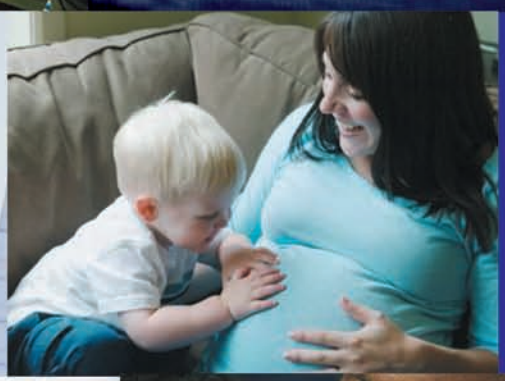
Reports on the

Blueprint to Improve West Virginia Perinatal Health

Final Report



WEST VIRGINIA
Perinatal
Wellness Study

December 2007

The **West Virginia Perinatal Wellness Study**
is a project of

West Virginia Community Voices, Inc.

and

West Virginia Healthy Kids and Families Coalition

West Virginia Perinatal Wellness Study
West Virginia Community Voices, Inc.
Nancy J. Tolliver, Project Director
2207 Washington Street East
Charleston, West Virginia 25311
304-342-8237
tolliver2@verizon.net

Visit our web site for study materials and presentations utilized in the development of this document.
www.wvhealthykids.org

Reports on *The Blueprint to Improve West Virginia Perinatal Health*
Accomplishments – 2007: Final Report and Recomendations

Table of Contents

ACKNOWLEDGEMENTS

Special recognition is given to the following individuals and to the organizations they represent for their dedication to this study, their untiring efforts and collaboration to help us conduct this study, and their willingness to research and write sections of this *Blueprint to Improve West Virginia Perinatal Health.*

Writers and/or Steering Committee Members:

Ann Dacey, RN, BS	National Center of Excellence in Women's Health, West Virginia University School of Medicine
Terri Bliziotes, RN, MPH	West Virginia Primary Care Association
Pat Moore-Moss, MSW	West Virginia Department of Health and Human Resources Office of Women, Children's and Family Health
Bobbi Jo Muto, RDH	Valley Health Systems
Angelita Nixon, RN, CNM	American College of Nurse Midwifery- WV Chapter
Cinny Kittle, MA	West Virginia Hospital Association
Renate Pore PhD, MPH	West Virginia Healthy Kids and Families Coalition
Gina Sharps RDH, BS	WV Healthy Start - HAPI Project
Nancy Tolliver RN, MSIR	West Virginia Community Voices, Inc.

Thank you to Joyce Daniels for editing this document and to Joe Miller for his wonderful assistance posting reports to our web site for review.

The West Virginia Perinatal Wellness Study and this report have been funded by the Claude Worthington Benedum Foundation, with support funds from West Virginia Community Voices, Inc., WV Department of Health and Human Resources, and the West Virginia Health Care Authority.

PARTNERS

The West Virginia Perinatal Partnership - 2007 is a project of the WV Healthy Kids and Families Coalition and WV Community Voices, funded by the Claude Worthington Benedum Foundation and working with the following partners and contributing organizations.

American Academy of Pediatrics West Virginia Chapter
American College of Nurse-Midwifery West Virginia Chapter
American College of Obstetrics and Gynecology West Virginia Section
Bureau for Medical Services, West Virginia DHHR
Center for Business and Economic Research, Marshall University
Hospitals OB-GYN Department Chairs
Managed Care Organizations operating in West Virginia
March of Dimes - West Virginia Chapter
Marshall University Medical School
Mission West Virginia
Office of Epidemiology and Health Promotion – West Virginia DHHR
Office of Maternal Child and Family Health – West Virginia DHHR
Office of Community and Rural Health, Division of Recruitment
Partnership of African American Churches
Wellness Council of West Virginia
West Virginia A Vision Shared
West Virginia Center for Nursing
West Virginia Chamber of Commerce
West Virginia Children's Health Insurance Program
West Virginia Council of Churches
West Virginia Health Care Authority
West Virginia Healthy Lifestyles Council
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-Association of Women's Health, Obstetric, and Neonatal Nurses
West Virginia State Medical Association
West Virginia University National Center of Excellence in Women's Health
West Virginia University School of Medicine, Morgantown, Charleston, and Eastern Divisions
WV Higher Education Policy Commission Health Sciences Division
West Virginia Worksite Wellness Programs
Women Infant and Children (WIC) Food and Nutrition Program – West Virginia DHHR
WVU Institute for Health Policy Research

PREFACE

In February of 2006 many of us gathered at the Governor's Mansion. We were invited by the First Lady Gayle Manchin to begin a partnership. This partnership offered both challenges and common goals. The challenges we face are brought on by the fact that each of us works for or with organizations, educational institutions, or agencies that have a specific mission. Sometimes our individual missions are driven by a peculiar sense of what is real to us, based on our limited perspectives, knowledge, and experiences.

The common goal that allows us to work in a partnership is that we all have a vested interest in the children of West Virginia. We want to improve their health, their environment, their family situations, and their future. The challenges are such that we all recognize that only together can we make such significant changes.

The Accomplishments – 2007 on the following pages are real. We want to thank the Central Advisory Council members and each and every person who contributed to the work documented here. And, we are asking for your continued Partnership during 2008.

Nancy J. Tolliver, Director *L. Clark Hansbarger, MD, Chair*

WV Perinatal Partnership Central Advisory Council Members

Luis Bracero, MD, Professor and Director of Maternal/Fetal Medicine, Women and Children's Hospital, Charleston, WV

Stephen Bush, MD, Associate Professor and Chair, Department of Obstetrics and Gynecology, WVU School of Medicine; Charleston, WV

Ted Cheatham, Director, PEIA, Charleston, WV

Brenda Dawley, MD, Vice-Chair, American College of Obstetricians and Gynecologists -- WV Chapter

Janet Graeber, MD; Associate Professor and Director of Neonatology; Department of Pediatrics; WVU School of Medicine; Morgantown, WV

William Holls, MD, Maternal Fetal Medicine, West Virginia University School of Medicine, Morgantown, WV

Fernando Indacochea, M. D., Chair, American Academy of Pediatrics – West Virginia Chapter; Petersburg, WV

C.H. Mitch Jacques, M.D., Ph.D., Dean, Associate Vice President for Health Sciences, WVU Eastern Division, Martinsburg, WV

Patricia Lally, DO, FACOP, FAAP, Associate Professor and Pediatric Section Chair, WV School of Osteopathic Medicine; Lewisburg, WV

Marsha Morris, RN, Esq., Commissioner, WVDHHR, Office of Medical Services, Charleston, WV

Pat Moore Moss, MSW, Office Director, Maternal, Child, and Family Health, WV DHHR, Charleston

Robert C. Nerhood, MD; Professor and Chair; Department of Obstetrics and Gynecology, Marshall University Joan C. Edwards School of Medicine, Huntington, WV

Angelita Nixon, CNM; Chair: American College of Nurse Midwives - West Virginia Section, Scott Depot, WV

Sam Roberts, MD; Board Member and representing the West Virginia chapter of the American Academy of Family Physicians (WV AAFP), Rural Family Practice, Elkins

Joe Werthammer, MD; Professor and Chair; Department of Pediatrics, Marshall University Joan C. Edwards School of Medicine; Huntington, WV

West Virginia Perinatal Partnership
Partners Collaborated on the Accomplishments of 2007

Goal 1. Establish a Statewide Perinatal System
Identified guidelines for obstetrical and neonatal practices; Identified a uniform prenatal risk assessment tool; Identified recommendations to improve the system for perinatal transport: Established a demonstration project showing consultation between community perinatal providers and specialist at tertiary care centers; and studies the adequacy of NICU beds and made a recommendation to the WV Health Care Authority to allow bed increases.

Goal 2. Identify and Address Obstetrical Provider Shortage Areas
Further identified rural areas where access to maternity care is seriously limited; Designed a model rural maternity service that makes economic and social sense for underserved areas; Identified financial aid programs that are available to WV nurses interested in becoming certified nurse midwives; Worked with the WV Hospital Association to identify CNM credentialing best practices.

Goal 3. Address the Lack of Oral Health Care in Pregnancy
Identified data to set bench marks and measure changes in oral health care use by Medicaid pregnant women; Partnered with Right From The Start to increase oral health use among pregnant women.

Goal 4. Identify Costly Medical Procedures Associated With Poor Birth Outcomes
Studied the frequency of labor induction among first-time mothers, in cases of both with and without preexisting medical complication; Identified the frequency of cesarian sections among first-time mothers after elective labor induction; Developed recommendations for elective labor induction to occur only after 39 weeks gestation.

Goal 5. Develop An Approach to Identify and Treat Drug Use During Pregnancy
Researched WV Health Care Authority data to attempt to identify the extent of substance abuse by WV pregnant women; Conducted medical – legal research to clarify the situation for medical providers and for addicted WV pregnant women; Drafted a policy position paper; Obtained additional funds for committee work; Designing neonatal addiction screening /testing educational tool kit; Medical institutions are planning services for addicted pregnant women.

Goal 6. Encourage the Development of Perinatal Worksite Wellness Programs
Identified two West Virginia worksites which have committed to initiating perinatal worksite wellness programs; The Center of Excellence in Women's Health will work toward promoting the idea to businesses in West Virginia and getting it into the goals of West Virginia Vision Shared.

Goal 7. To Promote and Support Breastfeeding
Supported SB 148 and HB 2498 providing that breastfeeding is not considered indecent exposure; Obtained $20,000 through efforts of the Legislative Oversight Committee on Health and Human Resources to provide training in lactation consultation for hospital obstetrical nurses and others.

Goal 8. Expand Testing of Newborns
Worked for the passage of HB 2583 related to the expansion of testing in newborns.

West Virginia Perinatal Partnership - 2007
Final Report and Recommendations

Central Advisory Council
Subcommittee on Guidelines and Recommendations for Perinatal Care

Perinatal Guidelines Committee Members

Obstetric Care Committee
Committee Chair: *Luis Bracero, MD, Director of Maternal Fetal Medicine, CAMC*
Members:
Michael Stitely, WVU OB/Gyn, WVU Morgantown
Peggy Knight, OB Nurse Manager, Davis Memorial Hospital
David Baltierra, MD, WVU School of Medicine, Eastern Division
Marlene Merkel, OB Nurse Manager, WVU Hospitals, Morgantown
Kat Ambler, CNM, CAMC Women and Children's Hospital
Kathy Quillen, OB Nurse Manager Cabell Huntington Hospital
Nancy Burke, Director of Women's Services, Wheeling Hospital
Stephen Bush, Chair of OB/Gyn, CAMC
Robert Nerhood, MD Chair of OB/Gyn, Marshall
Brenda Dawley, OB/Gyn and Chair-elect of WV ACOG
Kathy Imes, RNC, Nurse Manager Cabell Huntington Hospital
David Chaffin, MD, Director Maternal Fetal Medicine, Marshall University
Chris Powell, Nurse Manager, Wheeling Hospital
Fran O'Brien, RN, Nurse Manager, Greenbrier Valley Medical Center
Jann Foley, CNM, MSN, Women's Health Care of Morgantown, providing care at Monongalia General Hospital
Sheryl Sergent, RNC, OB Nurse Manager, Roane General Hospital
Cynthia Marsh, RN Assistant Nurse Manager, Davis Memorial Hospital
Patricia Moore, RN, MSN, Fairmont General Hospital
Melanie Riley, OB Nurse Manager, WVU East City Hospital
Committee Staff: *Ann Dacey, RN, Nurse Coordinator, WV Perinatal Partnership*

Neonatal Care Committee
Committee Chair: *Janet Graeber, MD, Director of Neonatology, WVU Morgantown*
Members:
Stefan Maxwell, MD, Neonatologist CAMC Women and Children's Hospital
Renee Domanico, MD, Neonatologist, Cabell Huntington Hospital
Nancy Marcus, Nurse Manager, NICU CAMC Women's and Children's Hospital
Lori Blackburn, Nurse Manager, NICU, Cabell Huntington Hospital
Judi Polak, Neonatal Nurse Practitioner, WVU Children's Hospital
Teresa Frazer, MD, Pediatrician from Bluefield
Jann Stewart, Clinical Preceptor, NICU, WVU Hospitals
Judy Romano, MD, Wheeling Pediatrician
Traci Daugherty, Clinical Coordinator - Nursery WVUH East City Hospital
Debbie Menders, Neonatal Transport Nurse, CAMC
Maureen Kenny-Palmera, Nurse Manager, NICU, WVU Hospitals
Babs Nightengale, Neonatal Nurse Practitioner, Mother/Baby Unit, WVU Children's Hospital
Committee Staff: *Ann Dacey, RN, Nurse Coordinator, WV Perinatal Partnership*

Please Note: These recommendations are a work in progress until feedback is received from West Virginia perinatal care providers from every level of hospital or birth center. **IMPORTANT:** The new **AAP/ACOG *Guidelines for Perinatal Care*** are expected to be available in early 2008, so this document is subject to change based on changes at the national level.

