (37 ob/gyn and 83 family practice physicians) had stopped delivering babies. The most frequent reason given for stopping delivering babies was the cost of malpractice premiums. The second most important reason given was that the hospital had dropped its obstetrical service.

A second study in 1992 confirmed the numbers of the previous study and showed that the number of providers delivering babies had stabilized.

Another study was completed in 2006 and presented at the 2006 Perinatal Wellness Summit held in Charleston. This study showed a slight increase in the number of obstetric providers and a slight decrease in the number of births. Both the 1992 and 2006 studies showed a shortage of obstetric providers in rural areas of the state.

The 2006 study showed an increase in the number of certified nurse midwives (CNM) and a decrease in the number of family practice physicians (FP) attending births. Most of the family practice physicians who attend births are faculty in family practice residency programs.



Birth Attendants in West Virginia*			
<i>*Numbers do not include residents in training.</i>			
	1989	1991	2006
Ob/Gyns	133	115	145
Family Practice	46	40	19
CNMs		8	41

Certified Nurse Midwives

Because of geography, a high number of low-income residents, and the cost of medical liability coverage, the state of West Virginia has come to rely on health care providers other than private practice physicians and on the establishment of nonprofit community health centers.

In the early 1900s, according to West Virginia writer and historian, Ancella Bickley, lay midwives attended most West Virginia births. To support their work, training and a registry was developed by the State Department of Health. In the mid 1920s, 558 midwives were registered in West Virginia. By 1959-60 only 77 were registered. In the decades to follow, the practice of lay midwives succumbed to that of college educated medical professionals.

The development of a professional workforce took place over decades through the efforts of state health policy officials, professional associations, and members of the West Virginia State Legislature. Special attention was given to geographic areas where access to care was limited. Since the 1970s, 34 nonprofit community health centers with over 137 sites have been established with federal and State support. Today, 10 of those centers offer prenatal care at 28 sites.

A strategy for workforce development in West Virginia was to support and promote non-physician medical professionals. Certified nurse-midwives (CNM), nurse practitioners, and physician assistants (PAs) have all become credible and valued health care professionals in West Virginia. Many are providing care in areas of the state that lack an adequate numbers of physicians.

Certified nurse-midwives (CNMs) gained legal recognition in West Virginia in 1973 and five or six CNMs were licensed to practice. By 1993 CNMs became recognized as independent providers with prescriptive authority.

To support and promote the practice of CNMs, the Local Availability Project (LAP) was established with funding from the Robert Wood Johnson Foundation and the state. LAP provided educational stipends to nurses seeking to become nurse-midwives and nurse practitioners, who agreed to work in West Virginia after completing their education. LAP was targeted for counties experiencing a low percentage of women receiving prenatal care in the first trimester, counties that lacked an adequate number of obstetrical providers, counties with a high incidence of low-birth-weight babies, and generally areas of the state with a high infant mortality rate. LAP met the growing need for obstetrical professional services in West Virginia's rural health professional shortage areas.

According to the 1992 report by the LAP program director, nineteen nurses had been supported by the LAP program and were practicing in West Virginia. All but two had become certified nurse midwives and the other two had become obstetrical-gynecological nurse practitioners.

In 1991 the LAP program attracted additional grant funds from the Claude Worthington Benedum Foundation for the purpose of establishing a midwifery education program. The partnering organizations were West Virginia University School of Nursing and Charleston Area Medical Center. After just one year the effort was abandoned due to what was said to be an inability to attract faculty.

The LAP program is one of West Virginia's important accomplishments toward increasing the availability of medical practitioners for perinatal care. Future plans to address the lack of perinatal providers in the state should give serious consideration to reinventing proven programs such as LAP.

The practice of nurse midwives was also supported as more and more women sought the services of CNMs and a birth center setting for their own obstetrical care. Obstetricians in private practice began welcoming CNMs into their practices. By 2006 the number of certified nurse-midwives providing prenatal care and assisting in deliveries in the state had reached 41.

With the number of certified nurse midwives practicing in the state, faculty recruitment for a school of midwifery may not face the same obstacle as was faced in 1991.

Reimbursement Rates: Reimbursement rates have concerned obstetric providers over the past three decades. Medicaid reimbursements for obstetric services are lower than commercial and private insurance payments. Low Medicaid reimbursement rates affect rural obstetric providers more than urban because less privately insured patients tend to live in rural areas. Medicaid currently covers about 54 percent of all the births in West Virginia. At one rural West Virginia hospital, Medicaid pays approximately 75 percent of the births.

In the 1980s, Medicaid reimbursements for obstetric procedures were only about one-fourth of the standard rate for obstetrical services. Concerns about Medicaid reimbursement led female legislators to stop the state legislative session in its final days by staging a walkout. After obstetricians threatened to stop providing services and some actually stopped providing services, Medicaid raised its reimbursement rates to cover about half the costs to physicians.

In 2006, Medicaid reimbursements for obstetrical services are less than one half of the average charges and lower than the reimbursement rate of private insurance carriers.

Reimbursement Rates for Deliveries in West Virginia in 2006			
Service Provided	Average Charges	Average Private* Insurance Reimbursements	WV Medicaid Reimbursements
Vaginal Delivery & Care	\$3,905.00	\$2,578.31 (66%)	\$1,574.47 (40%)
C-Section & Care	\$4,262.00	\$3,007.53 (71%)	\$1,753.26 (41%)

**Blue Cross/Blue Shield, PEIA, Select Net, Cigna/Connecticut General, CareLink, Aetna
Source: Private Obstetrician Practice Billing Department*

Some insurance companies reimburse certified nurse midwives at lower rates than physicians. For example, one midwife reported that a self - funded plan reimburses nurse midwives 60 percent of what they reimburse physicians. Carelink, Cigna, and Health Assurance do not reimburse certified nurse midwives.

Medical Liability Concerns

The Malpractice Premium Crisis: Obstetricians and gynecologists are sued more often than most other specialists and West Virginia Ob/Gyns have the second highest liability premiums of any medical professional in the state. According to a press release from the University of Michigan on June 1, 2005: “Malpractice insurance premiums vary widely from state to state. Florida is the highest-premium state, with an average 2004 premium of more than \$195,000, followed by Nevada, Michigan, the District of Columbia, Ohio, Massachusetts, West Virginia, Connecticut, Illinois and New York.”

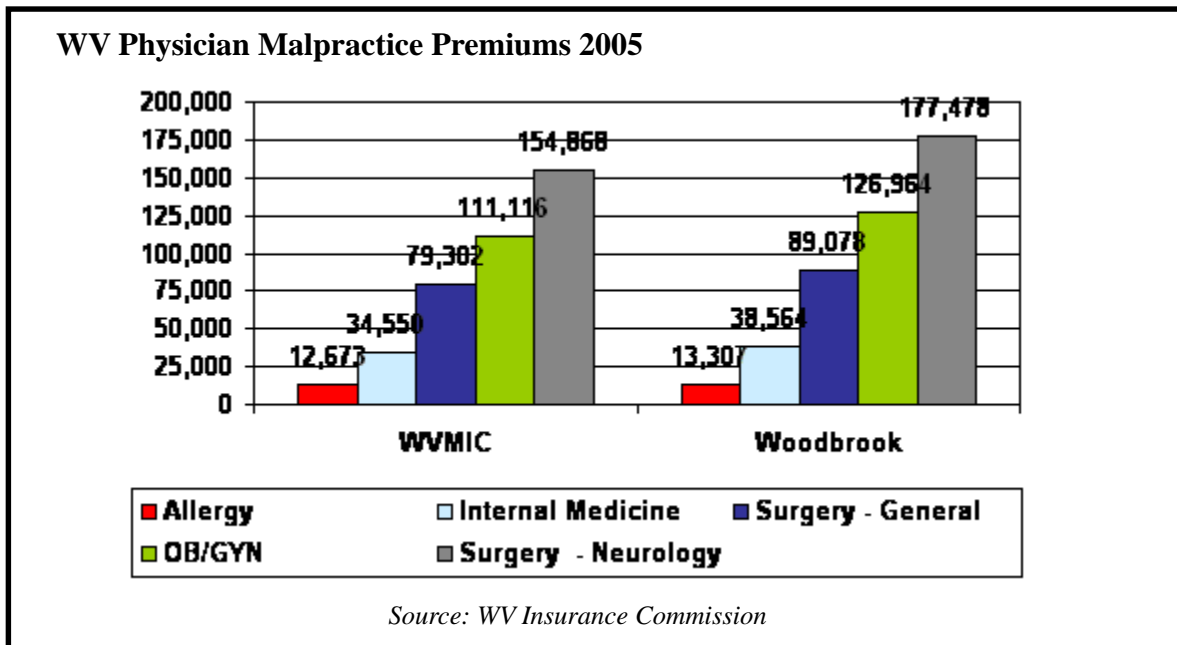
Malpractice premiums began to rise dramatically in the 1980s. In 1985, the Charleston Gazette reported that: “Dr. Fred VanWinkle announced earlier this year that he was leaving his obstetrical practice after 21 years because his premiums more than doubled from 1984. VanWinkle said his malpractice premium is \$40,288 this year while he paid only \$18,000 last year.”

After malpractice premiums continued to rise in the 1990s and early 2000s, the West Virginia Legislature passed medical liability reform legislation in 2002 and 2003; and according to the State Medical Association, physicians are now beginning to see some relief. Writing in the Heartland Institute in 2005, the executive director of the West Virginia State Medical Association said, “We still have an affordability crisis in West Virginia, but every indicator at this point is very promising, suggesting rate relief.”

West Virginia Obstetrics and Gynecology Private Practice Malpractice Premiums	
1984	\$18,000
1985	\$40,288
1997	\$100,000*
2000	\$147,000*
2005	\$111,000 – 127,000

**Ob/gyn in private practice in WV*

Two companies now insure the majority of West Virginia physicians: The West Virginia Mutual Insurance Company (WVMIC) insures 75 percent and Woodbrook Casualty insures 16.1 percent.



Malpractice premiums are considerably lower for obstetricians and certified nurse midwives if medical schools employ them. In addition, the federal government provides malpractice coverage at no cost for the Section 330 Community Health Centers (FQHCs) and Free Clinics through the Federal Tort Claims Act. At least two FQHCs in WV have become associated with private OB/GYN practices in order to maintain access to OB/GYN care in their communities by providing for liability coverage under FTCA.

Not all privately insured obstetricians who see Medicaid patients are happy that others receive subsidized liability insurance. Some privately insured obstetricians feel that any providers, who could show that they accepted patients without regard to ability to pay, and demonstrated that they served some proportion of poor, indigent and/or rural patients should get access to subsidized rates. Some feel that any providers who impose financial or location access barriers (e.g. no patients from certain counties) should risk losing their subsidies. The State of Tennessee is considering establishing a medical liability insurance premium subsidy program for sole community hospitals and obstetricians whose practices include a specified percentage of Medicaid and uninsured patients.

From time to time medical liability coverage has been eliminated completely for Certified Nurse Midwives. In the 1980's almost all CNMs practicing in the state were notified that their coverage would be discontinued, causing the closure of some birth centers. CNMs have not, however, experienced the same medical liability expenses of obstetricians. CNMs pay around \$12,000 – \$20,000 a year for malpractice with rates increasing the longer the CNM is in practice.

Tail Insurance: Another increasingly costly financial burden is tail insurance. When providers leave their practices and want to continue practicing elsewhere, they must purchase “tail insurance” to cover an extended reporting period equal to the statute of limitations for any malpractice cases which may be filed. The tail is a one time only payment that covers providers for suits that occur after leaving their practices. With obstetrical coverage, the extended reporting period continues until the last baby delivered reaches the age of majority. The cost of tail insurance coverage can be up to 200 percent of the final yearly malpractice premium, but providers have no guarantee as to what the tail insurance will cost. In addition, savings for tail insurance are considered income and taxed, sometimes doubling the effective cost.

Hospital Liability: The cost of hospital liability insurance has been cited as a reason for hospitals closing obstetric facilities. An obstetrician at a small rural hospital, which closed its obstetric unit in 2006, stated that the hospital’s liability dropped by \$250,000 per year while his premium (which is covered by the hospital) only dropped by \$6,000 per year. Since rates are set for hospitals in the state regardless of the number of deliveries performed, smaller hospitals with fewer deliveries pay a higher premium per delivery.

Emerging Concerns

Although the obstetric crisis of the last three decades seems to have subsided, obstetric providers still need an environment where they can practice without the threat of losing their home, savings, and retirement accounts. High malpractice premiums continue to be a concern and add to the cost of health care in West Virginia.

Conversations with West Virginia obstetric providers reveal the following areas of concern:

- a. Will malpractice insurance continue to be available?
- b. Will the ability to renew malpractice insurance continue?
- c. Has the cost of insurance stabilized?
- d. How will we get obstetric providers to underserved areas of the state?
- e. Should obstetrical providers consider dropping insurance (“going bare”) the way some providers have in Florida?

The Key Informant Survey: Issues Faced by Perinatal Providers

Nancy Tolliver, RN, MSIR; Ann Dacey, RN, BSN

Contributors: Patricia Lally, DO; Janet Graeber, MD; Stefan Maxwell, MD; Robert Nerhood, MD; Marlene S. Merkel, RN; and over 200 perinatal providers around the state of West Virginia who responded to the survey.

Several surveys were conducted in the spring of 2006 for this study in order to better understand the barriers and issues faced by local perinatal providers. The surveys included 1) *West Virginia Key Informant Survey*, 2) *Worksite Wellness and Perinatal Health Survey*, and 3) *Perinatal Education and Support Programs and Services Survey*. In addition, all payers were contacted about their policies on care management of pregnant women. This chapter discusses the Key Informant Survey. Chapter 3 discusses the other surveys.

The West Virginia Key Informant Survey

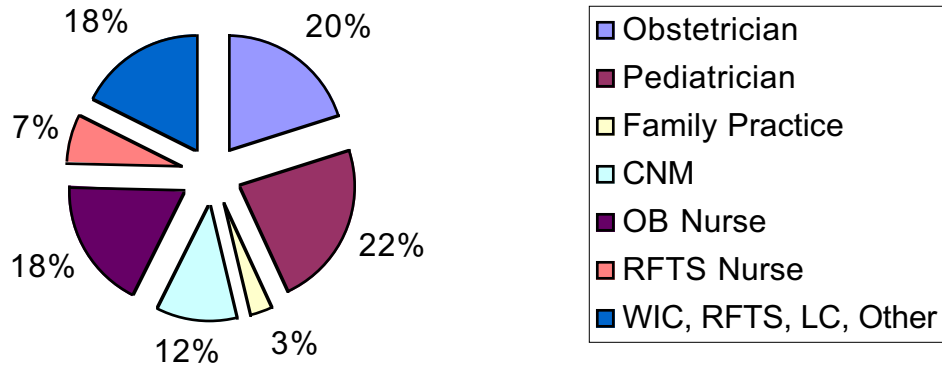
The West Virginia Key Informant Survey is an essential source of information for the *Study to Improve West Virginia Perinatal Wellness*. The purpose of the survey was to gain input from West Virginia medical, nursing and other personnel serving pregnant women and their newborn infants. The survey sought information and opinions regarding why West Virginia has not made the same progress toward the reduction of infant mortality and low birth weight as the rest of the nation. The survey method was intended to reach those practicing in rural areas of the state, as well as urban areas. It was the hope that West Virginia medical and nursing personnel not able to participate in the Perinatal Wellness Study Summit could apply their expertise to these issues.

One hundred and sixty-five health professionals' responses were submitted complete and in time to be included in the report. Close to 200 responses were received, but were either not complete with respondent's name or arrived after the deadline.

Health Professionals from thirty-four West Virginia counties and from four adjoining states responded to the Key Informant Survey. Important responders to the survey were nurses representing 62 percent of the hospitals and birthing centers, including obstetrical hospital nurses and nurse managers.

Responders to this survey talked about many barriers and issues they face in providing perinatal care that if modified could help reduce the infant mortality rate and the incidence of low birth weight. The issues faced by local providers were staggering. These formed the basis for a listing of Potential Policy Implications that were further studied during the West Virginia Perinatal Wellness Summit in May 2006.

**Chart 1
Key Informant Survey
165 Responders**



Tobacco Use:

- Tobacco use by pregnant women and in-home smoking by family members.
- Medical providers advising pregnant women that just “cutting down on tobacco use and alcohol use is “ok.”
- Patient lack of compliance with medical advice.

Drug Use:

- The growing use of legal and illegal drugs by women during and after pregnancy. The most frequently mentioned drugs used were cocaine, methamphetamine, heroine, and methadone.
- Health professionals, especially pediatricians, frequently correlated child neglect with drug use in the home.
- Pregnant women treated with methadone and not weaned off prior to delivery.
- Lack of a standard medical protocol, taking into account legal and medical implications, for drug/alcohol testing and referring for treatment during pregnancy.

Nutrition and Breastfeeding:

- Poor maternal nutrition and a lack of nutrition education.
- The rise in obesity, gestational diabetes, type II diabetes, and pre-eclampsia.
- Lack of breastfeeding and lack of support for continued breastfeeding.
- Not all hospitals in state adhere to guidelines of American Association of Pediatrics regarding support for establishing breastfeeding, both for healthy newborns and for high-risk newborns.

Teen Pregnancy and Single Mothers:

- Insufficient sex education in the schools to help prevent pregnancy.
- Lack of education regarding contraception resulting in closely spaced pregnancies.
- Inadequate parenting skills, especially among teens and single women.
- Poor hygiene among pregnant teens and single women.
- Poor dentition, lack of access to dental care, lack of insurance coverage for dental care.
- Teen pregnancy is still part of our rural culture.
- Lack of self-esteem in young women.

- Lack of desire for education. The two largest determinants of child health in the US are poverty level and parental education.

Obstetrical- Neonatal Systems Barriers:

- Lack of adequate high-risk obstetrical services to refer high-risk pregnant women.
- Lack of a fully operational statewide perinatal care program for high-risk mothers and infants needing referral and/or transport to high-risk care.
- Lack of certain newborn screening testing.
- Lack of high-risk newborn follow-up in the home (especially in rural areas).
- Lack of consistent standards for the induction and delivery of late preterm infants (34-37 weeks).
- Voluntarily inducing labor that produces preterm infants was identified major provider issues that contribute to higher use of NICU beds and infant mortality.
- Voluntarily inducing labor of first time mothers, resulting in higher rates of caesarian sections for this group.
- The “malpractice crisis” and cost of liability coverage.
- Insufficient high-risk support from tertiary care facilities to community hospitals, the loss of community hospital based continuing education on high-risk care.
- No standard protocol for transferring high-risk pregnant women and infants.
- The lack of availability of NICU beds in state when needing to transfer.
- Providers not adhering to recommended standards of the American College of Obstetricians and Gynecologist.
- Private insurance carriers do not cover in-home follow up of high-risk infants (such as RFTS services) as Medicaid does.

Education and Support Programs:

- Poor parenting skills and a lack of parenting education and in-home support programs.
- Child neglect by parents identified as contributing to infant mortality.
- Physicians not referring early enough to the Right From the Start Program (RFTS).
- More widely advertised and marketing for RFTS program to medical provider and pregnant women.

Late Entry, No Entry, and Poor Prenatal Care:

- Many physicians are still reporting concerns over late entry to care as a major concern.
- Pregnant women are waiting to have their insurance card or Medicaid in hand prior to making their first appointment for care.
- Not enough obstetrical health providers in areas accessible to many women.
- In some areas, once a woman calls for the first prenatal appointment there may be several weeks before providers’ schedules can fit in a new patient.

Findings from Level I and Level II Obstetrical and Neonatal Facilities and Personnel

The Key Informant Survey also found that many medical and nursing personnel from Level I and II hospitals are voicing problems with the current system of care.

Many respondents, primarily those in the southern and eastern parts of the state, talked about the lack of outreach teaching from the tertiary care centers. The outreach teaching was a regular service during the 1980s and 1990s. Maternal-fetal specialists, neonatologists and nurses from the tertiary care facilities provided medical and nursing education for Level I and II facilities. These programs taught professionals at Level I

and II facilities to stabilize patients before transfer, to better identify the optimal time for transfer, and to have a familiar relationship with expected medical procedures and personnel at the tertiary facility. Questions, phone calls, and support for the Level I and II facilities were more readily available across the state.

During the process of gathering information about the numbers of birth providers, many nurse managers in rural hospitals were informally interviewed. Several spoke of their work experiences and some of the challenges they see. Here are just a few concerns the nurses raised.

1. There is a general lack of experienced perinatal nurses trained to deal with perinatal emergencies.
2. The turnover rate of new nurses is high because of lack of training programs in perinatal competencies.
3. Traveling nurses are being hired to staff some of the small perinatal birthing units. Traveling nurses are very expensive to hire and some lack standard competencies and perinatal nursing experience.
4. There is occasional reluctance on the part of Emergency Medical Services (EMS) personnel to transport high-risk pregnant women to tertiary perinatal centers. The EMS personnel voice concerns of safety and liability issues and a lack of training in obstetrics emergencies. Short hospital staffing does not always allow for trained obstetric nurses to travel with the EMS crews.

Local medical professionals voiced concern about not being able to get high-risk mothers and newborns accepted for transfer into the state's tertiary care facilities in a timely manner. For a transfer, the local provider must make a phone call to the closest tertiary care center. If the transfer is refused the local provider must make another call and possibly a third call to find a tertiary care facility that can accept the transfer. Many local providers talked about referring many patients out of state for care.

Outreach education, an excellent statewide communication network, and consistent medical protocol can serve as the basis for a strong, coordinated statewide system of care. This is especially true in our state where 73 percent of the obstetrical facilities deliver fewer than 750 births annually. There would be many advantages to a statewide system, including the efficiency of one phone call from the local provider to a centralized system where access to beds could be handled.

Findings from Tertiary Care Providers

This section identifies barriers and issues that tertiary care providers say they face in delivering care that could improve perinatal outcomes.

Maternal and Neonatal Transfer Barriers and Issues

Like local providers, providers in tertiary care facilities have expressed concern that both high-risk pregnant women and high-risk newborns are being turned away from West Virginia tertiary care centers. They expressed several reasons for this situation.

1. Lack of availability of neonatal intensive care beds at times when a request to take a transfer from a local provider is received.
2. The lack of availability of specially trained maternal and/or neonatal transport nurses to handle the transport at the time the transfer request is received from the local provider.

During 2005, 1,988 infants were admitted to one of the three NICU units in West Virginia. However, at least 97 newborns requiring an NICU bed were turned away from two of the State's three tertiary care centers that year. The data of turn-aways from the third hospital were not available at the time of this Study and would increase the number even higher.

Pregnant women needing specialized care have been turned away from tertiary care facilities in the state as well. Between July 1, 2005 and June 30, 2006, Cabell Huntington Hospital received 217 calls from local providers requesting the transfer of high-risk pregnant women to that facility. Of those calls, 59 women were refused transfer because of a lack of NICU beds to handle their newborn infants.

At West Virginia University Hospitals (WVUH) the story is very similar to Cabell Huntington. In a recent twelve month period, 437 requests for maternal transfers were received; 380 referrals were accepted and 57 refused. The most common reason for refusals was lack of an NICU bed, but second most common was a lack of a bed for the mother during labor and delivery.

Medical practitioners are concerned about the delays in transferring mothers and infants into the tertiary care centers. The delay means that they may not be receiving specialized care that may save lives or improve the quality of life, if received in a timely manner.

The reasons that West Virginia is experiencing a lack of availability of NICU beds is that the demand has increased. **Specialized neo-natal nurse practitioners, once the strong base for the infant transport teams, are increasingly needed in hospital to care for very ill infants. As an example, at WVU Hospitals registered nurses are now being trained to handle infant transports and respiratory therapists have become part of the transport team.**

We have greater technology and medical and nursing experts available today to address extremely high-risk maternal and infant needs. Babies that we might have lost in earlier years are now being saved.

- Infants and mothers with increased complexity are requiring longer stays at the tertiary care facilities, which limits availability of beds.
- There are insufficient observation infant beds to handle at-risk newborns that just need observation as they transition into the new world.
- There are insufficient step-down infant beds for infants improving from critical care.
- The high incidence of tobacco use and apparent increase in legal and illicit drug use have a negative impact on neonatal outcomes.
- The increasing number of late pre-term deliveries, mainly for maternal conditions such as infection, preterm premature rupture of membrane, pre-eclampsia, diabetes necessitate longer stays for affected women.
- We are experiencing a small increase in multiple births, possibly related to availability of fertility treatments.

To expand the number of NICU beds, a tertiary care center must demonstrate that the number of beds does not exceed four beds per 1000 live births in the area. The basis for this calculation should be re-examined to be sure it is up to date and reflects current NICU pressures and current medical care standards. These beds, considered level III NICU by the West Virginia Health Care Authority, are concentrated at the three tertiary care hospitals, West Virginia University Hospitals, Inc., Charleston Area Medical Center, and Cabell Huntington Hospital. All three tertiary care facilities in the state have indicated they are in the process or will be applying for a CON for expansion of NICU beds.

Perinatal Specialists

Some obstetrical providers expressed concern about the lack of availability of specialists for consultation when needed. Specialists in maternal-fetal medicine and neonatology are located at the three tertiary perinatal centers in West Virginia. Currently, West Virginia has four maternal-fetal medicine specialists and 14 neonatal specialists. Whether the number of specialists in the state is appropriate for the number of annual births needs to be determined. But what also needs to be addressed is how well we are utilizing the specialty skills, what arrangements and protocols are provided for providers seeking consultation, and whether or not available communications technology is being utilized effectively and efficiently so that specialists consultation and care is as readily available as possible.

Maternal-Fetal Medicine (MFM) Specialists

A maternal-fetal medicine specialist is a board certified obstetrician/gynecologist who has completed 2-3 years of additional formal education and clinical experience and must have been a fellow in a Maternal-Fetal Medicine Fellowship Program approved by the American Board of Obstetrics and Gynecology (ABOG) and must be eligible for or certified by ABOG as having a special competence in: 1) the diagnosis and treatment of women with complications of pregnancy; 2) pre-existing medical conditions which may be impacted by pregnancy; and 3) medical conditions which impact the pregnancy itself.