DESCRIPTION OF PROBLEM:

Background and Work of the Committee

The 2007 West Virginia Perinatal Partnership evolved from the identified need for comprehensive, cooperative networks of public and private health care providers and businesses within the state to promote the well-being of pregnant women and their babies. The need for the partnership was identified by the 2006 West Virginia Perinatal Wellness Study[1] in which health care providers that were surveyed strongly recommended a more organized system of perinatal care in West Virginia.

As a result, a statewide Perinatal Advisory Council was formed by West Virginia Community Voices. The representatives on the council include rural perinatal care providers, chairs, directors, and deans of perinatal health care organizations, payers of perinatal care, and businesses in West Virginia. The council's directives include establishing, overseeing, directing, and approving the work of subcommittees appointed to study the problems identified in the Perinatal Wellness Study. The Central Advisory Council is charged with the job of developing a plan for institutionalizing the recommendations of the five subcommittees which include: Guidelines for Perinatal Care; Consultation, Transport, and Outreach Education; Telecommunications; Universal Perinatal Risk-Screening Tool and Data Collection; and Adequacy of NICU beds.

Guidelines for Perinatal Care Committee

The goal of the Perinatal Care Committee is implementation of a statewide system of perinatal guidelines and care, based on national professional organizations such as the American College of Obstetrics and Gynecology and the American Academy of Pediatrics. The basis for a statewide system of care is that all providers agree on the same standards of care. The need for a formal system of communication among perinatal health professionals on all levels, primary, secondary, and tertiary, cannot be overemphasized.

Originally named the *Perinatal Standards Committee*, this committee was divided into two groups:

Obstetrical Standards/Guidelines Committee
Neonatal Standards/Guidelines Committee

Each committee was given the following directives:

1. Research, identify, and approve perinatal standards and guidelines
2. Recommend components of a statewide medical consultation system for high risk pregnant women and infants including a coordinated referral and transport system
3. Post guidelines on website for statewide comment
4. Assure that all perinatal professionals have the opportunity to comment on the guidelines
5. Establish due date for comments on guidelines
6. Approve final guidelines for printing

[1] http://www.wvhealthykids.org/p_wellness/pw_home.htm

7. Develop recommendations for institutionalizing recommendations into state government or other organizing entity
8. Develop plan for dissemination of guidelines statewide.

Preliminary Proceedings and Recommendations of Obstetric and Neonatal Guidelines Committees

Committee Conclusions

Each committee met separately and came to several of the same conclusions:

1. Use of the term "standards" connotes an inflexibility of application that is not intended; therefore, the name of the committee should be changed to ***Guidelines* for Perinatal Care**.
2. A review of the work of other states is necessary.
3. It is unnecessary to create a whole new set of guidelines for WV since there are national perinatal guidelines that could easily be applied to WV.
4. These guidelines should be modified as needed for West Virginia.

Review of Other States

Both interpretation and application of levels of perinatal care as defined in the ***Guidelines for Perinatal Care*** vary widely within the United States, and no national definitive laws exist. According to the American Academy of Pediatrics (AAP), in 2003, 15 states and the District of Columbia had no formal definitions. An independent survey performed by the Section on Perinatal Pediatrics of the AAP found that 32 states had published definitions of levels of care. In states that have defined levels of care, the process for designating and enforcing regulations varies. NICU levels at specific hospitals may be designated by the state through the official process of licensing or granting a certificate of need or state-administered health care funding. By 2003, nine states had established formal definitions through programs either supported by or affiliated with maternal and child health programs of the state health department. More than one of these mechanisms is used in 12 states. Policies regarding monitoring of compliance also vary, but virtually all states adopting guidelines or standards utilize the AAP guidelines for perinatal care as a basis for their recommendations with varying degrees of modification. The West Virginia Health Care Authority has definitions of levels of care as they apply to certificate of need applications. (See Appendix A.) West Virginia has no process for monitoring compliance.

The Neonatal Guidelines Committee reviewed in-depth the policies of Maryland, Georgia, Tennessee, California, Washington, Ohio, Indiana, and Iowa. Each committee member reviewed a state and attempted to answer the following questions:

1. Are perinatal standards regulated by state laws or regulations?
2. Does the state require written agreements between facilities?
3. Are the needs of small facilities (< 750 deliveries) addressed?
4. How does the state fund the program?
5. How comprehensive is outreach education and does the state fund it? How?

The committee found that three states had programming that could be particularly pertinent to the establishment of a perinatal structure in West Virginia. Maryland, Iowa, and Washington all had very organized systems of care and their perinatal structures were organized and funded by a state perinatal office.

Primary Components of Three Perinatal Systems

Maryland

- State-driven with an office strictly devoted to perinatal health care system of care, consultation, and transport
- Originally voluntary, now regulated
- Succinctly written guidelines/check lists for every level of perinatal facility based on national perinatal guidelines with modification for state, includes staffing guidelines and educational requirements
- Transport fully funded with requirement for written transfer agreements, including back transport
- State-funded, originally funded by private foundation
- Data-driven, quality improvement, performance improvement:
    - State funding for data collection and analysis
    - Percent of infants born at <37 weeks
    - Survey of mothers
    - Hospital-specific neonatal mortality rates
    - Mortality rate of Very Low Birth-weight (VLBW) infants

Iowa

- State-regulated and state-funded services provided to all hospitals that perform deliveries:
    - Standards/guidelines of care specifically delineated for each level of hospital and based on national guidelines
    - Consultation to regional and primary providers
    - Professional training
    - Evaluation of the quality of care delivered to reduce the mortality and morbidity of infants.
- Permanent perinatal advisory committee in state code which specifies committee membership

Washington

- Permanent statewide perinatal advisory committee formed by the Department of Health, in place since 1985. Work of the committee is accomplished through quarterly meetings and subcommittee workgroups.
- Levels of care are defined by the state but strictly voluntary.
- Guidelines created to help hospitals with obstetric and newborn care services to assess the type of patient best suited to their facility's capabilities and scope of care.
- Uses state and federal funds to contract with geographically strategic healthcare institutions to coordinate and implement state and regional quality improvement projects

COMMITTEE RECOMMENDATIONS

1. The committee recommends that the State of West Virginia invest in a more **comprehensive statewide perinatal system** which includes:

    a. **A Permanent Perinatal Advisory Council (PAC) to periodically review the statewide system of perinatal care and data related to perinatal outcomes. Membership on this committee should include:**

        i. A representative from all professional perinatal organizations (AAP. ACOG, ACNM, AWHONN, NANN)

ii. Representatives from Level I, Level II, Level III facilities, and birthing centers
iii. Representatives from state government (OFMCH, Medicaid, PEIA)
iv. Representatives of major insurance payers of obstetrical and newborn care
v. A representative of the WV Hospital Association
vi. A representative from the WV Medical Association

b. **Designation of levels of care and yearly review** for adherence to guidelines by all birthing hospital and providers. The guidelines committee produced a document that outlines guidelines for all levels of perinatal facilities**. See Appendix C and D for designations and compliance guidelines which include the following guidelines for perinatal care facilities:**

i. Definition of Levels of Care
ii. Functions and Capabilities
iii. Physical Facilities
iv. Medical Personnel
v. Nursing Personnel
vi. Outreach Education
vii. Allied Health
viii. Infection Control
ix. Newborn Safety
x. Performance Improvement

c. **An organized perinatal outreach educational program coordinated by each of the three Level III Perinatal facilities for their referral hospitals.** State funding for an office and a coordinator for these activities in each level III perinatal center is vital as well as reimbursement for teaching time by healthcare professionals. There should be a physician specific tracking and education component of outreach education. Special attention and support should be given to those hospitals that deliver less than 750 babies per year. All birthing hospitals should be offered a yearly review of the following programs:

i. Transport/perinatal case reviews specific to each hospital
ii. NRP, Neonatal Resuscitation Certification
iii. STABLE, (Sugar, Temperature, Assisted Breathing, Blood Pressure, Lab Work, and Emotional Support to Family), a program is designed to provide healthcare professionals with knowledge on how to stabilize patients during the post-resuscitation/pre-transport period
iv. Electronic Fetal Monitoring
v. Advanced Life support in Obstetrics
vi. Hospital data reviews with individual hospitals and opportunities for quality improvement.

d. **Collection and review of appropriate data for quality improvement** as determined by the **Perinatal Advisory Council** (PAC) in consultation with representative leaders of the Level I, II and III units. The committee recommends use of the Vermont-Oxford network data for Level III and modification of the birth score data system for this purpose.

e. **A Perinatal Office at the State level** to oversee and provide consultative support for the above activities.

f. **Maternal/neonatal transport coordination** should be overseen by the state perinatal office. A "one phone call transportation protocol" should be adopted by the statewide system.

2. The committee supports and promotes the adoption of the content of ***Guidelines for Perinatal Care***, 5th Edition, co-published and endorsed by the American Academy of Pediatrics and American College of Obstetricians and Gynecologists. 2002. Copies of this book should be available for reference in every birthing unit in the state. *(The 6th Edition of the Guidelines is expected to be available in early 2008. The committee endorses the importance of hospitals reviewing and updating their guidelines whenever this publication is updated.)*

3. In recognition that the numbers of late preterm infants are increasing, the committee recommends that all West Virginia perinatal facilities comply with the ***Guidelines for Perinatal Care*** in establishing a gestational age of at least 39 completed weeks of pregnancy before elective delivery for non-medical reasons is undertaken. (See Appendix E.)

4. The committee supports and promotes the adoption of the content of ***Levels of Neonatal Care*** American Academy of Pediatrics. 2004. Levels of Neonatal Care. *Pediatrics* 114 (5), 1341-1347 (See Appendix A for definitions.)

5. The committee supports and promotes the adoption of the content of ACOG Guidelines Committee Opinions; Educational/Practice Bulletins **ACOG Compendium of Selected Publications**, updated and published every year by the American College of Obstetricians and Gynecologists. Copies of this book should be available for reference in every birthing unit in the state.

6. The Committee recommends that the definitions of levels of facilities by the WV Health Care Authority Certificate of Need office be updated to comply with the definitions outlined in Appendices C and D of this document.

The Question of Regulation

The committee recognizes that these recommendations do not necessarily mandate nor are they meant to rigidly limit the scope of services if appropriate resources are available. The committee recommends that the Central Advisory Council decide if these guidelines should be worked into state regulations. They are recommended so that all WV birthing hospitals and providers will come together to improve the pregnancy outcome of the state. Guidelines or standards that apply to major urban areas are not always practical in rural West Virginia. Unfortunately, when a bad outcome occurs and litigation ensues, the differences between urban and rural are frequently ignored. The recommended guidelines are not meant to hold West Virginia hospitals and West Virginia perinatal professionals to an impractical ideal, but to improve overall perinatal care and outcomes for our mothers and newborns using the best evidence currently available. In addition, it is recognized that modifications may be necessary so that both the objectives of this document and the unique goals of a hospital or region may be met.