Names and Locations of MFM Specialists in West Virginia	
David Chaffin, MD	Marshall University Joan C. Edwards School of Medicine, <i>Huntington, WV</i>
Shalini Singh, MD	Marshall University Joan C. Edwards School of Medicine, <i>Huntington, WV</i>
Luis Bracero, MD	West Virginia University School of Medicine, CAMC, <i>Charleston, WV</i>
Byron Calhoun, MD	West Virginia University School of Medicine, CAMC, <i>Charleston, WV</i>

Neonatal Specialists

A neonatologist specializes in neonatal care and is a board certified pediatrician who has completed 2-3 years of additional formal education and clinical experience and must have been a fellow in a Neonatal Fellowship Program approved by the American Board of Pediatrics (ABP) and must be eligible for or certified by the American Board of Pediatrics (ABP).

Names and Locations of Neonatal Specialists in West Virginia	
Renee Domanico, MD	Marshall University Joan C. Edwards School of Medicine, Huntington, WV
Gilbert Ratcliff, MD	Marshall University Joan C. Edwards School of Medicine, Huntington, WV
Bobby Miller, MD	Marshall University Joan C. Edwards School of Medicine, Huntington, WV
Joseph Werthammer, MD	Marshall University Joan C. Edwards School of Medicine, Huntington, WV
Abdelhamid Bourbia, MD	West Virginia University School of Medicine/CAMC Women and Children's Hospital, Charleston, WV
Davangere Jayaram, MD	West Virginia University School of Medicine/CAMC Women and Children's Hospital, Charleston, WV
James Lowery, MD	West Virginia University School of Medicine/CAMC Women and Children's Hospital, Charleston, WV
Stefan Maxwell, MD	West Virginia University School of Medicine/CAMC Women and Children's Hospital, Charleston, WV
Jayesh Shah, MD	West Virginia University School of Medicine/CAMC Women and Children's Hospital, Charleston, WV
Janet E. Graeber, MD	West Virginia University School of Medicine/WVUH Children's Hospital, Morgantown, WV
Susan K. Lynch, MD	West Virginia University School of Medicine/WVUH Children's Hospital, Morgantown, WV
Martha D. Mullett, MD, MPH	West Virginia University School of Medicine/WVUH Children's Hospital, Morgantown, WV
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Medical Residency Programs in West Virginia

Having medical residency programs in the state brings many benefits to the delivery of care, the quality of care, and the availability of providers. According to the West Virginia Higher Education Policy Commission's *Health Sciences and Rural Health Report Card - 2005* West Virginia does a good job of retaining West Virginia medical graduates, who complete a primary care residency in state. Between the years 2001 through 2005, an average of 70 percent of the West Virginia medical graduates completing primary care residencies in the State have stayed to practice here. Primary Care residencies are considered to be those offered in Obstetric and Gynecology, Pediatrics, Family Practice, and Internal Medicine.

Obstetric and Gynecology Resident Programs: The state has three medical residencies in obstetrics and gynecology. It is not known how many of those residents stay in West Virginia to practice obstetrics.

Each obstetric/gynecology residency program is four years in length and has space for 12 residencies each or a total of 36 positions. The programs are located in Charleston, Huntington, and Morgantown.

Obstetric/Gynecology Residency Programs – 4 years		
School	Clinical Rotation Site	Number of Residents Positions
Marshall University School of Medicine, Dept of OB/GYN	Cabell Huntington Hospital <i>Huntington, WV</i>	12
WVU School of Medicine, Dept of OB/GYN	Children's Hospital, WVU Hospitals <i>Morgantown, WV</i>	12
WVU School of Medicine, Dept of OB/GYN	CAMC Women and Children's Hospital <i>Charleston, WV</i>	12

Family Practice Residency Programs: Family practice residency programs are offered at eight different hospital sites in the state. One hundred and forty-eight positions are available at these sites and the programs are three years long.

Family Practice Residency Programs – 3 years		
School or Affiliation	Clinical Rotation Site	Number of Residents Positions
Marshall University School of Medicine, Department of Family Medicine	Cabell Huntington Hospital <i>Huntington, WV</i>	24
WVU School of Medicine, Department of Family Medicine	Children’s Hospital, WVU Hospitals <i>Morgantown, WV</i>	18
WVU School of Medicine, Department of Family Medicine	CAMC Women and Children’s Hospital <i>Charleston, WV</i>	26
WVU School of Medicine, Department of Family Medicine	Harpers Ferry Clinic and Jefferson Memorial Hospital	12
United Hospital Center	United Hospital Center, <i>Clarksburg, WV</i>	24
Wheeling Hospital	Wheeling Hospital, <i>Wheeling, WV</i>	24
WV School of Osteopathic Medicine, Department of Family Medicine	Greenbrier Valley Medical Center, <i>Ronceverte, WV</i>	5
WV School of Osteopathic Medicine, Department of Family Medicine	Charleston Area Medical Center	9
WV School of Osteopathic Medicine, Department of Family Medicine	United Hospital Center, <i>Clarksburg</i>	4
WV School of Osteopathic Medicine, Department of Family Medicine	Wheeling Hospital	2

Pediatric Residency Programs: Pediatric residency programs are three years in length and offer 40 positions at three sites in the state.

Pediatric Residency Programs – 3 years		
School	Clinical Rotation Site	Number of Residents Positions
Marshall University School of Medicine, Department of Pediatrics	Cabell Huntington Hospital <i>Huntington, WV</i>	12
WVU School of Medicine, Department of Pediatrics	Children’s Hospital, WVU Hospitals <i>Morgantown, WV</i>	12
WVU School of Medicine, Department of Pediatrics	CAMC Women and Children’s Hospital <i>Charleston, WV</i>	12
WV School of Osteopathic Medicine, Department of Pediatrics	Charleston Area Medical Center	4

Internal Medicine Residency Programs: Internal medicine residency programs are four years in length, and offer 36 positions at three sites in the state.

Internal Medicine/Pediatric Residency Programs – 4 years		
School	Clinical Rotation Site	Number of Residents Positions
Marshall University School of Medicine, Department of Pediatrics/Internal Medicine	St. Mary’s Hospital/VA Medical Center, <i>Huntington, WV</i>	6
WVU School of Medicine, Department of Pediatrics/Internal Medicine	Children’s Hospital, WVU Hospitals <i>Morgantown, WV</i>	15
WVU School of Medicine, Department of Pediatrics/Internal Medicine	CAMC/Women and Children’s Hospital <i>Charleston, WV</i>	15

Studies should be done to determine whether adequate numbers of West Virginia medical graduates completing primary care residencies in West Virginia are staying to provide obstetrical care. Especially in the underserved rural areas we need to know what might be done to support these medical providers.

Chapter 3

Perinatal Surveys on Support Programs for Expectant Parents

Worksite Perinatal Wellness Programs

Ann Dacey, RN, BSN

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Nationwide there has been a great interest in worksite prenatal wellness programs. Many companies have found that they can save money in insurance costs by offering these programs. According to the March of Dimes it is not uncommon for companies to spend 50 percent or more of their total health care bill on pregnancy related costs.

The National Business Group on Health says, that one unhealthy birth can cost anywhere from \$20,000 to more than \$1,000,000, compared to about \$6,400 for a normal, healthy delivery.

Worksite Perinatal Wellness Programs in West Virginia: To understand the prevalence of perinatal wellness programs in West Virginia, the Perinatal Wellness Project surveyed all companies that were members of the Wellness Council of West Virginia. In addition, a brief survey was placed on The Perinatal Wellness Study Website. Very few companies responded to the survey. Those that did respond did not have programs dedicated to perinatal wellness. Further studies and methods to promote perinatal worksite wellness in West Virginia will be encouraged.

Perinatal Education and Support Programs

Cinny Kittle, MS

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Trends in Breastfeeding: Breastfeeding of infants up through two years of life has been identified as one way to protect the infant against many illnesses. For several decades, numerous medical professional associations and committees have struggled to encourage breastfeeding. The American Academy of Pediatrics, the Federal Maternal and Child Health Bureau, the National Center for Education in Maternal and Child Health,

the American College of Obstetricians and Gynecologists, the Women, Infants, and Children (WIC) Program, the American College of Nurse Midwives, and the La Leche League International are just a few of the organizations that have been spreading the good news about breastfeeding benefits to babies.

According to La Leche League International Health Advisory Council, breastfeeding has been shown to be protective against painful ear infections, upper and lower respiratory ailments, allergies, intestinal disorders, colds, viruses, staph and e coli infections, diabetes, juvenile rheumatoid arthritis, many childhood cancers, meningitis, pneumonia, urinary tract infections, salmonella, Sudden Infant Death Syndrome (SIDS) as well as lifetime protection from Crohn’s Disease, ulcerative colitis, some lymphomas, insulin dependent diabetes, and for girls, breast and ovarian cancer.

After years of intense marketing of baby formula and cultural and professional bias against breastfeeding, women began supporting change in favor of breastfeeding in the mid 1960s. Since then the evidence of the positive benefits of breastfeeding has accumulated. By 1992, 33 percent of West Virginia women were breastfeeding at time of hospital discharge. According to a 2003 survey by the Ross Mothers Survey by Ross Products Division of Abbott Labs, about 58.8 percent of West Virginia mothers leave the hospital with the intent to breastfeed. At six months of infant age 22.8 percent of West Virginia mothers were breastfeeding. While these figures are better than in previous decades, West Virginia falls behind the nation in the number of women who breastfeed. Nationally, 66 percent of mothers leave the hospital breastfeeding and 32.8 percent are still breastfeeding at six months of infant age.

Percent of Women Breastfeeding 2003		
	Breastfeeding At Hospital Discharge	Breastfeeding Six Months Later
West Virginia	33%	22.8%
US	66%	32.8%

Breastfeeding Issues and Barriers

Listed below are the issues identified by local providers through the Breastfeeding Education Programs Survey.

- The need to reestablish breastfeeding as the norm – public relations campaign .
- A limited number of certified lactation consultants in hospitals. (Only 10 were identified in state)
- At least limited proficiency of breastfeeding knowledge for all medical professionals working with expectant or new mothers and infants. This would be ideally incorporated into their curricula. The West Virginia School of Osteopathic Medicine asks the residents and students on the pediatric service to schedule one session with the lactation consultant for introduction to lactation.
- Lack of availability of lactation consultants outside regular working hours.
- Vigorous marketing by formula companies with free gifts at hospital discharge.
- Need for education of hospital nurses regarding how to support and encourage mothers in breastfeeding, especially for mothers of premature or ill infants.
- Lack of funds for breast pumps for mothers of normal and premature infants.
- Lack of continuing breastfeeding – short duration of breastfeeding.
- Providing breastfeeding support to mothers in the home after hospital discharge.

In-home Parent Education Programs

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The Value of In-home Parent Education Programs: Parent education programs offered in the home have been popular in the United States since the mid 1800s. These visiting programs are recognized as successful models for providing public health interventions for the pregnant woman, mother, baby, and family within the home in a personal and supportive environment.

The focus of these perinatal programs is generally aimed at reducing low birth weight by educating mothers and families about the known causes of low birth weight. They teach parents how to develop and maintain healthy behaviors during pregnancy including education and support related to smoking cessation and drug use, good nutrition, safety in the home, and how to watch for signs of pregnancy complications. They help screen for depression in pregnant women and new mothers and are attentive to signs of domestic violence. The in-home visiting programs also make referrals for medical, dental, and social services. After birth, the in-home programs focus on infant growth and development, breastfeeding support, nutrition education, parenting education, and child spacing options.

Although nationally in-home visiting has been shown to be a positively received service by families with and without risk for poor obstetrical outcomes, the in-home visiting program is generally geared to families whose pregnancy or newborn are at higher risk for poor outcomes.

Right From the Start (RFTS): In West Virginia the RFTS program was established in 1989. It offers in-home visitation during the pregnancy and at least one visit after the infant is born and home. The program also offers, “enhanced services” such as educational programs on childbirth, breastfeeding, and parenting. Infants at risk receive additional visits to the physician. Professional nurses and social workers provide the

in-home visitation. The program is funded through West Virginia Medicaid and is managed by the Office of Maternal, Child and Family Health.

Since 1989, West Virginia has made great strides in getting women into medical care early in the pregnancy. As of 2004, 86 percent of pregnant women access prenatal care in the first trimester, a dramatic improvement since the 1980's when only 60-70 percent of women received care during the first trimester.

Being referred to RFTS, or other care management programs early in the pregnancy, offers the best opportunity for pregnant women to receive guidance on healthy habits and to get access to care, educational programs and services. All Medicaid eligible women and infants are eligible for RFTS. According to a data analysis conducted by West Virginia University, School of Pediatrics, Birth Score Program, the percent of women choosing to participate in RFTS has increased from 67 percent of those eligible in 1995 to 84 percent participation in 2002.

The average time of entry into RFTS care coordination is at 20 weeks of pregnancy. Earlier entry would potentially provide even better health outcomes for mother and baby.