APPENDICES

Due to length of the report, appendices are not attached here, but are available in the electronic version of the report which may be downloaded from the following website: http://www.wvhealthykids.org/p_wellness/pw_home.htm

Appendix A: Committee Recommendations of Guidelines for Perinatal Care in West Virginia and Designation and Definitions of Hospital Levels of Perinatal Care for:

- Level I Hospitals
- Level IIA Hospitals
- Level IIB Hospitals
- Level III Hospitals

Appendix B: Committee Recommendations of Guidelines for Birthing Centers
Appendix C: American Academy of Pediatrics Levels of Neonatal Care
Appendix D: Current WV Health Care Authority definitions of and addition of Acute Care Beds
Appendix E: Elective induction of labor or cesarean deliveries for non-medical reasons
Appendix F: Electronic Fetal Monitoring Nomenclature Update
Appendix G: Newborn Assessment
Appendix H: Recommended Registered Nurse/Patient Ratio for Perinatal Care Services

West Virginia Perinatal Partnership - 2007
Final Report and Recommendations

Central Advisory Council
Subcommittee on Perinatal Consultation, Transport, and Outreach Education

Committee Chair: *Renee Domanico, MD, Neonatologist, Cabell Huntington Hospital*
Members:
Judi Polak, RN, MSN, Neonatal Nurse Practitioner, WVU Children's Hospital
Brenda Daugherty, RN, MSN, Neonatal Nurse Practitioner, NNP Coordinator, WVU Children's Hospital
Linda Gillett, CNM, Shenandoah Maternity Center
Penny Byrnside, RN, MS, Trauma Systems Administrator, WV Bureau for Public Health
William Ramsey, MD, State EMS Medical Director, WV Bureau for Public Health
Debbie Menders, RN, Neonatal Transport Nurse, CAMC
Debbie Holmes, RN, Maternal Transport Nurse Cabell Huntington Hospital
Committee Staff: *Ann Dacey, Nurse Coordinator, WV Perinatal Partnership*

DESCRIPTION OF PROBLEM:

A system of perinatal regionalization, with consultation, transport, and outreach education has been in place in West Virginia since the mid-1970s when Neonatal Intensive Care Units (NICUs) were opened at the academic medical centers in Morgantown, Huntington, and Charleston. Perinatal regionalization developed from the need to make all levels of perinatal care available to all pregnant women and newborns no matter where they lived. West Virginia was divided into three perinatal regions with a tertiary perinatal center located in each. Tertiary perinatal centers provide the highest level of perinatal care available. In the regional system of perinatal care, tertiary care facilities provided consultation, outreach education, and transport backup for smaller hospitals in their referral regions. One of the secrets of the success of regionalization in West Virginia was **communication** and **backup** to facilities that were not equipped to handle complications. In the past, state and federal funding supported many components of this system. Gradually funding has been lost and the glue that held the system together has slowly eroded over the last decade.

From the mid-1970s to 2003, perinatal outreach was supported by funding from the WV Bureau for Public Health. In addition to providing continuing education, state-funded outreach educators and transport nurses provided many of the communication services that were needed to keep providers working together cohesively. In the 1970s, with the help of Title V federal funding, each tertiary center received over $100,000 a year from the state health department for outreach education and coordination of care within each region. After federal funding was discontinued, the WV Bureau for Public Health continued with lesser funding each year. The state funding of outreach education agreements with the tertiary care hospitals gradually dwindled each year and was finally discontinued in 2003.

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 faced in improving perinatal care. Over 200 physicians, nursing, and social workers responded to the study. **They responded that the State's perinatal health care system needed to be overhauled and that they wanted to be part of the process.**

In perinatal care, early recognition and transfer of high-risk mothers or sick newborns are the key elements of a workable system of perinatal care. Current evidence supports the theory of maternal transport as a significant factor in the reduction of neonatal mortality rates. **When maternal transport cannot occur and the birth of a high-risk newborn occurs at a community hospital, quick and organized transport by skilled health providers is a necessity**. West Virginia morbidity and mortality statistics have shown that very low-birth-weight babies do better if they are born at tertiary care centers. If it can be predicted that a mother will deliver a very premature or sick infant, efforts should be made to transfer the mother to a tertiary facility before delivery. In addition to earlier intervention by neonatologists and other specialists, the mother benefits by being closer to her newborn at a time when important decisions are being made and informed consents need to be signed. There are also many psychological benefits to being closer to a sick newborn. When a mother is transferred prior to birth, it is easier for her to be at the bedside of her sick newborn during his/her first critical hours of life.

Unfortunately, and in spite of the most careful maternal assessment, emergencies can occur at any time up to and including the birth of the baby. Other emergencies arise after the infant is born. **Provisions for neonatal transport to an appropriate level of care are essential.** The value of neonatal transport in reducing neonatal morbidity and mortality rates has been well-documented in the medical literature.

It is essential that the task of transporting high-risk pregnant women or infants be well-planned so that optimal care of the mother and fetus or newborn can be assured during transport. Initial stabilization is essential prior to transport.

The Current Status of Perinatal Transport and Outreach Education in WV

From the initial study, it appears that many of the elements of a cohesive system of care are in place but the need to move toward a statewide approach rather than a fractured regional system has become apparent. Right now, there is a lack of outreach education and communication between facilities. There is a lack of a consistent statewide philosophy to do whatever we can to back small facilities that provide excellent low-risk care but lack the resources to provide high-risk care for mothers and babies.

West Virginia has three tertiary care centers located at teaching hospitals in Charleston, Huntington, and Morgantown. Huntington's tertiary care center is located at Cabell Huntington Hospital and affiliated with Marshall University School of Medicine. Charleston's tertiary care center is located at CAMC Women and Children's Hospital and affiliated with WVU School of Medicine. Morgantown's tertiary care center is located at WVU Children's Hospital and affiliated with WVU School of Medicine.

Each of West Virginia's tertiary perinatal centers has 24-hour perinatal consultation "telephone hot lines," a high-risk prenatal clinic, a high-risk labor and delivery unit, a neonatal intensive care unit, and a 24-hour neonatal transport team staffed by either neonatal nurses or neonatal nurse practitioners. Neonatal transport teams travel from the tertiary care centers to referring hospitals to stabilize and transport sick babies to their NICUs. Both helicopters and ambulances are used and EMS arrangements are different at each of the tertiary care centers. Neonatal transport teams have been in place at the three tertiary care centers since the mid-1970's. As the three NICUs become busier and busier, the neonatal nurse practitioners go out on fewer transports and do more in-hospital coverage of sick babies.

In addition to neonatal transport teams, Cabell Huntington Hospital has had a maternal transport team in place continuously since 1977 utilizing both ground and air transport. Women and Children's Hospital had a maternal transport team from 2001 until 2003 when it was discontinued secondary to the cost of the program during budget cuts. In Morgantown, because of the long distances and large numbers, most mothers have been transported by ambulance from their community hospitals. In the 1990s, WVU-Morgantown developed a set of maternal transport guidelines used by referring hospitals and ambulance teams transporting high-risk mothers. In extreme emergencies, the WVUH Healthnet helicopter trauma team may transport high-risk mothers.

Problems Identified in the Report of the NICU Beds Committee

Physicians at the tertiary care facilities reported that they were turning away both high-risk maternal transports and infant transports, primarily due to no availability of NICU beds. Although we do not have data from all three tertiary care centers for 2007, Cabell Huntington Hospital reported that from January 1, 2007 through July 31, 2007, their NICU had already refused 44 neonatal transports. In addition, 41 maternal transports were refused because the NICU was full.

The NICU of Cabell Huntington Hospital was on diversion for 14 weeks in the first 7 months of 2007. This makes it increasingly difficult for referring hospitals to find beds for their high-risk mothers and babies. One by-product of this is that referring hospitals have to let a number of high-risk infants deliver at their own institution or are having to wait longer to transport the infant after birth. Frequently these babies will get into more difficulty than if they had been transported earlier or ideally *in utero* to a perinatal center to be delivered.

Problems Identified in Surveys of Non-Tertiary Perinatal Facilities in WV

The Sub-Committee on Perinatal Consultation, Transport, and Outreach Education conducted two surveys of the 28 non-tertiary perinatal hospitals in West Virginia:

Perinatal Transport Survey

In June of 2007, a nine-question, online survey was developed and sent to perinatal nurse managers at the 28 non-tertiary hospitals in West Virginia. Responses were received from 20 (71%) hospitals. Complete results of the survey are available in PowerPoint on the perinatal partnership website.

The survey included multiple-choice and open-ended questions and asked about:

- Ability to obtain immediate consultations on high-risk mothers and babies
- Ability to transport high-risk mothers and infants to tertiary care facilities
- Actions that happened at community hospitals when transports were declined.
- Assistance received in finding alternate beds after transports were turned down.
- Willingness of non-tertiary hospitals to take babies back to grow after a NICU admission.
- Opinions about a statewide "Transport Call Center" to help facilitate perinatal transports in WV. (The call center would find an available bed and arrange the transport of either a mother or a baby.)

The following are some findings from the transport survey:

- 70% of hospitals were not always able to get sick babies transported to NICUs
- 80% of hospitals stated they were not always able to transport high-risk mothers
- 62% of hospitals reported that the most common reason given for declined infant transports was lack of beds at the tertiary care center
- 38% of the hospitals reported that infant transports were sometimes declined due to lack of an available transport team
- 46% of hospitals reported they never received assistance in finding an alternative bed for a high-risk mother from the tertiary center that declined the transport
- 40% of hospitals reported they never received assistance in finding an alternative bed for a baby from the tertiary center that declined the transport
- 90% of hospitals agreed that making a single call to a "Transport Call Center" would be desirable.
- 90% of hospitals agreed that, even if there was a "Transport Call Center," physicians needing immediate consultation with tertiary physicians should be accommodated quickly.
- 60% of hospitals agreed that they should be able to select the tertiary facility to which the transport will be made.
- 50% of hospitals agreed that the referring hospital's choice of tertiary hospital should always be honored first, followed by the closest center.
- 68% of hospitals would be willing to take babies back and accommodate one or more growing premature babies who are stable but not yet ready to go home from an NICU.

Perinatal Outreach Education Survey

Along with communication, a very important element of a regional perinatal system of care is outreach education. ACOG/AAP standards emphasize the importance of outreach education from tertiary care centers. The ***Guidelines for Perinatal Care***[2] lists outreach education as a major responsibility of tertiary care facilities.

In August of 2007, a seven-question, online survey was developed and sent to perinatal nurse managers at the 28 non-tertiary hospitals in West Virginia. Responses were received from 21 (75%) hospitals. Results of the survey are available on the perinatal partnership website.

---

[2] *Guidelines for Perinatal Care*, 5th edition American Academy of Pediatrics, American College of Obstetricians and Gynecologists: 2002.

The survey asked hospitals if they received an adequate amount of perinatal outreach education. It included questions about the types and frequency of perinatal education that hospital staff need. It also asked when and where education should occur.

The following are some findings from the perinatal outreach education survey:

- 81% of hospitals did not receive the desired amount of outreach education from their preferred tertiary care facilities.
- The educational programs that would most meet staff's needs were chosen in the following order:
    - ALSO (Advanced Life Support in Obstetrics)
    - STABLE (Sugar, Temperature, Assisted Breathing, Blood Pressure, Lab Work, and Emotional Support to Family).
    - EFM (Electronic Fetal Monitoring)
    - Common topics in perinatal care
    - Less common topics in perinatal care
    - M&M on transports
    - Lactation
    - NRP (Neonatal Resuscitation Program)
- STABLE was the course that nurse managers wanted to occur most frequently (four times per year).
- October and April are the most popular months for educational programs to take place
- Morgantown and Charleston are the most preferred locations for conferences
- One day was the most preferred conference length
- Thursday is the most popular day of the week for educational programs

Additional Problems Identified by the Committee on Transport and Outreach Education

1. Lack of accurate recordkeeping regarding disposition when transports are turned away
2. Lack of regular communication among tertiary centers
3. Need for statewide guidelines in perinatal care topics.
4. On occasion, there are no ambulances available for infant transport for the Morgantown transport team.
5. In some counties there is a reluctance of EMS personnel to transport high-risk pregnant women to tertiary perinatal centers because of safety issues and lack of training.