The Birth Score report found that women participating in RFTS were more likely to have:

- a higher level of adequate prenatal care utilization.
- a lower rate of infant admissions to NICU.
- a lower rate of infants born at-risk for developmental delay.
- a higher rate for linking infants with high Birth Scores to well child care service.
- a lower rate of preterm delivery.
- a lower rate of infants born with birth weights less than 2500 grams.
- a higher rate of breastfeeding at time of hospital discharge. 47.7 percent of RFTS mothers intend to breastfeed at hospital discharge.

In 1989 Medicaid paid obstetrical providers for maternal risk scoring and referring pregnant women into RFTS. Medical providers were paid between \$52 and \$104 to complete the standardized risk assessment tool and refer pregnant women into RFTS. By 1998 Medicaid had reduced reimbursement for the assessment to \$6.12, and in 2004 had eliminated payment altogether.

Medical providers are concerned that reimbursement decisions of the WV Medicaid program are forced solely on the relevance to the annual State Medicaid budget. These decisions frequently have little to do with best medical practices, don't seem to be based on an analysis of existing medical and vital records data, nor do the decisions reflect thoughtful longer range economic benefits to the people and State of West Virginia.

Medicaid also originally covered travel cost for nurses to provide in-home visitations with pregnant and new mothers. Payment for those services were cut during the 1990's when pressure was put on the state Medicaid program to reduce overall expenses.

When Medicaid began offering managed care through Health Maintenance Organizations (HMOs), the HMOs agreed to provide case management for high-risk pregnant women and infants. All HMOs refer pregnant Medicaid members to RFTS. They also offer their own case management.

The Public Employees Insurance Agency (PEIA) does not pay for in-home case management services for high-risk pregnant women or infants. The PEIA however, does reimburse physicians for additional medical visits for high-risk infants during the early months of life. Several physicians and nurses voiced concerns in the survey that infants identified as at-risk, but not covered by Medicaid are not eligible for RFTS services. These families need the RFTS services as well.

The West Virginia Children’s Health Insurance Program (CHIP) will cover case management for CHIP high-risk infants. To receive such services the family or physician would need to inform Acordia, the managing insurance company, that the in-home case management services are “medically necessary.”

Maternal Infant Health Outreach Worker Program: Another in-home visitation program, the Maternal Infant Health Outreach Workers (MIHOW), has been operational in Fayette County since 1982 through the New River Health Association. It expanded to Summers, Mingo and Ohio Counties in 1999. The programs are sponsored by local family service agencies. There are no income requirements or income restrictions for MIHOW participation. Families begin participation in pregnancy and are followed through the child’s 3rd year of life.

MIHOW is a research-based program that trains and utilizes non-professionals for in-home visitations. These lay outreach workers are frequently mothers who live in the same communities they serve. MIHOW data shows that in 2002 the low birth weight rate for infants in their program was at 7.4 percent, lower than the national average of 7.7 percent, and significantly lower than the West Virginia rate of 9.0 percent that year. A 1992 MIHOW study (Clinton) showed that MIHOW mothers were more likely to report that they were consistent about good health habits during pregnancy. Women in the MIHOW program were more likely to:

- Take more vitamins and iron and use less tobacco and caffeine than comparison mothers
- Breastfeed
- Have children that were more likely than their non-MIHOW peers to enter school healthy and ready to learn

A 1995 study (Maloney) found that MIHOW mothers received significantly more help from friends, parent groups, and social groups than a comparison group drawn from neighboring counties. MIHOW participants also were more likely than the comparison group to know how to help himself or herself or someone else access:

- affordable medical care (81% vs. 62%);
- transportation to medical care (84% vs. 62%);
- well-baby medical services (98% vs. 72%);
- assistance with alcoholism, drug abuse, or depression (72% vs. 46%); and
- support groups (42% vs. 22%).

West Virginia would do well to more fully implement in-home visiting programs during pregnancy and infancy for all families in West Virginia.

Listed below are the barriers and challenges identified by local providers that could improve perinatal outcomes.

- Lack of ability to reach pregnant women with sufficient help to motivate and support smoking cessation.
- Obstetrical providers are no longer reimbursed for the timely risk screening and referral for at-risk pregnant women.
- Referral to Right From the Start is not happening early enough in the pregnancy to be able to impact adequately with education and support.
- Insufficient travel reimbursement for nurses and social workers to provide in-home visitation to Medicaid pregnant women and new mothers.
- Hesitancy of some pregnant women to participate in-home visitation.
- Lack of transportation of the pregnant woman and her family to participate in scheduled out-of-home educational sessions.
- Lack of reliable communications (telephone contacts, etc.) for reaching the pregnant woman.

Insurers' Care Management Approaches to Obstetrical Care

Renate E. Pore, Ph.D., MPH

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The care management of pregnant women, especially those at risk, and high-risk infants is a proven strategy to support the health of the pregnant woman and improve birth outcomes. While all payers in West Virginia provide some type of care management for at-risk pregnant women and high-risk infants, the type and intensity of care management varies from payer to payer. All Medicaid managed care plans refer eligible women to the state case management program, Right From The Start. However, as we have reported earlier, only 52 percent of eligible women are referred to RFTS and the majority of those who are referred do not access RFTS until the 20th week of pregnancy.

Right from the Start (RFTS):

The oldest and largest care management program in West Virginia is RFTS. RFTS began in 1989 as a partnership between Medicaid and the Office of Maternal, Child and Family Health (OMCFH). RFTS provided comprehensive perinatal services to about 34,000 infants and more than 98,000 low-income pregnant women between 1996 and 2005. Services are provided for infants up to one (1) year of age and for women up to sixty (60) days postpartum. RFTS employs 200 care coordinators through 76 community agencies. Services are provided to families in their own homes or other agreed upon locations. Eligibility for RFTS is related to income with women living in families earning up to 185 percent of the Federal Poverty Level being eligible for services. All high-risk Medicaid covered infants are eligible for RFTS.

West Virginia Medicaid:

In the past several years WV Medicaid has begun to contract with managed care organizations to coordinate the care of Medicaid women and children. The managed care plans currently doing business in West Virginia are the Health Plan, Carelink and Unicare. All three plans have their own care management systems and also refer women to RFTS. At risk pregnant women eligible for Medicaid and not in a managed care plan are to be referred to RFTS by their physicians.

According to UB-92 Hospital Discharge Data, WV Medicaid paid for 52,928 resident births representing 48.9 percent of all resident births in West Virginia hospitals between 1999 – 2004. WV Medicaid also paid for 1,983 resident infants in neonatal intensive care (NICU) representing 56.4 percent of all resident NICU babies over a three-year period at a total cost of \$93,236,264. WV Medicaid probably paid for additional births and NICU admissions through its managed care contracts. Contractual payments are not identifiable through the UB-92 Hospital Discharge Data Set.

Carelink:

Carelink uses a risk screen form filled out by the physician for every new pregnant woman. High-risk women are referred to a nurse case manager, who follows the high-risk woman through telephone contacts. Carelink also refers eligible women to RFTS, WIC and other state programs. In 2005, Carelink covered 1,124 pregnant women and 87 babies in neonatal intensive care (NICU).

The Health Plan:

The Health Plan requires the completion of the Prenatal Risk Screening Instrument (PRSI) upon the initial encounter for all pregnant members receiving maternity services. Based on this screening tool, members are contacted to begin tracking their pregnancy. Outreach Representatives monitor the low-risk pregnancies on a regular basis through the use of a prenatal screening tool utilized each trimester to assess the member's status. Any high-risk member will be referred to the Prenatal Care Coordinator who is a nurse with OB experience. The Nurse coordinates with the OB/Gyn. If the member smokes, she can also be referred to the Smoking Cessation Department. Members are encouraged to participate with the Women, Infants, and Children (WIC) Program and the Right From the Start Program (RFTS) if they qualify. The Health Plan refers Medicaid members to the appropriate Regional Care Coordinator (RCC) of RFTS. At any time during the pregnancy, if the member's status changes from low-risk to high-risk, she is referred to the Prenatal Care Nurse. Prenatal care books are mailed to all pregnant members during the 1st and 3rd trimesters. Members are encouraged to participate in Childbirth Education classes.

All new mothers are reminded of the importance of their own postpartum checkup. The Outreach Representative contacts each member for a postnatal follow-up and initial newborn follow-up. During the postnatal contact, the Edinburgh Postnatal Depression Scale (EPDS) is reviewed for postpartum depression. If the score is high, she is referred to the Prenatal Care Nurse who notifies the member's OB provider. The new mothers receive a newborn packet with the baby's ID card.

Newborns are enrolled in The Health Plan and automatically covered from date of birth. The new mother is reminded to apply for a SSN for the newborn and to select a primary care physician for the baby. The importance of well-child visits and immunizations are stressed. Members are also encouraged to sign the baby up for the WIC program. There is a process in place to get the newborn a Medicaid number. The Health Plan pays for accelerated visits for high-risk newborns.

In 2005, The Health Plan covered 2,398 pregnant women, who are members of PEIA and Medicaid and 275 NICU babies.

UniCare:

UniCare identifies and enrolls pregnant women in the Prenatal Program, which provides prenatal and postpartum education for women. The Prenatal Program uses a series of mechanisms to identify pregnant women including self-referrals and provider referrals. Women enrolled in the Prenatal Program receive an educational packet, and are assessed for high-risk. If identified as a high-risk pregnancy, the member is referred to

Case Management, and those that are hard-to-reach are also referred to Right From the Start for more extensive interventions. Women who are enrolled in the Prenatal Program and have completed their postpartum care visit receive a gift from UniCare. In 2005, Unicare had 708 women including 49 in its high-risk management program. Unicare also covered 175 NICU babies.

The Public Employees’ Insurance Agency (PEIA):

PEIA paid for 5,981 births in West Virginia hospitals between 1996 -2004 or about an average of 1,000 births per year. All PEIA covered pregnant women are screened with a detailed instrument developed by McKesson Health Solutions to determine if they are at risk for complications. Those members at risk are referred to a case management nurse, who works with the member and her physician throughout the pregnancy. PEIA also pays for accelerated visits for high-risk newborns. Between 2002 -2004, PEIA paid for neonatal intensive care for 228 newborns at a cost of \$9.2 million.

Mountain State Blue Cross and Blue Shield (MSBCBS):

MSBCBS paid for hospital care for 7,944 pregnant women over a six year period between 1999 -2004. Blue Cross identifies at-risk pregnant women through a pre-certification process and works with them as part of a chronic care management program. A new program, “Blues on Call,” will provide pregnant women with access to information and a health coach if needed.

MSBCBS also paid for 404 infants in neonatal intensive care between 2002-2004 at a total cost of \$16.5 million. High-risk infants are also identified through the pre-certification process and referred to a case manager for follow-up.

At-Risk Infants:

A Birth Score Process evaluates all newborns in West Virginia prior to leaving the birthing facility. High-risk Medicaid infants are all referred to RFTS for case management through year one. Infants with significant developmental delay are subsequently referred to the state Birth to Three Program, which provides a variety of therapeutic services. Those high birth score infants not eligible for Medicaid are contacted by an outreach worker from the Office of Maternal, Child and Family Health and linked to a medical home. All payers pay for medically necessary visits for these infants.

Evaluation of Care Management Programs:

RFTS tracks outcomes of women receiving services and can show positive improvement over time. Other case management programs do not appear to have done any formal evaluation of their effectiveness.

Economic Benefits of Improved Perinatal Outcomes

Paul Hamilton, PhD

Contributors: Calvin Kent, Ph.D., Kent Sowards, MBA, and Penelope Baughman, MA.

Introduction

This chapter provides a quick overview of the potential economic benefits accruing to the state of West Virginia if policies were implemented to raise West Virginia outcomes up to the national levels of intervention and improved mortality. Several hypothetical situations are proposed that calculate the positive outcomes from achieving what many other states have already obtained. These potential benefits will hopefully serve to motivate policies that will overcome the immense challenges in actually realizing improved perinatal outcomes.

Birthing Costs

West Virginia has 13.3 percent of deliveries that are pre-term versus 12.3 percent nationally. The March of Dimes “Healthy People 2010” goal is to reduce pre-term births to no more than 7.6 percent of live births. The West Virginia C-section rate has risen sharply over the past decade from 22.8 percent (1996) to 32.3 percent (2004). This compares with 26.1 percent nationally (2002). The West Virginia VBAC rate has dropped precipitously from 23.9 percent (1996) to 9.04 percent (2004). Nationally this stands at 12.6 percent (2002). The C-section rate for women who have had a previous C-section is 90.7 percent compared to 87.4 percent nationally.

	Pre-Term Deliveries	C-Sections	VBAC	C-Sections following Previous C-Section
WV	13.3%	32.3%	9.04%	90.7%
US	12.3%	26.1%	12.6%	87.4%

A summary of birthing costs savings is as follows:

- Mother-related charge savings: Approximately 919 fewer C-sections resulting in a total savings of \$2.34 million each year.
- Baby-related charge savings: Approximately 183 fewer premature babies resulting in a total savings of \$2.36 million each year.
- Total estimated hospital charge reductions equal \$4.7 million annually.

The savings would be distributed among private and public payers. The following table displays the expected reductions in charges to the major payer groups in West Virginia.