COMMITTEE RECOMMENDATIONS:

1. Maternal and infant transport should be available 24-hours, seven days a week for all Level I and Level II facilities in the state. West Virginia should insure that reliable, accurate, comprehensive communication systems between referring hospitals and between the transport teams and hospitals, regarding response times, capabilities, and facilities be continuously up to date.
2. West Virginia should investigate the implementation of a single call system for perinatal transport. The characteristics of this center should include:
    a. Daily knowledge of all NICU and high-risk maternal beds (bedboard) available in the West Virginia and surrounding states
    b. Ability to immediately connect referring physicians with the appropriate neonatal or obstetrical specialists for consultation and care recommendations while awaiting transports
    c. The ability to find available beds and arrange the transports of mothers or babies.
    d. The ability to (whenever possible) arrange transports to tertiary centers closest to the homes of mothers and babies.

    e. A centrally-maintained website with evidence-based guidelines for maternal-fetal and neonatal care including:
        i. resuscitation, stabilization and transport guidelines for mothers and infants
        ii. general care for mothers and infants
        iii. development of these guidelines should take place in collaboration with perinatal care providers across West Virginia
3. Until a single call system is in place, the committee recommends the following:
    a. Interagency collaboration and communication should be fostered through monthly communication meetings of representatives from the three tertiary centers.
    b. Special attention should be given to ways for tertiary centers to communicate with each other for backup when a small hospital is in crisis and a transport is not available in the hospital's region.
    c. Ability of tertiary centers to rely on each other for help in finding NICU beds. (Some systems of care have a daily regional **NICU bedboard** posted on a multi-user website. Every morning, each tertiary care center enters the number of beds available.)
    d. Investigation of the feasibility of developing a centrally-maintained website with evidence-based guidelines for maternal-fetal and neonatal care including:
        i. resuscitation, stabilization and transport guidelines for mothers and infants
        ii. general care for mothers and infants
        iii. development of these guidelines should take place in collaboration with perinatal care providers across West Virginia
    e. Education of <u>all</u> personnel who may take calls at tertiary centers regarding the following:
        i. Referring pediatricians need to be caring for the sick infants not making calls looking for beds
        ii. No hang-up should occur until the hospital/physician feels it has been helped.
4. West Virginia should investigate the possibility of making emergency maternal transport available to all community hospitals in the state. The model developed by Cabell Huntington Hospital should be evaluated for relevance to the entire state.
5. Advanced Life Support in Obstetrics (ALSO) courses should be made available for EMS personnel, transport nurses, and hospital perinatal nurses.
6. Emphasis on keeping mothers/fathers and babies together should be promoted. Systems for the mothers to return to their communities when appropriate, without undue financial stress should be insured.
7. Tertiary centers should keep logs of all requests for transports whether they are turned down or not. Assistance given to declined requests for transfer should be noted.
8. Community hospitals should keep logs of all requests for transports and their dispositions.
9. Referring providers should receive frequent updates and information on mothers and babies that they have referred. Obstetric providers should also receive information on the health status of the infants born after mothers have been transported to tertiary centers.
10. Referring hospitals should receive frequent updates in order to support separated families in times of stress and grief.
11. West Virginia should establish an organized perinatal outreach education program coordinated by each of the three Level III perinatal facilities for each of their referral hospitals**.** State funding for an office and a coordinator for these activities in each Level III perinatal center is vital as well as reimbursement for teaching time by healthcare professionals. Special attention and support should be given to those hospitals that deliver less than 750 babies per year. Results of the outreach education survey should be taken into consideration when scheduling these programs. All birthing hospitals should be offered a yearly review of the following programs:
    a. Transport/perinatal case reviews specific to each hospital
    b. NRP, Neonatal Resuscitation Certification

c. STABLE, (Sugar, Temperature, Assisted Breathing, Blood Pressure, Lab Work, and Emotional Support to Family), a program is designed to provide healthcare professionals with knowledge on how to stabilize patients during the post-resuscitation/pre-transport period
d. Electronic Fetal Monitoring
e. Advanced Life Support in Obstetrics
f. Hospital data reviews with individual hospitals and opportunities for quality improvement.

12. A special outreach education program should be developed for staff at those hospitals that have agreed to take babies back for convalescent care after NICU admissions.
13. Plans for a perinatal transport summit, inviting all stakeholders to discuss implementation of the above recommendations, should be made for sometime early in 2008.

APPENDIX A

West Virginia Perinatal Referral Centers

Cabell-Huntington Hospital
Maternal Transport Phone Number: 800-747-2244

Maternal Transport Services Available:
Cabell Huntington Hospital has a maternal transport team staffed by credentialed transport RNs who are employed by the hospital and work in Labor and Delivery. They travel to referring hospital by helicopter, fixed wing, or ground ambulance.

How to Initiate a Maternal Transfer:
1. Call MEDCOM hotline to be patched through to maternal transport RN
2. Transport RN takes information from referring physician
3. Information discussed with on-call obstetrician
4. Referring physician is notified of acceptance or deferral and if deferred, help is provided in placing patient at another institution.

Neonatal Transport Phone Number: 800-747-2244
Neonatal Transport Services Available: Helicopter, fixed wing, ground, staffed by credentialed transport RNs.

How to Initiate a Neonatal Transfer/Transfer Process:
1. Call MEDCOM hotline to be patched through to neonatal transport RN
2. Transport RN takes information from referring physician and automatically accepts if bed is available
3. Referring physician is given opportunity to discuss patient with neonatologist
4. If NICU is on diversion, help is provided in placing patient at another institution.

Charleston Area Medical Center Women and Children's Hospital
Maternal Transport Phone Number: 304-388-2185

Maternal Transport Services:
Women and Children's Hospital does not have a maternal transport team but uses the services of Kanawha County Emergency Ambulance Authority (KCEAA) and Healthnet

How to Initiate a Maternal Transfer:
1. Call above number and give info to Charge Nurse.
2. Chief OB Resident will call back and discuss transport with referring Physician.
3. A decision is made regarding type of transport to be dispatched.

Neonatal Transport Phone Number: 866-428-2264
Neonatal Transport Services Available: Air and ground, Staffed by neonatal nurses

How to Initiate a Neonatal Transfer/Transfer Process:
1. Call via Transport Hotline #866-428-2264
2. Neonatologist, Transport RN or Charge RN takes information from referring Physician

3. Discuss bed availability with Neonatologist and decision to accept or defer transport is made.
4. Referring facility is notified of acceptance or deferral of patient
5. Acuity tool to determine method of transport (air vs ground)
6. Contact Medbase and transportation arranged

During this process Neonatologist may make stabilization/treatment recommendations to referring physician.

WVU Children's Hospital, WVU Hospitals, Inc. (WVUH) Morgantown
Maternal Transport Phone Number: 1-800-WVA-MARS (1-800-982-6277).

Maternal Transport Services Available:

WVU Children's Hospital does not have a maternal transport team. Patients are transferred from the care of the referring physician or certified nurse midwife to the receiving physician at WVUH. The referring physician arranges local transportation of high-risk obstetrical patients. In cases of extreme emergency, the WVU HealthNet team may be sent. For HealthNet to be sent, the WVU perinatologist consults with the MEDCOM physician on call. The type of transport and escort required are determined in agreement by both referring and accepting providers. Arrangements are then made for appropriate personnel with obstetrical experience (Physician, Certified Nurse Midwife, Registered Nurse, Medic, or Paramedic) to accompany the woman.

How to Initiate a Maternal Transfer/Transfer Process:

Phone consultation with a WVU Children's Hospital perinatologist may be obtained by calling the toll free Medical Access and Referral number: 1-800-WVA-MARS (1-800-982-6277). During evening and night hours, phone calls from referring physicians will be transferred to the attending faculty ob/gyn physician. **There is always a faculty attending ob/gyn in house.** The attending faculty member on-call may accept a transport or can reach the attending perinatologist at all times. The decision regarding maternal fetal transport is the joint responsibility of the patient's referring physician and the accepting perinatologist (or faculty attending) at WVU Hospitals, Inc.

Neonatal Transport Phone Number – NICU: 304 598-4140

Neonatal Transport Services Available:

24 hours/day via ground or HealthNet helicopter. Transport mode is dependent on acuity of infant, length of transport, and availability of resources. Transport team is composed of neonatal nurse practitioner and/or a trained transport nurse as well as a respiratory therapist.

How to Initiate a Neonatal Transfer:

A transport can be initiated by calling the NICU 304 598-4140. The neonatal nurse practitioner or the transport nurse will take the information. After evaluation and discussion with the attending physician, the referring nursery will be called with mode of transport and estimated time of arrival. When a baby has been accepted for transport, the WVU NICU will FAX a referral form to be filled out by the referring hospital. Transport initiation and or phone consultation with a WVU Children's Hospital neonatologist may be obtained 24 hours a day by calling the toll-free Medical Access and Referral number: 1-800-WVA-MARS (1-800-982-6277).

APPENDIX B

General Guidelines for Arranging For Transportation

When determining the mode of transport, the following factors should be considered:

- How soon does the patient need to reach the referral center?
- What are the weather/ground conditions that might inhibit air transport?
- What are the transport times for ground versus air transport from the referring institution?
- Availability of nursing and paramedic staff for transport
- The transportation decision should be made by the receiving physician in collaboration with the referring physician based on clinical judgment, with careful consideration given to the above questions.

Appendix C
Maternal Referral/Consultation

A. Indications for Transfer

1. Maternal status does not improve.
   Examples:
   - Preterm labor
   - Preterm premature rupture of membranes (PPROM)
   - Hypertensive disorders
   - Second trimester incompetent cervix
   - Third trimester bleeding
2. Delivery will occur prior to 34 weeks of gestation.
   Examples:
   - Preterm labor
   - PPROM
3. Newborn facilities are inadequate to support the infant should delivery occur within 24 hours.
   Examples:
   - Suspected or known fetal anomalies
   - Intrauterine growth restriction (IUGR)
4. The obstetrician or pediatrician feels that a mother, fetus, or newborn may require intensive care or special services available in the perinatal centers.
   Examples:
   - Suspected or known fetal anomalies
   - IUGR
   - Pregnancies complicated by medical disorders, such as diabetes, cardiac disease, sickle cell disease, or thromboembolic disease

B. Ambulance Transport - Basic Stabilization Requirements for <u>All</u> Obstetric Patients

<u>NO</u> digital exams on patients with Preterm Premature Rupture of Membranes (PPROM) who are <u>not</u> in labor. Patients with PPROM should have a sterile speculum exam for nitrazine <u>and</u> ferning to confirm ruptured membranes. Cervical dilatation can be assessed visually at the time of sterile speculum exam.

1. Patient should have an IV with an 18 gauge (or larger) catheter. (Since IVs are difficult to start while in motion, two sites are recommended.)
2. Keep patient NPO.
3. Maintain the patient in left lateral or semi-Fowler (with left lateral uterine tilt) position as appropriate.
4. Experienced personnel as indicated and agreed upon by referring physician and perinatologist should accompany the patient. (For instance, a registered nurse or medic should always accompany a patient on magnesium sulfate.)
5. Vital signs including FHR should be obtained every 15 minutes. The FHR should be auscultated for a full 60 seconds. If the patient is in labor, the FHR should be auscultated before, during and after uterine contractions at the appropriate time intervals. Due to noise levels, it is recommended that a battery-operated ultrasonic Doppler fetal heart detector and digital readout sphygmomanometer be used if available. It might be necessary to stop the ambulance for a check of blood pressure and fetal heart rate.
6. Oxygen by **face mask** should be used any time fetal or maternal status requires.

7. In the event of unanticipated, non-remedial fetal distress, imminent delivery, or unstable maternal status, receive instructions from MEDCOM. The patient should be taken to the nearest hospital. The ambulance crew should notify the hospital of the patient's intended arrival.