Payer (2004 Data)	Share of Charge Savings (Mom + Baby)
Commercial & Employer/Union	\$808,293
Medicaid	\$2,667,367
Mountain State Blue Cross Blue Shield	\$523,633
Not Elsewhere Classified & Unknown	\$63,258
Other Federal Government	\$21,086
Other Nonprofit	\$193,287
Other States' Government	\$49,200
Other WV Government	\$14,057
PEIA	\$267,088
Self-pay & Charity	\$98,401
Total Savings	\$4,705,672
WV Government Savings	\$2,948,513

The state government payers of Medicaid, PEIA, and other total about \$3 million of the \$4.7 million in potential savings in charges.

If West Virginia could achieve today what it achieved a decade ago, charges would be an estimated \$10 million less than today, of which state government would save \$6.3 million.

Savings to Business

Businesses would benefit in numerous ways from improved perinatal outcomes. A survey of the scientific findings by the March of Dimes noted the extended costs of a mother's short-term disability, lost wages, and productivity losses.

“On average, premature babies covered by employer plans spend 16.8 days in the hospital during the 12 months following birth, compared to 2.3 days for full-term babies. In addition, premature babies make an average of nine visits to the doctor's office during the first year of life, compared to six visits for healthy, full-term babies. All of this means time away from work for the parents. Mothers of premature babies spend more time on short-term disability (average of 29.1 days) over the six months following delivery than mothers of full-term babies (average of 18.9 days). The simple wage-related costs to employers of the extra time on short-term disability average \$1,513. In terms of lost productivity and teamwork synergy, the estimated impact may be much greater: as much as \$2,766. Either way, the costs to employers are considerable.”

Human Capital Loss

Infant and neonatal mortality statistics reveal that West Virginia rates are currently among the worse in the nation. What if West Virginia could improve the infant mortality rate to be equal to the national average? At around 20,000 births per year, there would be 40 *additional* West Virginians that celebrate their first birthday. Putting a dollar value on these young lives strains the scope of economics. Amounts can range into the millions of dollars. Taking a very conservative estimate of \$100,000 per death (proxy for intensive neonatal care or wrongful death suit – which it may or may not be) the 40 lives translates into a loss of \$4 million per year. This could be added to the \$4.7 million in birthing charge reductions to bring the savings to about \$8.7 million per year that could be a benchmark for public money spent on improving perinatal outcomes.

Concluding Thoughts

This analysis has only included short-term health savings. Longer-term benefits such as lower insurance premiums could benefit individuals and businesses. Many additional savings could be included, such as fewer extended maternity leaves and fewer health complications later in life for preemies (MRDD, cerebral palsy, heart/lung, etc).

Taken as a conservative estimate, government policy actions that would bring West Virginia up to national norms and cost less than \$3 million annually would be matched by government savings. In practice it is reasonable to believe that further investment of resources and sound policies could bring about this improvement in perinatal outcomes.

Policy Recommendations to Improve Perinatal Health

1. Create a Coordinated Statewide Perinatal System
2. Save State Dollars by Reducing Costly Medical Procedures
3. Reduce Exposure to Tobacco Smoke During Pregnancy
4. Reduce Drug and Alcohol Use Among Pregnant Women
5. Improve Breastfeeding Support and Promotion
6. Improve Perinatal Health and Birth Outcomes of African American Women
7. Recruit and Retain More Obstetric Providers
8. Expand Newborn Screening to 29 Conditions
9. Encourage West Virginia Businesses to Offer Perinatal Worksite Wellness
10. Improve the Oral Health of Pregnant Women Through Policy and Education

Policy Recommendation 1

Create a Coordinated State-Wide Perinatal System

Nancy Tolliver, RN, MSIR

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Background: West Virginia has made little progress over the past decade in improving infant mortality. The number of low birth weight babies has continued to increase, and more babies are spending the first weeks of life in neonatal intensive care. In addition, more and more of our pregnant women are suffering from hypertension, preclampsia, obesity and chronic diseases such as diabetes and poor oral health. Use of tobacco products, alcohol and illegal drugs is a great concern among perinatal professionals.

In January 2006, when the West Virginia Perinatal Wellness Study was implemented, one of the first steps was to conduct surveys statewide so perinatal professionals could help us identify problems they face in improving perinatal care. **With well over 200 medical, nursing, and social workers responding, the study found there is strong support and desire to make improvements in perinatal care.** The professional medical and neonatal nursing associations, tertiary care facilities, medical residency programs, small rural and urban hospitals, birth centers, certified nurse-midwives, and pediatricians from around the state told us how to improve care. They also told us that the state's perinatal health care system needed to be overhauled and that they want to be part of the process.

From the initial-study, it appears that most elements of a cohesive system of care are in place, but need to move towards a statewide approach rather than a fractured regional system. We need to utilize new methods of communication, provide better support for medical professionals in rural areas, better utilize our intellectual

resources, and more fully implement parent support and education programs already available in some areas but not statewide.

Local providers spoke of the need for a statewide approach to transporting high-risk mothers and infants. They spoke of the lack of ability to get their patients transferred to tertiary care centers in a timely manner and having to send patients out of state. They also spoke of a current lack of education and support from tertiary care facilities.

A WV Obstetrician Reports

The Level I and II facilities are delivering most of the care and receiving little support. Our responsibility (and that of the West Virginia Health Care Authority) is to encourage technology transfer to these facilities. For example, most Level I hospital could safely give CPAP and Surfactant to their babies, reducing the need for transports and freeing NICU beds. The Level III hospitals are invaluable resources in their regions, but not everyone wants or needs the Level III environment. We certainly need more NICU beds, but in the process of providing them we should not overlook upgrading the hospitals most West Virginians choose for their care.

Tertiary care providers told similar stories. Noting a need for more NICU beds, more observation and step down beds, they also indicated that many of the infants could be cared for in Level I and II facilities closer to home. They said that we need offer skill-enhancement opportunities so that nurses and physicians at these facilities can comfortably care for some compromised but not critical infants.

WVU NICU Physician Reports

Recently, a call came in to the WVUH NICU regarding an infant in Lewisburg in the southern part of the state, who was in distress. The physician called CAMC, Huntington and Roanoke, Va., but the NICUs were full. WVU was called and had a bed but could not fly because of bad storms. It would have taken us almost 4 hours to reach the infant and an equal time back. Roanoke was the only unit that agreed to help with transport and their team brought the infant all the way to Morgantown by ambulance. It is too bad we are not able to provide this kind of service in our own state.

Recommendations:

Establish and provide support for a statewide coordinated partnership to plan and initiate a perinatal wellness system. This partnership should include representatives of birthing centers, and Level I, II, and III hospitals providing obstetrical and neonatal care, and all medical professional associations. The partnership should come together, review lessons learned from promising programs in other states, and work on identified problem areas where improvements need to be made.

The Partnership should:

1. Work together to identify a maternal risk-scoring instrument that will be used universally across the state to identify each pregnant woman's risk for a good or poor outcome. Implement the use of the instrument by all obstetrical medical providers and all payers for all pregnant women. The risk scoring instrument might offer other uses such as:
 - trigger consultation and/or referral to an additional or alternative source of care;
 - identify training needs for medical professionals at the community level;
 - provide data source for health resource planning (money, people, etc.).
2. As required by the West Virginia Health Care Authority, assist each hospital obstetrical and neonatal unit to meet the standards that will be followed regarding the pregnant women and infants cared for within their facility and those that will be transferred to a higher level facility, or returned to a lesser level facility.
3. Identify ways to more efficiently utilize the skills of highly specialized medical professionals and technology across the state, such as computerized prenatal care technologies, computerized non-stress testing, and better utilizing existing telecommunications systems for perinatal diagnostic procedures to share medical expertise across the state.
4. Establish more effective ways to utilize existing telecommunications systems for sharing of medical and nursing educational purposes so that all perinatal medical professionals can benefit from shared case studies, development and interpretation of medical and nursing standards.
5. Establish a statewide system for maternal monitoring that allows specialists to more easily and effectively confer with medical providers caring for at-risk pregnant women so that the women can continue to be cared for close to home.
6. Identify better methods of sharing electronic medical records, such as by utilizing practice management software.
7. Create and implement a flexible centralized scheduling process for transfer of high-risk pregnant women and for NICU transfers so that just one phone call from a local provider would be made to secure transfer arrangements.
8. Collaboratively, with perinatal providers across the state, design perinatal practice protocols that adhere to standards promoted by the American College of Obstetricians and Gynecologists, the American Academy of Pediatrics, and the American College of Nurse Midwifery.

9. Put into place an educational system that promotes and supports consistent standards of care for health care delivery and hospital quality of care, based on ACOG and AAP guidelines.
10. Develop a support program for community hospitals through the tertiary care centers, with adherence to ACOG and AAP guidelines for care.
11. Promulgate consistent guidelines for referral and transport for high-risk pregnant women and high-risk infants.
12. Develop a plan to attract needed perinatologists to the state.
13. Identify the need and establish an adequate number of NICU beds. (Several mentioned that the “system” should not be regional, but should utilize the expertise and equipment available in design of a statewide system.)
14. Identify the need and establish adequate numbers of observation and step down beds for at risk infants.
15. Provide skill enhancement training and support opportunities to Level I and II facilities to enable them to care for many infants (currently transferred to NICU’s) that are at-risk but not critical, such as some drug-compromised infants.
16. Review in-home visiting programs for pregnant mothers and newborns; identify best practices and programs with improved perinatal outcomes, and work to implement these programs statewide for all pregnant women regardless of their health care coverage.
17. Review and recommend methods of enhancing data collection relevant to maternal and infant health. Data analysis is vital to making informed decisions about resource allocation and targeting interventions to populations at highest risk for poor birth outcomes.

Policy Recommendation 2

Save State Dollars by Reducing Costly Medical Procedures

Paul Hamilton, PhD

Contributors: Calvin Kent, Ph.D.; Kent Sowards, MBA; and Penelope Baughman, MA

Background: There are numerous potential benefits to improving West Virginia’s perinatal health, not the least of which are the potential economic benefits to the state itself. During the Perinatal Wellness Study, key economic advisors in the state looked at potential economic benefits of short-term duration. Not only does the state

need to do more to measure the economic impact of programs and policies, but there are several issues raised that should be addressed quickly. In WV over 56 percent of the births in the state are paid for by state health coverage programs. **The savings to the state in addressing preterm births and in reducing the number of c-sections to the national averages is estimated to be a total of \$2,948,513 annually.** This savings would bring about \$2,667,367 to Medicaid, \$267,088 in savings to PEIA, and \$14,057 to other West Virginia government programs.

Recommendation:

To reduce the continuing increase in costly caesarian section births, the West Virginia State health coverage programs should work with ACOG –WV Chapter, the Perinatal Wellness Study Group, and obstetrical providers to encourage practices that comply with the nationally recommended ACOG guidelines for c-sections.

Policy Recommendation 3

Reduce Exposure to Tobacco Smoke During Pregnancy

Cinny Kittle, MS

Contributors: Robert Anderson, MA, CHES; Bruce Adkins, MS, PA; Hersha Arnold Brown; Kelli Caseman, MA; Chantal Centofanti-Fields, MSJ; Kathy Danberry, MS; Chuck Hamsher; Richard Meckstroth, DDS; Amy Tolliver, MS; Stanley Walls

Background: Women who smoke during pregnancy have a greater chance of miscarriage, pregnancy complications, premature birth, low birth weight infants, stillbirth, and infant mortality.

The latest Surgeon General report, released in July 2006, concludes that there is no risk-free level of exposure to secondhand smoke. The report confirms that babies whose mothers smoke while pregnant, or who are exposed to secondhand smoke after birth, have weaker lungs than other babies, which increases the risk for many health problems. The report also confirms that both babies whose mothers smoke while pregnant, and babies who are exposed to secondhand smoke after birth, are more likely to die from sudden infant death syndrome (SIDS) than babies who are not exposed to cigarette smoke. Even though we now know the danger of smoking during the perinatal period, fewer than one out of four women quit smoking once they become pregnant.

West Virginia leads the nation in the rate of smoking among pregnant women, with a rate of 27 percent, nearly three times the national rate of just over 10 percent.

Certain populations are more affected than others, which are evident in West Virginia women covered by Medicaid, who had a smoking rate of 41 percent in 2004.

The rate of teen smoking in West Virginia is high and of concern regarding perinatal health. A significant reduction in teen smoking would translate into an overall reduction in smoking among pregnant women. In 2003, nearly 2,600 babies were born to women between the ages of 10-19. This group of girls and young women is often overlooked in regard to smoking cessation opportunities. For various reasons, many of these young women are already at-risk for pregnancy complications, and adding smoking to those reasons can be deadly.

Fifty percent of respondents to the Key Informant Surveys indicated that they felt that smoking (mother smoking and in-home smoking) was in the top five contributing factors of poor perinatal health. Thirty-five percent of the partners attending the Perinatal Wellness Summit ranked dealing with smoking and in-home smoking as one of the highest priorities.

There have been efforts to reduce tobacco use among pregnant women for several years in West Virginia, to little avail. Although these projects may have been “successful” in helping some women quit smoking, the impact was short-lived and statistically invisible due to the inability to implement such programs in a state-wide, comprehensive, and sustained manner.

There is a growing concern and a great deal of recent research on how to best assist a pregnant woman to quit smoking and not relapse after giving birth. The United States Department of Health and Human Services, Agency for Healthcare Research and Quality (AHRQ) and the American College of Obstetricians and Gynecologists (ACOG) have adopted guidelines for smoking cessation counseling for pregnant women. The Dartmouth School of Medicine offers a self-paced, online training for healthcare providers through a “Virtual Clinic” Smoking Cessation for Pregnancy and Beyond program found at http://iml.dartmouth.edu/Smoking_linkpage/index.html.

Recommendations:

1. A work group of the State Medical Association, the Hospital Association, the WV Chapters of the American College of Obstetricians and Gynecologists, the American Academy of Pediatrics, and the American College of Nurse Midwifery, the WV DHHR, and all payer groups should collaborate to assure all providers of obstetrical and newborn services are knowledgeable in, and have resources to utilize the guidelines for smoking cessation counseling and treatment, which could include pharmacological adjuncts with all pregnant women and parents.
2. The training curriculum for all health care careers should include the identification of risk factors for tobacco use, and tobacco cessation counseling and treatment, based on guidelines established by Agency for Health Research and Quality (AHRQ).
3. Health insurance companies and agencies should cover the cost for smoking cessation counseling and appropriate pharmacologic support for all pregnant women who smoke and for family members living in the same household.
4. The West Virginia Legislature should increase the state excise tax on tobacco products. Research confirms that an increase in the price of tobacco products leads to a decrease in consumption. This effect is most evident in youth and pregnant women. The Campaign for Tobacco-Free Kids estimates that an increase of the West Virginia state excise tax of \$.70 per pack (from the current \$.55 per pack rate to \$1.25 per pack) would avoid 3,780 smoking-affected births and result in \$5.4 million in healthcare savings over the next 5 years. Such a tax increase is also estimated to generate an additional \$77 million in new revenue.
5. Expand the West Virginia Quitline free tobacco cessation services to all pregnant women and those who live in the same household as pregnant women.
6. All hospitals, birth centers, physicians’ offices and clinic facilities should establish and enforce tobacco-free campus policies, supported by education and cessation programs and referral.

7. All perinatal healthcare providers and parent educators should increase their education and support programs for tobacco cessation for pregnant women, and put added emphasis on educating and supporting families of pregnant women and newborn infants to keep a smoke-free home.
8. The West Virginia Legislature should adequately fund a statewide, comprehensive tobacco prevention program at no less than the Centers for Disease Control minimum set for West Virginia at \$14.1 million.
9. Tobacco use and secondhand smoke exposure status should be included as a vital sign in patient intake forms.
10. Businesses should work to assure that all public places and worksites are smoke-free.

Policy Recommendation 4

Reduce Drug and Alcohol Use Among Pregnant Women

Becky King, MA; Joseph M. Deegan, LICSW, CCAC-S

Contributors: Elizabeth R. Cohen; Mary Aldred-Crouch; Teresa Frazer, MD; Stefan Maxwell, MD; Deborah Dee Messinger; Kim K. Miller; and Penny Womeldorff

Background: Each year, millions of women use alcohol, legal and illicit drugs while pregnant. According to a 2003 study by the Centers for Disease Control and Prevention, nearly 3 percent of pregnant women use illicit drugs, posing various risks for unborn babies ranging from reduced weight in newborns, to behavioral disorders and serious birth defects. The effects of maternal drug use and addiction are far-reaching, and the direct and indirect costs are substantial across the health, social service and legal fields.

Many women are aware that heavy drinking can cause birth defects. However, many do not realize that moderate or light drinking may also harm the fetus. In West Virginia, alcohol use was recorded on .03 percent of the birth certificates of all resident births in 2003. Recent federal government surveys indicate that nationally about 13 percent of pregnant women drink during pregnancy. The Centers for Disease Control (CDC) reports that up to 8,000 babies are born with fetal alcohol syndrome (FAS), one of the most common causes of mental retardation and the only cause that is preventable. As many as ten times more babies are born with lesser degrees of alcohol damage, referred to as fetal alcohol effects (FAE).

Although the extent of maternal drug use, both legal and illegal, is unknown in West Virginia, 45 percent of respondents to the 2006 Perinatal Study Key Informant Survey perceived drug use and addiction among pregnant women as one of the top contributing factors of poor perinatal health. The need for studies to identify the extent and severity of drug use and addiction among West Virginia pregnant women was identified as a top policy priority among partners attending the Perinatal Wellness Summit in May 2006.

According to a recent study by Dr. Stefan Maxwell, Associate Professor of Pediatrics, West Virginia University, 144 babies were born to mothers with a diagnosis of maternal drug use/abuse in 2005. This number represents five percent of all 3,041 babies delivered at Women's and Children's Hospital in Charleston. Of 96 meconium drug screens completed on newborns at the NICU and newborn nursery in 2005, 79 screens were positive for drugs.

Nationally, approaches to addressing maternal drug use and addiction have ranged from punitive criminal prosecution and civil interventions, to public health initiatives that provide preventive education, treatment and support. The issues surrounding maternal drug use and addiction are complex legal, ethical, and moral issues that will require a coordinated response at both the national and state levels to successfully reverse the trends. The Association for Addictions Professionals (WVAADC) advocates for policies that recognize maternal drug abuse and addiction as a mental health/medical illness that requires a combination of treatment and preventive approaches.

Across West Virginia, there are only 24 residential treatment beds that accept pregnant women. In framing the following policy recommendations, key issues that must be considered in addressing maternal drug use and addiction include:

- recognition that addiction is a biochemical process requiring professional treatment.
- understanding and acceptance that many women, who use drugs or who are addicted, are very concerned about their unborn babies, but face many barriers to receiving treatment including lack of money to pay for treatment, the lack of appropriate community-based treatment options, and the fear of losing custody of their children.
- recognition that the most effective treatment is long-term, residential care that is integrated with other services such as parenting skills. Treatment must be gender-specific, drug-free, and include child-care for mothers.

“They come here wanting detox... they want to be clean... they want the baby to be born clean.”

*Dr. Carl R. Sullivan, Chestnut Ridge Hospital
Remarks to Participants at the WV Perinatal Wellness Summit, May 2006*

Recommendations:

Charter a state-level advisory panel to continue to study the issue of maternal drug use and addiction, coordinate resources and formulate additional policy recommendations.

1. Initiate studies to identify the extent and severity of drug and alcohol use and addiction, including methadone, among West Virginia pregnant women as a baseline and foundation for developing targeted interventions.
2. Conduct a comprehensive economic impact study on the costs associated with maternal drug and alcohol use, addiction, treatment, and prevention.
3. Establish consistent medical guidelines, including clarification of mandated reporting and use of mandatory drug screens and toxicology reports.
4. Avoid discrimination toward women and the criminalization of addiction disorders in pregnant women by ensuring that West Virginia Codes do not include punitive measures such as felony charges toward women with substance use disorders that are pregnant or post-partum.
5. Establish integrated, long-term residential treatment programs that accept both mother and child.
6. Establish Medicaid and other third party coverage for in-patient drug and alcohol treatment programs.
7. Establish sufficient follow-up and support for pregnant women and new mothers who have completed treatment programs.
8. Work with the legal system to identify at-risk children of drug using parents and provide adequate protection for their safety through mandated in-home visitations.
9. Coordinate and expand early intervention programming such as early in-home family education programs to target pregnant mothers. All in-home visiting programs for pregnant women and newborns should provide services to help reduce adverse behaviors and improve a woman's capacity to follow through with health recommendations.
10. Increase coordination levels between the judicial, social service, health, and child welfare systems with addiction treatment providers to address access and treatment barriers.
11. Establish a statewide educational and public relations effort to inform the public of the serious consequences of drug and alcohol use, increase awareness that addiction is a brain-disease, and to reinforce consistent messages of available treatment and help versus punitive approaches.

Policy Recommendation 5

Breastfeeding Support and Promotion

Cinny Kittle, MS

Contributors: by: Allison Adler, MA; Kathy Bailey, RN, IBCLC; Mary Boyd, MD; Stefan Maxwell, MD; Jenny Morris, MM, IBCLC; Jamie Peden, RN, IBCLC; Nonie Roberts, LSW; Amy Weintraub; Heather Venoy, RD; Stephanie Whitney, CLC

Background

Breastfeeding is an important and basic act of nurture that must be encouraged in the interests of maternal and child health. Breast milk is the most complete form of nutrition for infants, containing an abundance of factors that are active against infection. Breastfed infants have a lower incidence of a wide array of infectious such as diarrhea, respiratory and urinary infections and ear infections. Breastfed infants, compared with formula-fed infants, produce enhanced immune responses to polio, tetanus, diphtheria and other infections.

Human milk contains a balance of nutrients that more closely matches infant requirements for growth and development than does the milk from any other species. Scientific evidence suggests that the normal pattern for breastfed infants is to gain less weight and to be leaner at 1 year of age than formula-fed infants, while maintaining normal activity level and development. This early growth pattern may influence later growth patterns, resulting in less overweight and obesity among children who were breastfed.

Benefits to mothers who breastfeed are many, including reduced risk of some cancers, reduced risk of osteoporosis, faster return of the uterus to its pre-pregnancy state, steady weight loss based on use of fat deposits laid down during pregnancy for early milk production, slower return of menses which can aid in natural child spacing, and a psychological sense of confidence as the mother provides complete nourishment for her baby.

Breastfeeding also saves the family money in not having to buy formula. A study conducted by the San Diego Breastfeeding Coalition in 2001 determined that additional nutritional needs of a nursing mother would be about \$300 per year, while costs for infant formula would range between \$1,188 to \$3,996, depending on the brand and type of formula used.

These benefits of breastfeeding for mother, baby and families lead to many social and economic benefits to society, including reduced health care costs and reduced employee absenteeism due to child illness.

Despite the many known benefits of breastfeeding, the rates for breastfeeding in the United States, and West Virginia are low. Women need the appropriate knowledge about breastfeeding, and support from her family, the healthcare community, her employer and society in general to maximize her success.

Recent attempts to formally support breastfeeding mothers/babies, through legislation, have not yet met their goal. A Child's Right to Nurse bill, that would establish the right for a mother to breastfeed her baby in any place in which both were allowed to be, was introduced in the West Virginia Legislature in 2004, and again in 2005. Although there was much discussion and debate, no legislation has passed.

Recommendations:

1. West Virginia hospitals that offer obstetrical and neo-natal care should follow the recommendations of the American Academy of Pediatrics and American College of Obstetrician and Gynecologist and establish and implement policies and protocols to encourage and support breastfeeding both for medically high-risk infants and normal newborns.
 - These policies and protocols should include ongoing lactation support training for all Obstetrical and neo-natal nurses.
 - No supplemental feeding for breastfeeding babies unless medically necessary.
 - Offering babies the breast within the first 30 minutes after delivery.
 - Offering breastfeeding mothers their babies on demand.
 - Eliminating infant formula companies' access to new mothers through their complimentary diaper bag programs and other product promotion methods.
2. Every hospital that routinely delivers babies should offer lactation consulting and monthly breastfeeding education classes for expectant parents.
3. The state and local public health agencies, health insurance companies, along with the healthcare community should increase efforts to educate the public about the many health benefits of breastfeeding to the mother, her baby and society.
4. The state Legislature should establish a state Child's Right to Nurse law that would guarantee a mother the right to breastfeed her child in any West Virginia location – public or private – where that child/mother pair otherwise has the right to be. This is important to the breastfeeding mother because she must either nurse, or pump her breasts when needed, to be successful in breastfeeding.
5. The state Legislature should consider offering a tax credit to employers who support breastfeeding employees. Studies indicate that women who continue to breastfeed once returning to work miss less time from work because of fewer baby-related illnesses, and have shorter absences when they do miss work, compared with women who do not breastfeed. Another study indicates that worksite lactation programs can increase breastfeeding rates among employed women to a level comparable to rates among women not employed outside the home.

Worksite support for breastfeeding employees can be demonstrated by:

- providing an appropriate lactation location at the worksite.
 - purchasing or renting lactation or lactation-related equipment.
 - hiring a health professional.
 - in general, promoting a lactation-friendly environment.
6. The State Bureau for Public Health should expand West Virginia WIC's Breastfeeding Programs to offer more West Virginia mothers' nutrition and lactation counseling. A study indicates that the national WIC program could save \$9.3 million a month in lower food package costs alone if all mothers breastfed their infants.
 7. The State and County Boards of Education should establish school policies to provide encouragement of breastfeeding and reasonably accommodate the breastfeeding needs of staff, faculty, and students.
 8. The federal and state judicial systems should adopt a policy exempting breastfeeding mothers from jury duty. Service on a jury presents a very difficult situation for a breastfeeding mother. Mothers who are

unable to breastfeed their babies regularly may experience a resulting breast infection with fever and chills, and require bed rest and medication. If the baby is old enough, the mother may be able to pump her breasts. However, this would require the mother be given adequate time to pump at regular intervals. At a minimum this would require a private place in the court facility to pump, as well as a place to clean and store the breastfeeding equipment, and milk.