C. Maternal Transport Equipment

1. Equipment for fetal/maternal monitoring:
   a. BP equipment.
   b. fetoscope or Doppler
   c. reflex hammer
   d. stethoscope
2. Equipment for maternal IV administration
   a. adhesive tape and alcohol sponges
   b. infusion pump
   c. IV catheters (16 and 18 gauge)
   d. IV solutions: Ringer's lactate, dextrose
   e. needles and syringes of different sizes
3. Equipment for respiratory support
   a. Endotracheal tubes and stylets
   b. Laryngoscope handle with blades
   c. Oral airways
   d. Oxygen mask
   e. Suction catheters (# 14, #16, #18) and suction equipment
4. Medications
   a. Calcium gluconate
   b. Diazepam
   c. Lidocaine hydrochloride (Xylocaine)
   d. Magnesium sulfate
   e. Methylergonovine maleate (Methergine)
   f. Oxytocin
   g. Misoprostol rectal dose for postpartum hemorrhage
   h. Plasma expanders; plasma protein fraction (Plasmanate) and albumin
5. Emergency delivery equipment
   a. Basin
   b. Bulb syringe
   c. Cord clamp
   d. Suction and suction catheters suitable for meconium removal
   e. Hemostats
   f. Curved Kelly clamps
   g. Sterile gloves
   h. Sterile sponges
   i. Straight scissors
   j. Towels and blankets
6. Infant Resuscitation equipment
   a. Oxygen mask (premature and neonate sizes)
   b. 100% oxygen and infant size positive pressure bag
   c. Infant stethoscope
   d. Neonatal laryngoscope, ET tubes and tape
   e. Medications (Narcan, epinephrine, sodium bicarbonate, volume expanders)
   f. Suction and infant suction catheters

APPENDIX D
Neonatal Consultation and Transfer

The decision to transport an infant depends upon a variety of factors, including: availability of 24-hour skilled nursing, respiratory therapy, equipment, x-ray and laboratory support, as well as physician knowledge and time.

The following are examples of disease entities or conditions that might be reasons for consultation or transport:

1. Respiratory distress from any cause (i.e., meconium aspiration, neonatal pneumonia, infant respiratory distress syndrome) - without the capability to monitor oxygen therapy and arterial blood gases - without the capability to give ventilatory assistance
2. Intravenous fluid requirements
3. Surgical conditions
4. Low birth-weight infants
5. Suspected congenital heart disease
6. Significant birth complications
7. Severe neonatal depression
8. Unresponsiveness to resuscitation efforts
9. Infants of diabetic mothers
10. Neonatal seizures
11. Suspected infection (sepsis, meningitis)
12. Hemolytic disease
13. Apnea
14. Suspected shock
15. Persistent acidosis
16. Recurring hypoglycemia
17. Infants not doing well for unknown reasons

What to Have Ready when the Team Arrives:

The following should be ready to send with the transport team*:

1. Copy of infant's chart with completed nursing documentation (urine output, passage of stools, details of resuscitation, oxygen administration, vitamin K administration, eye prophylaxis, hepatitis vaccine, other medication administration)
2. Copy of maternal record including complete maternal history and labor and delivery records, including all medications received during labor.
3. All X-rays and other tests

*Items not available at time of transport should be FAXED ASAP.

The following may be requested so hold until decision is made

1. Cord blood specimen and placenta
2. Maternal blood specimen (5-7 ml. clotted)

APPENDIX E

Transport of Stable Newborns from a Perinatal Center To a Community or Convalescent Hospital

(From Maryland EMS Guidelines**)**

The following refers to stable infants being transferred for convalescent care who do not need the same level of care during transport as newborns being transferred to a Perinatal Referral Center or those being transferred who still require intensive care:

1. These elective transports must be pre-arranged between the referring Perinatal Referral Center and the receiving hospitals.
2. Transports must be carried out by a licensed Advanced Life Support Commercial Ambulance
3. When an ALS Commercial Ambulance is utilized for these transports, it must have:
   a. One neonatal transport incubator powered by internal batteries as well as by alternating current power, which is secured with litter fasteners that meet the U.S. General Services Administration standard for ambulance litter fasteners and anchorages;
   b. One neonatal Bag Valve Mask (BVM) (a pediatric BVM is too large);and
   c. A registered nurse with Neonatal Resuscitation Program (NRP) certification must accompany the infant.

West Virginia Perinatal Partnership - 2007
Final Report and Recommendations

Central Advisory Council
Subcommittee on Perinatal Telecommunications

Committee Chair: *Stephen Bush, MD, Chair OB/GYN, CAMC*
Committee Members:
Coy Flowers, MD, Obstetrician, Greenbrier Physicians
Fran O'Brien, RN, Nurse Manager, Greenbrier Valley Medical Center
Luis Bracero, MD, Director Maternal Fetal Medicine, CAMC, WVU School of Medicine
Patricia Lally, DO, WV School of Osteopathic Medicine
Brian Young, CAMC WVUPC
Doug Young, CAMC, Lead Technician, Media Network Specialist, CAMC Health Education and Research Institute
Chris Budig, Director, MDTV, WVU School of Medicine
Sam Roberts, MD, Elkins, Board Member WV AAFP, Rural Family Practice
Julia Ellison, DO, WV School of Osteopathic Medicine
Arnold Hassen, PhD, WV School of Osteopathic Medicine
Kevin Sexton, Information Systems Director, Greenbrier Valley Medical Center
Committee Staff: Ann *Dacey, Nurse Coordinator, WV Perinatal Partnership*

DESCRIPTION OF THE PROBLEM

The only board-certified perinatal specialists in West Virginia are located in Charleston, Huntington, and Morgantown. Women and babies needing the services of high-risk specialists often have to travel long distances for them. Many do not keep appointments because of the long distances on difficult West Virginia roads.

In other states, telemedicine is being used to bring consultative expertise to patients and community-based physicians in rural areas, saving transportation cost and time. In addition, community-based physicians receive valued support to their primary care delivery. In addition telemedicine also gives health care providers access to continuing education lectures that are given at medical schools.

Telemedicine is the delivery of medical care or services from a distant site. Telemedicine utilizes interactive video and audio teleconferencing technology that allows a physician at a specialty center to see the patient and/or sonogram in real time (almost at the same speed as in person). When needed, specialized ultrasound equipment can digitally transfer a sonogram image to a specialty center.

Committee Directive: Establish a committee to research methods to better utilize telecommunications for perinatal consultation and training and make recommendations.

Work of Committee

It was decided that the best way to explore feasibility was to develop a small demonstration project and study everything about it from cost, to patient billing, to attitude of providers. After several attempts to organize a committee meeting, a small work group of committee members began meeting in May of 2007 at CAMC. Several factors precipitated this meeting:

1. Charleston Area Medical Center (CAMC) had received requests for specialists to conduct regular high-risk pregnancy consultations in Lewisburg, West Virginia. An obstetrician at Greenbrier Valley Medical Center (GVMC) wanted to retain connections with the perinatologists at CAMC, where he had previously been on faculty. He was concerned that patients he now referred to Charleston often did not keep their appointments because the traveling distance was long.

2. Greenbrier Valley Medical Center had previously been identified as a hospital that would be open to establishing a demonstration project because a pediatrician there was very interested having newborn consults from the nursery. She had the support of nursing and administration at GVMC and administration at the West Virginia School of Osteopathic Medicine where she was on faculty

This group's goal was to do a small demonstration project then make recommendation to the Central Advisory Council regarding the utilization of telecommunications in perinatal health in West Virginia.

ACCOMPLISHMENTS TO DATE

At the time of this writing, the demonstration project is still being set up. Identification of needs has taken place through several site visits at GVMC. In addition to several visits and phone conversations between technical advisors at both sites, a site visit with key administrative stakeholders took place.

Services to be provided were identified by the stakeholders involved:

- High Risk OB consultation
- Newborn Nursery consultation

- Follow-up pediatric consultations on newborns
- Continuing Education for physicians and nurses

Equipment needed at Greenbrier Valley Medical Center was identified during site visits by the media specialist from CAMC. In addition, he identified equipment that is needed at CAMC and identified the cost of equipment at both sites. Initially the cost of equipment at each site is estimated to be approximately $12,000/site. The cost of the equipment at GVMC will be covered by a grant that the WVSOM received from the perinatal partnership. At present, funding sources are being identified to cover the cost of equipment at CAMC.

A demonstration project using loaned equipment took place at the "Growing Healthy Children" conference. The obstetrician at GVMC and the perinatologist in Charleston conducted a simulated consultation with a pregnant patient at GVMC. Experts and technical advisors were on hand to make recommendations. The demonstration was a great success and many audience members were impressed as shown through feedback received by the presenters.

RECOMMENDATIONS

The committee recommends continuation of demonstration project with recommendations to follow after completion of project. These recommendations should include:

- A complete cost/benefit analysis of the project
- An assessment of its applicability to other rural sites in West Virginia

Central Advisory Council
Subcommittee on Universal Prenatal Risk-Screening Tool

Committee Chair: *Pat Moore Moss, MSW, LCSW, Director, Office of Maternal, Child and Family Health*

Committee Members:
Allan Chamberlain, M.D.
Ted Cheatham, Director, PEIA
Dan Christy, MPA, Director, Health Statistics Center
Jeannie Clark, RN, Director, Right From the Start
Liz Cohen, M.S.W., WVU Department of OB/Gyn
Brenda Dawley, MD, ACOG Chair, Elect/Joan C. Edwards School of Medicine
Pam Jones, Blue Cross Blue Shield
Beverly Kitchen, RN, CAMC, Right From the Start
Tom Light, Programmer, Health Statistics Center
Patty Perdue, Partners in Community Outreach
Mark Polak, MD, Neonatologist, WVU Children's Hospital
Robert Pulliam, MD, Access Health
Stephanie Shabandy, RN, Insurance Commission

Committee Staff: *Ann Dacey, Nurse Coordinator, WV Perinatal Partnership*

DESCRIPTION OF PROBLEM:

Maternal Risk Screening

Concerns about maternal and infant health were the catalysts for convening the Perinatal Partnership in 2006. The resulting "*Blueprint to improve West Virginia Perinatal Health*," contained multiple recommendations and action steps to make needed system improvements. ***Policy Recommendation One: to create a coordinated statewide perinatal system included the request that the state identify a maternal risk scoring instrument to be used universally by all obstetrical medical providers and all payers.***

Comprehensive risk assessment enables the prenatal care provider to determine whether the woman, the fetus, or the infant are at increased risk and provides the basis for further assessment and intervention. Risk factors are characteristics that indicate a higher probability of adverse outcome and help guide the action by the woman, social supports, and the medical provider.

The Committee believes that early prenatal care, with an emphasis on risk assessment at the first prenatal visit and appropriate follow-up, is critical. In West Virginia, the most likely adverse pregnancy outcome is preterm labor and/or low birthweight, as depicted in the chart below:

Low Birthweight Births by Age of Mother*
West Virginia Residents, 2000-2004

Age	Number of Births	Low Birthweight	Percent of Total
10-14	142	13	9.2%
15-17	3,745	408	10.9%
18-19	9,351	928	9.9%
20-24	33,756	3,050	9.0%
25-29	29,583	2,282	7.7%
30-34	18,352	1,580	8.6%
35-39	7,276	762	10.5%
40-44	1,436	168	12.0%
45+	108	25	25.0%
Unknown	163	13	8.1%
WV Total	**103,912**	**9,229**	**8.9%**

A review of health data and key informant survey responses confirms that smoking during pregnancy plays a huge role in poor pregnancy outcomes. In West Virginia, 26.6% of pregnant women smoke compared to the national average of 12.2%. The table on the following page shows the percentage of low birthweight births to mothers who smoked during pregnancy:

* Note: Percentage excludes unknown birthweight
Source: WV Health Statistics Center, WV Bureau for Public Health

Low Birthweight Births by Age of Mother* By Mothers Who Smoked During Pregnancy West Virginia Residents, 2000-2004			
Age	**Number of Births**	**Low Birthweight**	**Percent of Total**
10-14	37	4	10.8%
15-17	1,355	183	13.5%
18-19	3,532	453	12.8%
20-24	11,332	1,394	12.3%
25-29	6,380	807	12.7%
30-34	2,956	480	16.2%
35-39	1,349	249	18.5%
40-44	325	59	18.2%
45+	28	5	17.9%
Unknown	49	8	16.3%
WV Total	**27,343**	**3,642**	**13.3%**

Since the 1980s, West Virginia has screened low income, government-sponsored women for adverse outcomes, and although the screening instrument has changed numerous times over the last 25 years, the use of the information to prevent or treat conditions associated with poor pregnancy outcomes has remained the same.

Currently, low income pregnant women who receive government-sponsored health care are routinely screened using the Prenatal Risk Screening Instrument, also known as PRSI, developed by West Virginia University, Department of OB/Gyn. The risk scoring forms completed by the pregnant woman's medical practitioner trigger a referral to the Right From The Start (RFTS) Project. The RFTS provider network is a community-based cadre of licensed social workers and nurses who provide individual care planning, taking into account medical and psychosocial patient risks. The RFTS workforce has responsibility to arrange for community resource referral and consultation, as well as offering in-home educational services designed to affect patient behavior.

The challenge is, while the screening has enjoyed widespread use, it is not used for pregnant women who have third party coverage, and even if the PRSI were completed, a pregnant woman who is not in government-sponsored care is not eligible to receive the in-home care coordination offered by the RFTS network. Further, participation in RFTS, in its current iteration, is strictly voluntary, although all pregnant Medicaid beneficiaries and Title V beneficiaries are eligible for the program.

While other insurers do support prenatal risk screening for their beneficiaries, the intensity and the type of management offered in response to the probability of adverse patient outcome varies by carrier. There is no insurer that provides the care management equivalent of RFTS, i.e., home visits and one-on-one education.

Process:

A survey of West Virginia medical obstetrical practitioners was completed to determine their current risk screening practices including the instrument used. The results of the survey are shown in the following chart:

Prenatal Risk Assessment Instrument Survey (PRSI)					
Number of Surveys Mailed	% of Responses Using PRSI	% of Responses Using ACOG	% of Responses Using POPRAS	% of Responses Using In-House	% Not Using a Risk Assessment Form
120	40%	14%	4%	14%	28%

The Prenatal Risk Assessment Instrument **(**PRSI) was most often cited as the tool used, and does include medical history and psychosocial information to assess risk. **Screening differs from assessment in that screening only identifies those most likely to be at increased risk and should result in further assessment to determine intervention and service need. In short, risk screening is the beginning of the process.**

The committee also reviewed risk screening instruments from multiple sources, including ACOG, Connecticut Care, Florida's Healthy Start, and McKesson. These instruments were evaluated to determine comparability to West Virginia infant death and selected risk factors, as reported by the West Virginia Health Statistics Center and shown in the following chart:

Infant Deaths and Selected Risk Factors Associated with Infant Deaths West Virginia Residents, 2005				
Factor	Births		Infant Deaths	
	Number	Percent	Number	Percent
Total	**20,834**		**168**	
Birthweight <2,500 Grams	1,984	9.5	101	60.1
Birthweight <1,500 Grams	339	1.6	71	42.3
Gestational Age <37 Weeks	2,595	12.5	102	60.7
Age of Mother <20 Years	2,472	11.9	27	16.1
Age of Mother <15 Years	22	0.1	0	0.0
Unmarried Mothers	7,589	36.4	78	46.4
Mothers Using Tobacco	5,509	26.4	62	36.9
Mothers Using Alcohol	90	0.4	1	0.6
White Mothers	19,891	95.5	159	94.6
Black Mothers	698	3.4	8	4.8
Mothers of Other Races	245	1.2	1	0.6

Source: West Virginia Bureau for Public Health, Health Statistics Center, 2007

RECOMMENDATIONS:

- The PRSI, a screening instrument unique to West Virginia, can be used statewide without significant cost investment. The PRSI is not copyrighted.
- The PRSI is one page and not burdensome for the medical practitioner or other office staff. **Cue:** This was a major topic of discussion because of the already existing demands upon the medical practitioner network.
- The PRSI, as evidenced by the survey, already enjoys widespread acceptance and use.
- Because the form is homegrown, we have the option to modify it.
- Modifications to the form can, in time, be a result of data gathering, analysis and evaluation to better reflect West Virginia's need and patient risks.

- Explore web-based submission of the completed screening instrument. To achieve this, data repository issues will need to be discussed further.

Caveats:

- The adoption of a universal, uniform prenatal risk screening instrument for statewide use, to be completed at the first prenatal visit by the health provider, also requires the following:
    - The availability of risk-appropriate interventions. This includes:
        - Consultation with subspecialty care.
        - Co-management with specialty or subspecialty care.
        - A system capable of accepting the transfer of patient care responsibilities to specialty or subspecialty care. *This work is being addressed by another Committee. See "*A Blueprint to Improve West Virginia Perinatal Health*," pages 49 and 51.
- Intervention and supports for at-risk populations must be based on the "degree of risk" by establishing levels of patient care predicated on need. High priority situations where both medical and psychosocial needs are great require more intensive interventions and action.
- Health surveillance data collected from screenings should be used to evaluate and improve health policy, programs and services.
- Services and intervention required to care for high-risk populations must be provided universally, regardless of the insurer; in other words, not just for persons who are Title XIX or Title V beneficiaries.

WEST VIRGINIA RIGHT FROM THE START
PRENATAL RISK SCREENING INSTRUMENT

* Required Fields

SECTION 1: DEMOGRAPHIC INFORMATION
TO BE COMPLETED BY CLIENT OR STAFF MEMBER

*Name: Last First MI	Medicaid No.	*Today's Date:
*Address: Street City Zip Code	*Social Security No.:	
*County of Residence:	Telephone: Home: _____ Contact: _____	Non-Citizen ❑ Yes ❑ No
*Date of Birth:	Age:	
Race: ❑ White ❑ Black/African American ❑ Asian ❑ American Indian/Alaska Native ❑ Native Hawaiian/Pacific Islander	Education: Years completed: _____ Degree/Diploma: _____	Weight before pregnancy:
Ethnicity: Hispanic/Latino ❑ Not Hispanic/Latino ❑ *(check all that apply)*		Married: ❑ Yes ❑ No
Household Size:	Household Income:	Public Assistance: ❑ WIC ❑ Food Stamps ❑ TANF *(check all that apply)* ❑ Medicaid ❑ Housing

1. **Do you and your family have inadequate: (*check all that apply*) ❑ a) Food ❑ b) Clothes ❑ c) Shelter ❑ d) Transportation**
2. **Do you smoke? ❑ Yes ❑ No If yes, number of cigarettes per day _____ Does your partner smoke? ❑ Yes ❑ No**
3. **Do you drink alcohol (wine, beer, mixed drinks)? ❑ Yes ❑ No If yes, ❑ Daily ❑ Weekly ❑ Occasionally**
4. **Does your partner drink alcohol? ❑ Yes ❑ No If yes, ❑ Daily ❑ Weekly ❑ Occasionally**
5. **Have you used recreational drugs during the pregnancy? ❑ Yes ❑ No If yes, what type _____**
6. **Have you ever been a victim of abuse or violence? ❑ Yes ❑ No**
7. **If you could change the time of this pregnancy, would you want it:(*check one*) ❑ Earlier ❑ Later ❑ Not at all ❑ No change**
8. **Have you moved more than 3 times in the last 12 months? ❑ Yes ❑ No**

SECTION 2: HEALTH AND SOCIAL INFORMATION
TO BE COMPLETED BY PROVIDER

Name and Title of Prenatal Care Provider:	Provider Telephone Number:	
LMP (month, day, year)	EDC (month, day, year)	Trimester of pregnancy at first prenatal visit: ❑ 1st ❑ 2nd ❑ 3rd

Previous Obstetrical History: *Enter the number in each area (Use zero for none)*
G _____ P _____ Term _____ Preterm _____ Abortion _____ Spontaneous _____ Induced
Living _____ Low Birth Weight_____

Breastfeeding History: ❑ Yes ❑ No If Yes, how long?: _____

Recent Contraceptive History: ❑ None
Type:

Did patient's last pregnancy result in a:
a) miscarriage/stillbirth ❑ Yes ❑ No
b) a baby less than 5½ pounds, born more than 3 weeks early, or stayed in the hospital after the mother went home ❑ Yes ❑ No

Other health/social history: _____

Witness Signature/Agency: _____ Date: _____

SECTION 3: CONSENT
TO BE COMPLETED BY PATIENT

I have received an explanation of the Right From The Start Project and I give permission for my information to be shared with Right From The Start (RFTS) and agencies participating in my care. I understand that this information will be held strictly confidential.

_____ Signature of Patient

_____ Date

Referral Closure Codes (For DCC Use)

❑ B-01 Spontaneous Abortion	❑ B-02 Induced Abortion	❑ B-03 Moved out of state	❑ B-04 Transferred out of region
❑ B-06 Unable to Establish Contact	❑ B-07 Refused Services	❑ B-08 Death	❑ B-14 Did not meet eligibility

DCC is to return a copy of form to RCC with appropriate closure code checked if unable to complete the Initial Client Assessment (R036)

OMCH/RFTS-R300
Revised 1-07
PRENATAL RISK SCREENING INSTRUMENT

White: Patient Chart
Yellow: DCC
Pink: RCC
Goldenrod: Patient

West Virginia Perinatal Partnership - 2007
Final Report and Recommendations

Central Advisory Council
Subcommittee on Adequacy of NICU Beds

Committee Members:
Lori Blackburn, RN Cabell Huntington Hospital, Huntington
Luis Bracero, MD, Maternal Fetal Medicine Director, WVU School of Medicine – Charleston Division
David Chaffin, MD, Director Maternal Fetal Medicine, Marshall University, Huntington
Ann Dacey, RN, WVU SOM, Center of Excellence in Women's Health
Renee Domanico, MD, Director of Neonatology, Marshall University, Huntington
Janet Graeber, MD, Director of Neonatology, Morgantown
Nancy Marcus, RN, CAMC Women and Children's Hospital, Charleston
Stefan Maxwell, MD, Director, NICU, CAMC Women and Children's Hospital, Charleston
Robert Nerhood, MD, OB Director, Marshall University School of Medicine
Judi Polak, NNP, WVU Hospitals, Morgantown
Amy Smith, RN, Director, Women & Children's Services, Cabell Huntington Hospital, Huntington
Michael Stitely, MD, Assistant Professor & Vice Chair for Clinical Services,
Department of OB-Gyn, WVU-Morgantown
Mike Vernon, PhD, Chair, Department of OB-Gyn, WVU-Morgantown
Advisor: *Dayle D. Stepp, Director, Certificate of Need, WVHCA*
Committee Staff: *Nancy Tolliver, RN, MSIR*

DESCRIPTION OF PROBLEM

The 2006 Key Informant Survey of perinatal providers found that many providers, especially at small rural hospitals, complained that pregnant women and/or their newborn infants needing tertiary care were being turned away due to a lack of bed capacity at the three tertiary care centers in the State. Further study demonstrated this to be true and that the Neonatal Intensive Care (NICU) facilities have been functioning at 100 percent capacity.

Physicians with the tertiary care facilities reported that they were turning away both high-risk maternal transports and infant transports, primarily due to no availability of NICU beds. The following numbers of transport turnaways were reported for the state's three tertiary care facilities in 2005.

WV Tertiary Care Facility	NICU Turnaways 2005	Number of Babies Turned Away 2005	Maternal Turnaways 2005
Cabell-Huntington Hospital	25	32	59
CAMC Women's and Children's Hospital	44		5
WVU Hospitals	59	65	57

Although we do not have data from all three tertiary care centers for 2007, Cabell Huntington Hospital reports that from January 1, 2007 through July 31, 2007, their NICU had already refused 44 neonatal transports and 41 maternal transports because the NICU was full.

Dr. Joe Werthammer of Cabell Huntington said, "We have been on diversion for 14 weeks in the last 7 months. This makes it increasingly difficult on referring hospitals to find a home for their high-risk mothers and babies. One by-product of this is that referring hospitals have to let a number of high-risk infants deliver at their own institution or are having to wait longer to transport the infant after birth. Frequently these babies will get into more difficulty than if they had been transported earlier or ideally *in utero* to a perinatal center to be delivered."

WVU Hospitals requested a Certificate of Need increase from the WV Health Care Authority for their NICU beds. The increase of nine beds was awarded, bringing the total number of NICU beds at the hospital to thirty-nine in 2007. As a result, the turnaways related to a lack of beds at WVU Hospitals have decreased. Since the new NICU beds began opening in July 2007, staffing up the unit has been a major initiative. Although most infants' can be accommodated at the WVU Hospitals at this time, the bed increase does not address any future NICU bed needs. Additionally, turnaways related to transport conditions, such as weather, helicopter and ambulance availability are still issues with which the facility is dealing.