9. Healthcare professionals who provide care for mothers and babies should be trained on the basics of lactation, breastfeeding counseling and lactation management during coursework, clinical and in-service training and continuing education.
10. WVDHHR should work with the West Virginia Legislature to include lactation consultation and support in services covered through the Medicaid program.
11. Ensure that breastfeeding mothers have access to comprehensive, up-to-date, and culturally tailored lactation services provided by trained physicians, nurses, lactation consultants, and nutritionists/dieticians during the perinatal period.

Policy Recommendation 6

Improve Perinatal Health and Birth Outcomes of African American Women

Nancy Tolliver, RN, MSIR; Luis Bracero, MD

Contributors: Charlene Hickman; Ron McCowan, MD; Robert Nerhood, MD; Reverend James Patterson; Henry Taylor, MD

Background: For many decades, West Virginians have brushed off concerns about minority health disparities because of the small numbers. West Virginia has a predominately white population with just 3 – 4 percent minority races. As we began this 2006 Perinatal Wellness Study, health professionals called attention to the health crisis among pregnant African American women.

In his presentation to the Perinatal Wellness Summit on May 18, 2006 in Charleston, Dr. Luis Bracero reminded us:

Racial and ethnic disparities in birth outcomes are the result of disadvantages and inequalities (bad health and health care, bad habits, poor nutrition, inadequate housing, bad neighborhoods, stress, racism, unemployment, hopelessness) that are more likely to occur during the life of minority women.

Although African American infant births account for a little over three percent of the total births in West Virginia, African American infants are more likely to be exposed to a poorer start in life. Their mothers are less likely to receive adequate and early prenatal care as compared to white women (76.3 vs. 86.4 percent), and they are more than twice as likely to die an infant death as white infants (17.7/1000 live births vs. 7.5/1000 live births). Even though the rate of African American pregnant women smoking is close to the same as white pregnant women, black women are almost twice as likely to give birth to an infant of low birth weight.

During 2003, the Kellogg-funded West Virginia Community Voices Project commissioned Henry Taylor, M.D., MPH, to conduct focus groups within the minority communities. This was an attempt to identify issues that might shed some light on our perinatal health disparities. What he found was that few of the African American participants were aware of their poor infant mortality rate. The findings are reported in a document titled **Babies Lost, October 2003** at www.wvvoices.org. The report can be found in the library section under minority health.

In his study, Dr. Taylor found the following:

- the infant mortality rate among white West Virginia infants has been consistently lower than the African American rate.
- in the last decade, there has been a greater decline in infant mortality when both parents are African American, compared to when both parents are white. Both have declined, but whites less so.
- the father's race was unknown in 70.3 percent of the infant deaths to unmarried women, compared to 3.6 percent of the infant deaths to married women.
- of infant deaths to unmarried women, 11.8 percent were to African American mothers, compared to 1.9 percent for white mothers.
- when the race of both parents was known, African American unmarried couples did not seem to have many more infant deaths (2.0%) than those who were married (1.7%).
- the critical variable underlying infant deaths seems to be the lack of a stable relationship between the mother and father, as evidenced by the father's race being listed as "unknown". This situation is more common in the African American infant deaths.
- African American pregnant women enter prenatal care later than white women, and have fewer prenatal visits.
- African American infants had significantly poorer outcomes than that of the white population.

Perinatal health professionals in West Virginia recognize that addressing the health disparities among race/ethnic groups may help us in the overall reduction of our infant mortality and low birth weight problems that currently range worse than the national averages.

Recommendations:

1. Collaborate with organized black communities in West Virginia to help raise the awareness that black infants are more likely to get a poorer start in life. Enlist the support of the West Virginia Chapter of the NAACP, the Bureau for Public Health Minority Health Program, the Partnership of African American Churches and other groups to raise awareness of infant mortality and low birth weight among the black population.

2. Work with the American College of Obstetricians and Gynecologist (WV Chapter), the three West Virginia tertiary care centers, and the West Virginia medical and nursing schools to develop and present continuing education programs focusing on racial and cultural awareness.
3. Focus perinatal public relations toward the black community, encouraging pregnant women to seek early and prenatal care.
4. Encourage the establishment of in-home support programs similar to MIHOW, that provide prenatal education and support early in pregnancy and during the first year after birth, utilizing experienced trained mentors.

Policy Recommendation 7

Recruit and Retain More Obstetric Providers

Ann Dacey, RN, BSN; Nancy Tolliver, RN, MSIR

Contributors: Cindy Brown, CNM, MSN; James Brown, MD; Martha Carter, CNM, MSN; Allan Chamberlain, MD; Jann Foley, CNM, MSN; Evan Jenkins, Esq.; Ian Leggat, MD; Robert Nerhood, MD; Angelita Nixon, CNM, MSN; Thompson Percy, MD; Gary Thompson, and Amy Tolliver, MS

The State of West Virginia should adopt a long-term focus on reducing poor birth outcomes by placing the recruitment and retention of rural obstetric providers at the forefront of its concerns. Closely reviewing and replicating programs that have worked in West Virginia is important. Programs such as the Local Availability Program (LAP) that paid for registered nurses in the state to become Certified Nurse Midwives is one such success. Other successes are the nurse practitioner programs offered at Marshall University and West Virginia University. Making education programs available in the state helps to increase the number of nurses that want to remain in West Virginia for their education and practice.

Offering an in-state program to educate nurses in midwifery could help educate and place more obstetrical providers where they are most needed. At the same time the state should place a greater emphasis on educational and emergency backup of rural providers after they are recruited.

The National Advisory Committee on Rural Health and Human Services of the U.S. Department of Health and Human Services created a list of recommendations for 2000-2005. These recommendations, if carried out, may solve some of the problems related to recruitment and retention of obstetric providers to rural areas of West Virginia.

Recommendations:

1. The current system for designating Health Professional Shortage Areas (HPSAs) may not be able to identify the rural areas most underserved by obstetrics services. The state needs to identify rural areas that have the lowest ratios of obstetrics providers to women of childbearing age and focus on them when recruiting providers.
2. Recruitment efforts should focus on providers who are trained in obstetrics and who are willing to deliver babies in the communities they serve.
3. The state should reinstitute the Local Availability Program to assist West Virginia nurses in obtaining midwifery education.
4. The state should give serious consideration to establishing a school of midwifery to increase the number of certified nurse-midwives practicing and to assure a continued supply of CNMs as the current population of 41 CNMs begins retiring from practice.
5. Additional incentives for new physicians and certified nurse midwives are also needed and should be explored. One approach would be to pay the malpractice insurance costs of new providers in areas with measurable and pronounced shortages of obstetrics care providers.
6. The American College of Nurse Midwifery – West Virginia Chapter and the West Virginia Hospital Association should work together to identify best practices among the States hospitals for admitting privileges for nurse midwives and promote the establishment of these best practices across all hospitals in the state.
7. The West Virginia Insurance Commission along with the West Virginia Hospital Association should explore alternative routes for hospital liability insurance.
8. Increase support for Medical Schools that have distinct programs and proven track records for training physicians to practice obstetrics in rural areas.
9. Increase Medicaid payments for obstetric services to 80 percent of private insurance reimbursements.

Policy Recommendation 8

Expand Newborn Screening to 29 Conditions

Cinny Kittle, MS

Contributors: Stefan Maxwell, MD; Pat Moore-Moss, MSW; Martha Mullett, MD, MPH

Newborn screening is a public health program that provides early identification and follow-up for treatment of infants affected by certain genetic, metabolic, hormonal and/or functional conditions. Except for hearing, screening tests are done using a few drops of blood from the newborn's heel, usually taken in the hospital 24 to 48 hours after birth.

Newborn screening began in 1962, to test infants for PKU. Technology now makes it possible to screen newborns for more than 80 different conditions, depending on what method is used. These conditions cannot be seen in the newborn, but can cause physical problems, mental retardation and, in some cases, death.

Fortunately, most babies receive a clean bill of health when tested. When test results show that the baby has one or more of these conditions, early diagnosis and treatment can make the difference between lifelong disabilities and healthy development.

Annually, 4.1 million newborn babies are screened for congenital disorders in the U.S. and 5,000 are diagnosed with a disorder. But, each year about 1,000 newborns go undetected for conditions that could be identified through newborn screening because the administration of newborn screening is not uniform throughout the U.S.

Currently, newborn screening is an individual function of each state. Since 2002, the American College of Medical Genetics (ACMG), working on behalf of the federal government, has convened expert work groups to examine best evidence on screening for certain conditions. This work generated the release of a report, endorsed by the American Academy of Pediatrics (AAP) and the March of Dimes, recommending that all babies born in the U.S. be primarily screened for the same 29 conditions or Core Conditions (28 metabolic conditions plus hearing testing). This would eliminate the current situation where babies born in states that screen for more disorders are at an advantage as the outcomes of many congenital conditions can be drastically improved when they're identified early.

According to the West Virginia Bureau for Public Health, Office of Maternal, Child, and Family Health, West Virginia tests for Phenyleketonuria (PKU), Galactosemia, Hypothyroidism, Sickle Cell, and other hemoglobinopathies and hearing.

West Virginia is one of two states and the District of Columbia that do not charge for screening services. Screening services includes screening, follow-up, diagnosis, treatment, and management of the diseases. The Bureau for Public Health, Office of Maternal Child and Family Health (MCFH) currently spends over \$1 million per year for screening services. By following the lead of almost all other states in charging for newborn screening, MCFH would be able to expand newborn screening for all West Virginia newborns to the

29 core conditions, provide for early identification and treatment of metabolic and hearing disorders, potentially save state dollars, and improve the quality of life for West Virginia children identified with one of the core conditions.

Screening for the 29 core conditions is universally required by rule or law in Colorado, Mississippi, New Jersey, Wyoming, Iowa, Maryland, Virginia, Rhode Island, and the District of Columbia.

Recommendation:

By 2008 West Virginia should expand the existing newborn screening panel to offer screening for all 29 conditions and should follow the lead of the majority of States and begin charging for the testing.

Policy Recommendation 9

Encourage West Virginia Businesses to Offer Perinatal Worksite Wellness

Ann Dacey, RN, BSN

Contributors: Sue Binder, RN, BSN; Sharon Covert; Cinny Kittle MS; Elizabeth Critch Parsons; Scott Rotruck; Jim Webber

Background: Across America more and more businesses are incorporating prenatal wellness programs into their work places. This is because prenatal worksite wellness programs save companies money by improving the health of mothers and babies. Prenatal wellness programs have reduced employer costs by millions of dollars. *The National Business Group on Health* says, that one unhealthy birth can cost anywhere from \$20,000 to more than \$1,000,000, compared to about \$6,400 for a normal, healthy delivery.

In addition to prenatal worksite wellness, support for breastfeeding mothers has become a workplace issue. Breastfeeding is the recommended method of feeding by the American Academy of Pediatrics. In promoting and supporting breastfeeding, businesses are finding that they save insurance costs on infant care because breastfed babies have less illness in the first year of life. Another reason employers support breastfeeding is that mothers of healthy babies have lower rates of absenteeism.

The number of women in the workforce is growing and women of childbearing age now comprise one-third of the nation's workforce. Eight out of ten women will become pregnant in their working life and most continue to work, and return to work shortly after the baby is born. Of mothers with children under age three, 61 percent were employed in 2000, compared with just 34 percent in 1975.

The West Virginia Perinatal Wellness Study attempted to survey businesses to see if prenatal worksite wellness programs were present in West Virginia. Surveys were sent to all companies that were members of the Wellness Council of West Virginia. In addition, a brief survey was placed on the Perinatal Wellness Study website.

As of this printing, very few companies have responded to these surveys and the companies that responded did not have programs.

The committee charged with the task of studying the existence of prenatal worksite wellness in West Virginia recommends that this issue be further explored and that people or companies with knowledge or interest in this area please contact the study.

Recommendations:

1. The Wellness Council of West Virginia should engage worksites to learn the economic and health benefits of offering perinatal wellness programs to their employees and families.
2. All West Virginia worksites engaged in offering wellness programs should set a priority to establish lactation rooms for employee mothers who are breastfeeding their infants, to help families provide the best nutrition to infants.
3. Worksites should work with their employees' health plans to assure that all pregnant women are receiving case management appropriate for their identified risk level.
4. All West Virginia worksites should work with their employees' health plans to assure that the outcomes of employee and covered family members' pregnancies are measured and reported, so that management can review progress made toward improving pregnancy outcomes.

Policy Recommendation 10

Improve the Oral Health of Pregnant Women Through Policy and Education

Gina Sharps, RDH

Contributors: Richard Meckstroth, DDS; Mary Bee Antholz

Background: According to the March of Dimes, preterm labor and delivery can happen to any pregnant woman, but it happens more often to some women than to others. A woman's overall health including oral health, her economic resources and prenatal care are all important factors in preventing preterm labor and delivery.

The National Institutes of Health report that "as many as 18 percent of the 250,000 premature low-birth-weight infants born in the United States each year may be attributed to infectious oral disease." This is about the same percentage as explained by cigarette smoking. According to the Surgeon General's report, there is a growing body of evidence supporting the association between periodontal disease (inflammatory gum disease) and unfavorable birth outcomes associated with premature low birth weight. The research suggests that

much could be done to prevent PLBW and improve birth outcomes through better public policy and education that supports and promotes oral health among pregnant women.

Medicaid claims data from 2002-2004 shows that only 24.4 percent of all Medicaid-covered pregnant women received dental care during pregnancy. The data also showed that the likelihood that a Medicaid-covered woman would seek and receive dental care during pregnancy increased with the age of the pregnant woman. As an example, fewer than 20 percent of Medicaid covered pregnant teens up to age 17 received oral health care during pregnancy, whereas 39.3 percent of all Medicaid pregnant women age 32 received oral health care.

Recommendations:

1. The West Virginia Medical, Dental, Nursing and Dental Hygiene Associations should work together to assure that all health care providers are aware of the association between periodontal disease and unfavorable birth outcomes.
2. Encourage programs working with families to promote oral care during pregnancy as a key strategy to improve maternal health, fetal development, infant health, and birth outcomes.
3. The Bureau for Medical Services should review reimbursement rates for Medicaid covered preventive dental visits for women of childbearing age and those who are pregnant, and assure adequate reimbursement. Dental care for pregnant women may result in overall cost savings by reducing PLBW incidence.
4. Increase the use of dental care for Medicaid covered pregnant women by asking all perinatal providers to assist their patients in accessing dental care.
5. PEIA, Medicaid, and all third party payers for obstetrical care should collaboratively institute public education directed toward pregnant women and toward perinatal providers, to educate them on the association between periodontal disease and poor birth outcomes.
6. The West Virginia Dental Association and West Virginia Dental Hygienist Association should promote the adoption of the age-one dental visit and dental home policies by pediatric and general dentists.
7. The West Virginia Bureau for Public Health should promote inclusion of perinatal oral health components in public health campaigns, and articulate prenatal, neonatal, and infant oral health concerns to the public at large.

A Blueprint for State Action

Nancy Tolliver, RN, MSIR

As we look at West Virginia perinatal wellness over time, one thing becomes quite clear. Efforts to address the multiple issues impacting perinatal health must include establishing an ongoing and collaborative process. Dealing with today's issues and problems will only manage today. Without ongoing collaboration and oversight, a decade from now, West Virginia will find itself again falling short of national progress toward improving perinatal health.

Vision: Our vision is to develop an ongoing collaborative process so that West Virginia continuously makes progress toward improving perinatal health.

To be achievable and sustainable over the long term, our strategy must encompass significant and statewide changes in the way that we think about delivering and measuring perinatal health and wellness.

It will require unprecedented cooperation and collaboration among our medical schools, tertiary care centers, local community hospitals, state and privately funded health coverage programs, state agencies responsible for perinatal care, businesses with worksite wellness, and all of the major associations representing health professionals.

Strategy: The way decisions are made within the state agencies and medical programs and facilities must not be made unilaterally but with collaboration from the statewide perinatal system as a whole. We need to design and put into place a new type of public private partnership to be able to leverage existing infrastructures; we must utilize our existing perinatal resources and technology more efficiently to reduce disparities in access and quality of care. As a unified group, we must promote public education campaigns that work to change public attitudes and standards about what helps make a healthy baby and families.

Action Plan: This West Virginia Perinatal Wellness Study of 2006 has engaged an unprecedented number of professionals from all across the state who work in perinatal health. Over 250 individuals have participated in contributing to the dialogue concerning the problems we face and potential solutions. They believe that we need to focus our work in several ways over the next three years.

1. Establish a state-wide perinatal partnership of opinion leaders to design actions for and implement key policy recommendations of the *Blueprint to Improve West Virginia Perinatal Wellness- 2006*.
 - a. Establish methods to better utilize existing telecommunications systems for perinatal diagnostic procedures so that medical expertise can be shared across the state. Utilize existing technologies to offer interactive compressed video for telemedicine conferences enabling physicians to confer with maternal-fetal medicine specialists in real-time about individual cases. Further develop the ability for testing such as ultrasounds to be read in real-time, better

utilizing specialists. Develop statewide capacity for clinical telemedicine consultations where patients, local physicians, and specialist physicians can talk together and see each other, bringing subspecialty support directly to hometowns.

- b. Establish methods to better utilize existing telecommunications systems for sharing of medical and nursing educational purposes so that all perinatal medical professionals, no matter where they practice, can benefit from shared case studies and development and interpretation of medical and nursing standards.
 - c. In collaboration with family practitioners, obstetricians, certified nurse-midwives, neonatologists, maternal-fetal medicine specialists, nurses specialized in perinatal health, and pediatricians, design guidelines for best practices in maternal-fetal medicine and neonatology. The guidelines reflect evidence-based medicine as well as the practice experience input of volunteer medical and nursing professionals.
 - d. Review and recommend methods of enhancing data collection relevant to maternal and infant health. Data analysis is vital to making informed decisions about resource allocation and targeting interventions to populations at highest risk for poor birth outcomes.
 - e. Collaboratively establish a single risk assessment instrument that provides consistent analysis of the medical risk associated with each woman's pregnancy outcome, and establishes avenues for accessing adequate care. And, upgrade the existing Birth Score instrument to reflect current medical knowledge about identifying infants at birth for poor outcomes.
2. Work with medical residency programs and tertiary care hospitals to provide the needed medical expertise for developing the statewide system; eliminating regional approaches to providing care that cause competitive attitudes and approaches; provide for a centrally organized specialty 24-hour call consultation service so that local physicians can access neonatologist and maternal-fetal medicine for consultation and for easy and quick referral for maternal and infant transports; and work to increase the neonatal intensive care observatory and step down bed availability.
 3. Report on the success of programs such as the Local Availability Program in bringing added medical and nursing professionals for obstetrical care to West Virginia. Design a Local Availability Program Phase II and seek state support for funding such programs.
 4. Review in-home visiting programs for pregnant mothers and newborns; identify best practices and programs with improved perinatal outcomes, and work to implement these programs statewide for all pregnant women regardless of their health care coverage.
 5. Increase the number of perinatal care providers in underserved counties by conducting a statewide study to identify private obstetrical practices in the state that might benefit from being matched to an existing Federally Qualified Health Center (FQHC) and designated as an FQHC site. This designation would allow the medical professionals to have medical liability coverage under the Federal Trades option.
 6. Work with the West Virginia State Legislature to support elements identified to improve perinatal health.

Measuring Progress

How will we measure our success? Measurement factors will change over time as the group identifies and addresses problems to good perinatal health. First and foremost we must be able to measure that:

1. Perinatal providers across the state work actively to develop the continuous process for participation in this study.
2. Clear evidence that partners are participating in drafting documents, designing systems issues, providing resources, and serving as medical experts.

Over time specific issues will change. However, for the immediately foreseeable future the work of this group may be measured through progress in specific areas, some of which are the following:

- Statewide adoption and utilization of a standard risk assessment instrument for all pregnant women.
- More frequent and statewide utilization of telecommunications systems for case study sharing.
- Design and implementation of a centrally managed 24-hour phone system for arranging specialty consultation and transport of at risk pregnant women and infants.
- Progress toward skill enhancement of Level I and Level II facilities professional staffs to care for at risk, but not critical, infants close to home.
- Pregnant women entering Right From the Start earlier in the pregnancy so that the support and education can occur earlier.
- Increase in the number of worksite wellness programs that attend to perinatal wellness.
- Increase in the number of Medicaid covered pregnant women utilizing dental services during pregnancy, and in health coverage programs that provide coupons or other incentives to pregnant women to access dental care.
- An increase in the number of obstetricians and pediatricians that knowingly promote and support breastfeeding, and in the average length of time that women nurse their infants.
- Evidence of an increase in the number of pregnant women and new mothers who improve health behaviors such as a reduction in smoking and drug use.

The Study to Improve West Virginia Perinatal Health has brought together an unprecedented number of health care professionals, state officials and advocates to examine the current system, identify problems and define strategies for change. It is a challenge for any system to keep up with rapid change in science, technology, and organizational structures. Even as old problems are solved, economic and cultural changes continually present West Virginia with new problems in assuring the health and well-being of mothers and babies.

This Blueprint does not have all the answers but hopes to serve as a guide and establish a process so that together we can address our short- and long-term challenges.

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Source for C-section and VBAC data: 1996-2002 National Data & 1996-8 WV Data Source: March of Dimes Mother Cost Savings: 17,765 deliveries in 2004 of which 2345 were potential VBACs and 15,420 were primary deliveries.

Reduction of C-sections with prior C-section = $2345 * (0.126 - 0.09) = 83$

Reduction of C-sections w/o prior = $15,420 * (0.234 - 0.18) = 836$

C-section cost savings = $919 * \$2548 = \$2,343,829$

Baby cost savings = $17,765 \text{ deliveries} * \$12,910 * (0.133-0.123) = \$2,361,843$

Source: http://www.marchofdimes.com/prematurity/15341_15349.asp

Source (V.6): Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System (2004)

http://www.mchb.hrsa.gov/mchirc/chusa_04/pages/0606inmrT.htm

The calculation is births times the difference in mortality rates: $20,000 * (9.1/1000 - 7.1/1000)$

Chapter 5 Policy Recommendations to Improve Perinatal Health

Tobacco Resources:

American College of Obstetricians and Gynecologists www.acog.org

ASH - Action on Smoking and Health Increases in Tobacco Taxes Reduces Maternal Smoking <http://www.no-smoking.org/nov01/11-02-01-2.html>

Campaign for Tobacco Free Kids www.tobaccofreekids.org

Can higher cigarette taxes improve birth outcomes?

William D. Evans, Ph.D., University of Maryland and Jeanne S. Ringel, Ph.D., RAND Corporation www.ajph.org/cgi/content/full/91/11/1851

United States Department of Health and Human Services Agency for Healthcare Research and Quality (AHRQ) Treating Tobacco Use and Dependence <http://www.ahrq.gov/clinic/tobacco/>

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The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General 2006 <http://www.surgeongeneral.gov/library/secondhandsmoke/>

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WVDHHR/Bureau for Public Health/Health Statistics Center Statistical Brief Number 4 Smoking: Effects on Mothers and Babies in West Virginia www.wvdhhr.org/bph/oehp/hsc/briefs/four/matched.htm

Drug and Alcohol Use Resources:

WV Vital Statistics/Birth Statistics (from web-site)

National March of Dimes, Fast Facts www.marchofdimes.com

National Institute on Drug Abuse

National Governor's Association-Center for Best Practices on Substance Abuse

National Council for State Legislators - Substance Abuse Snapshot

Breastfeeding Resources:

DHHS Blueprint for Action on Breastfeeding Washington, DC Department of Health and Human Services
Office on Women's Health, 2000

LaLeche League www.lalecheleague.org

American Academy of Pediatrics www.aap.org/breastfeeding/

PEDIATRICS, Official Journal of the American Academy of Pediatrics, Breastfeeding and the Use of Human Milk
Work Group on Breastfeeding, Found online at <http://www.pediatrics.org/cgi/content/full/100/601035>

DHHS, Centers for Disease Control and Prevention www.cdc.gov/breastfeeding/policies

American Academy of Family Physicians Breastfeeding (Position Paper) www.aafp.org

San Diego County Breastfeeding Coalition, www.breastfeeding.org

Minority Health Resources:

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Low Birthweight Birth by Race of Mother 2000-2004 (WV Residents)

Mothers Smoking During Pregnancy by Race of Mother- 2000-2004 (WV Residents)

Infant Mortality by Race, WV Residents 2000-2004

Premature (<37 Weeks Gestation) by Race of Mother WV Residents 2000-2004

Low Birthweight Births to Mothers Who Smoked During Pregnancy by Race of Mother, WV Residents, 2000-2004

Births With Multiple Delivery by Race of Mother, WV Residents, 2000-2004

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Newborn Screening Resources:

March of Dimes www.marchofdimes.com

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Worksite Wellness Resources:

National Business Group on Health - *Business, Babies and the Bottom Line: Corporate Innovations and Best Practices in Maternal and Child Health*

Oral Health Resources:

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 2. Low Birthweight Birth by Race of Mother 2000-2004 (WV Residents)
 3. Low Birthweight Birth by Age of Mother 2000-2004 (WV Residents)
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 - b. Chronic Hypertension
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 - f. Labor Inductions with associated C-Section
 - g. Labor Induction (primiparous) with associated C-Section
 - h. Labor Induction (multiparous) with associated C-Section
 - i. Infant Transferred after delivery (for labor induced - NO)
 - j. Infant Transferred after delivery (for labor induced – YES)
 - k. Infant Deaths/1,000
 - l. Infant Deaths/1,000 for 37 weeks gestation
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 - q. Low birth weight by County by Mother who smoked during pregnancy
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 - u. Neonatal Deaths/1,000 2000-2004 <37 weeks gestation
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 - w. Neonatal Deaths/1,000 2000-2004 unknown gestation
 - x. Postneonatal Deaths/1,000 Neonatal Survivors
 - y. Postneonatal Deaths/1,000 Neonatal Survivors < 37 weeks gestation

- z. Postneonatal Deaths/1,000 Neonatal Survivors > 37 weeks gestation
 - aa. Postneonatal Deaths/1,000 Neonatal Survivors unknown gestation
 - bb. WV Resident 200-2004 births – C-Section (known method of delivery)
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