Routine Referrals to Out-of-State NICU Facilities

It has long been the practice that high-risk infants and pregnant women are referred for medical consultation and care to the tertiary hospital facility closest to the family residence. These referral patterns can be seen along the border areas of the State, especially in the northern and eastern panhandles. Likewise, patients from other border states are routinely referred to West Virginia NICU facilities for care. These "regional referral patterns" are well-established and respected. The referrals directly to out-of-state NICU facilities are not factored into the turnaway numbers reported here. Those contacts are made by the referring physician and or the rural hospital facility directly as a matter of routine.

Increase in NICU Discharges – 1999-2005

From 1999 through 2005, the number of infants discharged from the State's three NICUs increased by 165 percent, from 679 discharges in 1999 to 1,805 discharges in 2005. Although not all NICU-treated infants are West Virginia residents, this would amount to about 6 percent of the West Virginia infants born. Only 3.34 percent of newborns cared for in the three NICUs during those years expired prior to discharge. The following chart shows discharge data provided by the WV Health Care Authority:

NICU Discharges 1999-2005- WV Health Care Authority

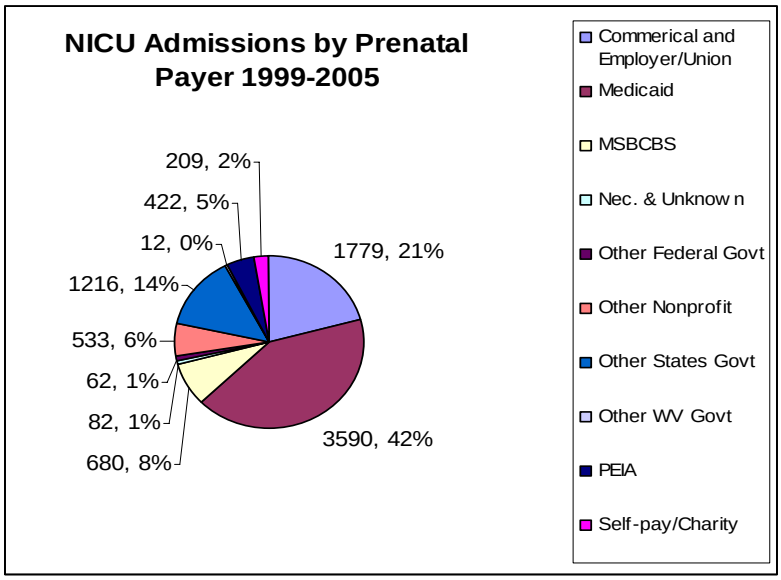
NICU Infants Discharged To	Number Infants	Percent
Home	7526	86.65%
General Hospital	454	5.23%
Skilled Nursing Facility	33	0.38%
Intermediate Care Facility	10	0.12%
Another Type Care Institution	147	1.69%
Home/Home Health Service	165	1.90%
Expired	290	3.34%
Reserved	57	0.67%
Hospice	4	0.04%

It is not completely clear why the increase in utilization has been so severe and so sudden; however, it should be noted that the increase in utilization of NICU beds is not peculiar to the State of West Virginia. There does appear to be a national trend and may be related to an increase in low birth-weight births. There is speculation that a number of causes have influenced this increase in NICU utilization. Some of the suggestions are listed below. As reported later in this report, many states are experiencing an increase and most of those states are adjusting their CON methodology to reflect this growing need.

1. The incidence of identified and treatable maternal conditions has increased, yielding the need for more high-risk beds for pregnant women and their infants. Many of these conditions warrant delivery of the infant at gestational ages that necessitate NICU care after birth. Some conditions that fall into this category include: diabetes, gestational diabetes, chronic hypertension, pregnancy-induced hypertension, intrauterine growth retardation, and eclampsia. For first-time mothers in West Virginia, the incidence of labor induction with a preexisting medical condition has increased from 14.6 percent to 18.5 percent of births from 2001-2005.
2. It has been found that women who become pregnant through assisted reproductive technology (ART) are more likely than others to have preeclampsia, gestational diabetes, preterm delivery, and vacuum or forceps delivery. The American College of Obstetrics and Gynecology (ACOG) said in a news release October 31, 2005, that though a number of the adverse outcomes associated with ART may actually be linked to the cause of infertility itself rather that the treatment for this condition, risk increases substantially when carrying more than one fetus.
3. The advent of assisted technology for fertilization and pregnancy has increased the chances of multiple births, low birth-weight, premature births, and higher perinatal mortality. The ACOG news release of October 31, 2005, noted that in the United States (1996-1999), 33 percent of all multiple births could be attributed to ovulation induction or assisted reproductive technology (ART).

4. West Virginia's smaller hospitals offer family-centered maternity care and many have eliminated the traditional nursery care once provided for sick or premature infants. This may have resulted in an increase in the volume of referrals to the State's three tertiary care centers.
5. In the past, most community hospitals maintained staffing and equipment for sick or premature infant care. It was the common practice for the NICU to refer the infant back to the community hospital once it was no longer considered critical and in need of NICU care. This practice may be occurring less often as the result in a change in medical practice. During the time period studied, 1999-2005, just 5.23 percent of newborns were transferred back to the community hospital upon discharge from the NICU.
6. The demand for detoxification care for newborns is a recent and increasing occurrence. The Perinatal Partnership has developed a plan to further identify the extent of the problem and to address this issue.
7. West Virginia has a high rate of smoking among pregnant women associated with a high rate of low birth-weight infants. Medical care of sick and premature newborns has improved dramatically over the past 15-20 years. As a result, sick and premature infants are faring better and living longer than in previous decades. Very possibly they are staying longer in NICU for needed treatment.
8. The *2006 Key Informant Survey* identified elective labor induction prior to 39 weeks gestation as a contributor to infants being transferred to NICUs. Additional studies conducted during 2007 found this to be true. The Department of Health and Human Resources found that from 2001-2005, of first time mothers, 20.3 percent were reported as having labor induced without having a preexisting medical risk factor. Just 17.3 percent of first time mothers with a preexisting medical risk factor had labor induced. Of those induced without a preexisting medical risk factor, more than 25 percent were less than 39 weeks gestation.

Cost To Society



The NICU beds present a cost to society. A review of data by the West Virginia Health Care Authority shows that Medicaid covers 42 percent of all **in-state** NICU admissions. Commercial – employer and union insurance covers 21 percent, Mountain State Blue Cross Blue Shield covers 8 percent, PEIA covers 5 percent, and other West Virginia government covers 1 percent of all NICU admissions.

The West Virginia Public Employees Insurance Agency (PEIA) and West Virginia Medicaid have very different experiences related to the NICU reimbursements per day. Information provided by the West Virginia Health Care Authority from claims data (Please see Appendix A) shows that over a three-year period, 2002-2005, PEIA NICU days have increased by about 31 percent and average reimbursement has decreased by $14.63 per day. However, PEIA is paying significantly more for out-of-state NICU care than for in-state care.

A cost to society that is not addressed here is that of parents and infant being separated by long distances during the babies' early days and months of life. Clark Hansbarger, MD, Vice President for Health Sciences, WVU School of Medicine, Charleston Division, reflected the situation with the following words:

"Regarding the distance that separates parents from their ill or premature newborns, this is a very apparent issue for future parenting concerns such as abuse, neglect, and guilt. We need to be developing ways to minimize the problems brought on by extended separation after birth.

Can we consider preventive strategies such as the use of audiovisual technology contact into the home by website networking? Assuring parental to infant contact should be a highest priority for the NICU patient!!

This could also be enhanced by "support groups" in each "county" that would relate to the experience the family is having and offer support. A "Ronald McDonald" approach to housing of family would also be helpful and to some degree is already on going but needs support."

On the average, PEIA is paying $818 more per day for out-of-state NICU care than WV Medicaid is paying, and $1,102.97 more per day than for PEIA covered in-state care.

PEIA Average Daily Reimbursement for NICU – 2004-2006

In-State	$194.99
Out-of-State	$1,297.96

Medicaid Average Daily Reimbursement for NICU – 2004-2006

In-State	$521.69
Out-of-State	$479.36

From 2004 through 2006, WV Medicaid decreased its overall reimbursement per day by $84.14. Of this change in per-day reimbursement, in-state NICU reimbursement decreased by $86.66, and out–of-state NICU reimbursement increased by $2.55 per day. WV Medicaid, however, provides additional funds to hospitals providing NICU care and that amount is not reflected in the above stated per day reimbursements.

According to the claims data, (Please see Appendix A) it appears that a significant reduction in reimbursement by Medicaid may have occurred in 2006. WV Medicaid reimbursements decreased to 38.39 percent of charges that year. Further analysis of the data is needed to better understand what is happening.

Adjust CON Methodology to Reflect Need Based on West Virginia Low Birth-Weight Rates

In the 1970's the West Virginia Health Care Authority established a methodology to arrive at the number of NICU beds that would be approved by Certificate of Need (CON). That methodology was based on the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists suggested ratios for calculating the number of neonatal bassinets. The suggested ratios were based on 80 low birth-weight (LBW) births per 1,000 births. Low birth-weight is defined as under 2,500 Gms.

In West Virginia a ratio of 4 NICU beds to 1,000 births in the hospital service area was established as the methodology for approving a Certificate of Need.

Like several other states, West Virginia's LBW rates have increased in recent years. From 2001 through 2005 the West Virginia low birth-weight averaged 9.7 percent. For births to white first-time mothers the LBW was 9.5 percent, for African-American mothers, it was 14.2 percent, and for all other races it was 9.6 percent.

The WV CON methodology needs to be adjusted to reflect the increased need for NICU beds.

Other States' NICU and CON

The WV Perinatal Partnership is conducting a survey of the Certificate of Need offices in other states to determine how they regulate NICU beds, what methodology is used and whether they are aware of increased bed utilization in recent years. Twenty-three of the thirty-seven states that have a CON program have some regulation of NICUs.

Fifteen states responded to the survey to date, 9 of which do not regulate NICU beds and 6 that do regulate. Only 6 states had knowledge as to whether there has been a change in NICU bed utilization and all reported an increase. The states reporting increased utilization of NICU beds include Alaska, California, Georgia, Indiana, Michigan, and Ohio. States that regulate NICUs say there has been an increase in the number of NICU beds and several say they are adjusting CON methodology to meet the demand. (Please see the States NICU Survey Report – Attachment B)

Samples of States' Responses

Georgia

The State of Georgia is one example where the methodology utilized for NICU certificate of need purposes is a demand-based forecasting model. This forecasting has allowed Georgia to gradually increase NICU beds over the past six years to meet demand and still maintain a utilization rate of 81% or less. The increase in NICU beds has grown from 326 beds in 2000 to 394 beds in 2005, and the admissions rate has grown by 1,655, about a 32% increase.

Georgia Neonatal Intensive Care Unit Utilization

Year	NICU Programs	NICU Beds	NICU Admissions	NICU Days of Care	NICU Utilization
2000	22	326	5,253	95,877	80.4%
2001	21	355	6,987	100,530	77.6%
2002	21	380	6,176	94,182	67.9%
2003	21	394	6,565	99,992	69.5%
2004	21	391	6,500	109,543	76.5%
2005	21	394	6,908	115,879	80.6%

Source: Annual Hospital Questionnaire, Perinatal Addendum; Georgia Department of Community Health

Prepared by: Data Resources and Analysis Section, Division of Health Planning

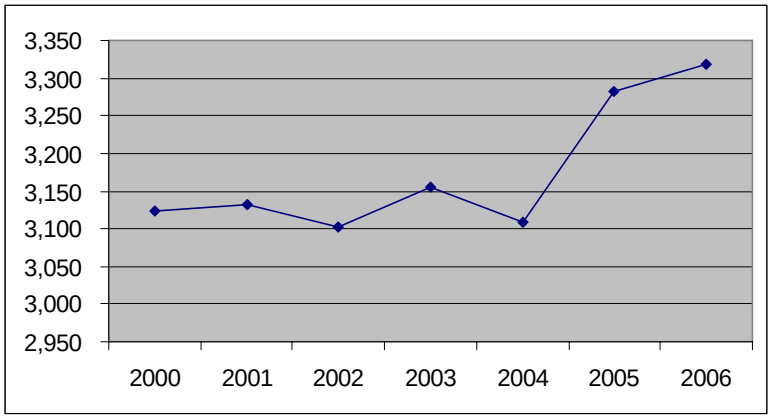
Indiana

The Indiana web site has hospital utilization reports, which break down the utilization into types of beds. The reports on line for 2003 to 2005 show an increase in NICU beds from 480 to 514, and discharges increased from 6,226 to 7,206.

California

Likewise, California has increased its number of licensed NICU beds by over 200 beds from 2000 through 2006. NICU patient days have increased by about 130,000, and the occupancy rate has continued a gradual increase of about 7-8 percent over that time period.

California Licensed NICU Bed Growth



COMMITTEE RECOMMENDATIONS

The West Virginia Perinatal Partnership's *Committee on Adequacy of NICU Beds*:

1. Recognizes that the cost to operate NICU beds and the physical capacity of some tertiary facilities to add more beds poses problems. At the same time, we recognize the importance of caring for our West Virginia newborns as close to home as possible and ask that the tertiary care facilities seriously study their capability to increase NICU beds.

2. To assist in accomplishing the recommendation of # 1 above, the West Virginia Health Care Authority should immediately evaluate and update the current methodology utilized in determining Certificate of Need approval of NICU beds

3. We also recognize the need to upgrade some community hospitals and equip them to handle newborns needing added care but not necessarily needing transfer to an NICU. Also, community hospitals can be upgraded to handle NICU "back referrals" for infants needing intermediate but not intensive care. Community hospitals that have the capacity or are willing to upgrade their capacity to accommodate infants that need added care as they transition into health are asked to begin addressing this issue. The Level IIA nursery beds, as an example, require oversight by a board-certified pediatrician, not a neonatologist. Level IIA beds provide enhanced newborn or special care rather than intensive care beds. Tertiary care hospital personnel should work closely with these community hospitals to provide medical consultation and educational outreach as they build their capacity.

4. To avoid unnecessary admissions to NICU, each birthing facility and all maternity providers should curtail elective delivery prior to 39 weeks gestation. They should implement the ACOG recommended guidelines for elective delivery (elective induction, repeat cesarian section, and elective primary cesarian section).

Appendix A

Medicaid –FY2004

Location	Total Days	NICU Days	Charges	Reimbursement	Reimbursement per day
In-State	28,170	5,250	19,648,487.97	15,643,157.25	555.31
Out-of-State	3,818	765	3,481,204.89	1,786,959.63	468.04
	31,988	6,015			1,023.35
Medicaid - FY2005					
In-State	27,351	6,036	19,471,337.00	14,800,142.90	541.12
Out-of-State	3,566	1,837	4,758,851.38	1,781,218.54	499.50
	30,917	7,873			1,040.62
Medicaid - FY2006					
In-State	16,254	5,236	19,839,382.20	7,617,448.17	468.65
Out-of-State	2,138	1,110	4,120,708.49	1,006,047.99	470.56
	18,392	6,346			939.21

PEIA - FY2004

Location	Total Days	NICU Days	Charges	Reimbursement	Reimbursement per day
In-State	3,500	923	4,526,571.56	615,306.03	175.80
Out-of-State	222	164	536,939.97	232,716.70	1,048.27
		1,087		848,022.73	1,224.08
PEIA - FY2005					
In-State	3,649	1,265	5,620,832.86	713,257.41	195.47
Out-of-State	251	66	532,118.66	303,930.45	1,210.88
		1,331		1,017,187.86	1,406.34
PEIA - FY2006					
In-State	4,013	1,262	6,515,124.77	857,635.79	213.71
Out-of-State	384	159	713,489.04	382,364.03	995.74
		1,421		1,239,999.82	1,209.45

West Virginia Health Care Authority Claims Data 2004-2006, Provided 09/06/07

Appendix B
State Survey NICU

State	Regulate NICU Beds	Methodology for Regulating NICU Beds	Recent Increase in NICU Bed Utilization	Source
Alabama	Yes			NCSL List of CON States
Alaska	Yes	None specifically for NICU. General ICU guidelines apply. See Methodology notes.	Yes - Providence Alaska Medical Center	David Pierce, DHSS
Arizona	No CON Program			NCSL List of CON States
Arkansas	Yes			
California	No CON Program	None.	Yes - See attached Utilization Analysis	Michael Rodrian, Office of State Health Planning
Colorado	No CON Program	None.	N/A	Michael Lastoczy, Department of Public Health and Environment
Connecticut	Yes		Must do a FOIA	NCSL List of CON States
Florida	Yes, & exempt under certain circumstances	See Methodology Notes		Karen Rivera, CON
Georgia	Yes	Demand-based forecasting model. See Methodology Notes	Yes - See attached Utilization Analysis	Matthew Jarrard, Div. of Health Planning,Dept. of Comm. Health
Hawaii	Yes			NCSL List of CON States
Idaho	No CON Program	None	N/A	Gary Guiles, DHW
Illinois	Yes			NCSL List of CON States
Indiana	No CON Program	None	Yes - See attached Utilization Analysis	ISDH Web Site
Kansas	No CON Program			NCSL List of CON States
Maine	Yes			NCSL List of CON States
Maryland	Yes			NCSL List of CON States
Massachusetts	Yes			NCSL List of CON States
Michigan	Yes	On web at www.michigan.gov/con	Slight increase in beds; utilization data on web	Larry Horvath, CON
Minnesota	No CON Program			NCSL List of CON States
Mississippi	Yes			NCSL List of CON States
Missouri	Yes, ONLY for new hospitals		?	Donna Schuessler, CON

Appendix B
State Survey NICU

State	Regulate NICU Beds	Methodology for Regulating NICU Beds	Recent Increase in NICU Bed Utilization	Source
Montana	No	None		Pamela Sourbeer, Licensure, DPHHS
Nebraska	No	None		Claire Titus, Licensure, DHHS
Nevada				
New Hampshire	No	None	N/A	Lauren.B.LeBrun, DHHS
New Jersey	Yes			NCSL List of CON States
New Mexico	No CON Program			NCSL List of CON States
New York	Yes			NCSL List of CON States
North Carolina	No	No methodology	Do not know	Lee Hoffman
North Dakota	No CON Program			
Ohio	Yes	Based on hospital census	Yes, utilization has increased, and is reported to be related to increased in vitro fertilization and early induced labor	Alice Dottei and Wanda Iacovetta, DOH
Oregon	No	None	?	Jana Fussell, CON
Rhode Island	yes			NCSL List of CON States
South Carolina				
South Dakota	No CON Program			NCSL List of CON States
Tennessee	Yes			NCSL List of CON States
Texas	No CON Program			NCSL List of CON States
Utah	No CON Program			NCSL List of CON States
Vermont	Yes	No specific guidelines; requires justification	N/A	Jennifer Garson, CON
Virginia	Yes			NCSL List of CON States
Washington	Yes			NCSL List of CON States
Wisconsin	Yes			NCSL List of CON States

West Virginia Perinatal Partnership - 2007
Final Report and Recommendations

Committee on Shortage of Obstetrical/Maternity Care Providers

Contributors:
Sarita Bennett, D.O. – Family Practice physician offering maternity care, in Marlinton, WV
Jeannie Clark, RN, WVDHHR, Women, Children's and Family Health
Martha Endres, Division of Recruitment, Bureau for Public Health, WVDHHR
Calvin Kent, PhD, Director, Center for Business and Economic Research, Marshall University
Juliana van Olphen Fehr, CNM, PhD, FACNM, Director, Nurse-Midwifery Program, Shenandoah University, Winchester, Virginia
Sam Roberts, M.D. – Family Practice physician offering maternity care, in Elkins, WV
Kent Sowards, MA, Center for Business and Economic Research, Marshall University
Nancy J. Tolliver, RN, MSIR, Director, WV Perinatal Partnership
Alicia Tyler, Health Sciences Program Coordinator, WV Higher Education Policy Commission

Map Designer:
Jennings Starcher, WV Health Care Authority

Staff:
Angelita Nixon, CNM, Chair, WV Chapter, American College of Nurse-Midwives

DESCRIPTION OF THE PROBLEM

Close to 86 percent of West Virginia women have adequate and timely prenatal care. However, a lack of access to maternity care services was identified as a major barrier for many women in rural areas of the state. Both the *Key Informant Survey* of 2006 and the data analysis reports included in the *Blueprint to Improve WV Perinatal Health* identified many of the issues that contribute to poor access.

1. **Decline in hospital and birthing facilities**: Since the 1970's, of the 64 licensed birthing facilities in the state, thirty-three have closed. Additional services closed within the study time period, leaving just 31 birthing facilities as of 2006.

2. **The location of birthing attendants**: Twenty-seven counties were identified as having no birthing attendants in 2006.

3. **The change in type of maternity care providers**: CNM providers increased dramatically while family practice physicians attending deliveries decreased by about 50 percent between 1991 and 2006.

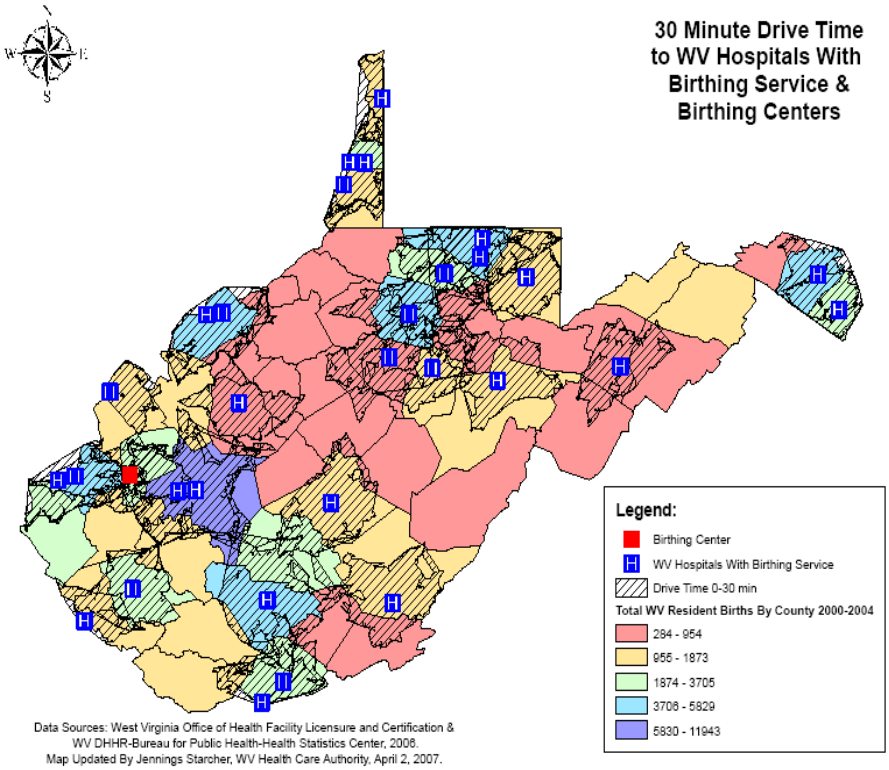
Birth Attendants in West Virginia (Number does not include those in training)			
	1991	**1998**	**2006**
OB-Gyns	115	133	145
Family Practice	40	46	19
CNMs	8		41

4. The **cost of medical liability** was identified as a major barrier to the practice of attending births. Many WV physicians and CNMs are employed with facilities and organizations where medical liability cost can be covered by the state or by the Federal Tort Claims Act coverage.

Maternity Care Shortage Areas

To address the lack of access to maternity care, the WV Perinatal Partnership - 2007 set the goal to identify and address maternity care provider shortage areas in the State and implement plans to reduce the shortages. During 2007 we have further defined the problem by plotting the location of prenatal providers, the 30-minute drive time to hospital birthing facilities, and the home county with the number of women delivering babies. ***Map 1*** demonstrates the areas within a 30-minute drive time to a WV birthing facility. A thirty-minute drive time or less is considered standard for best outcomes and anything less is generally considered a medically underserved area. The color chart reflects the number of births from each county for the five years, 2000-2004. As one would expect, the counties with the fewest births do not fall within the 30-minute drive time to a WV birthing facility. Counties on the State borders are often served by out-of-state hospital birthing facilities. The counties represented in pink, stretching from the northwest side of the State to the central eastern side are areas targeted as maternity care shortage areas.

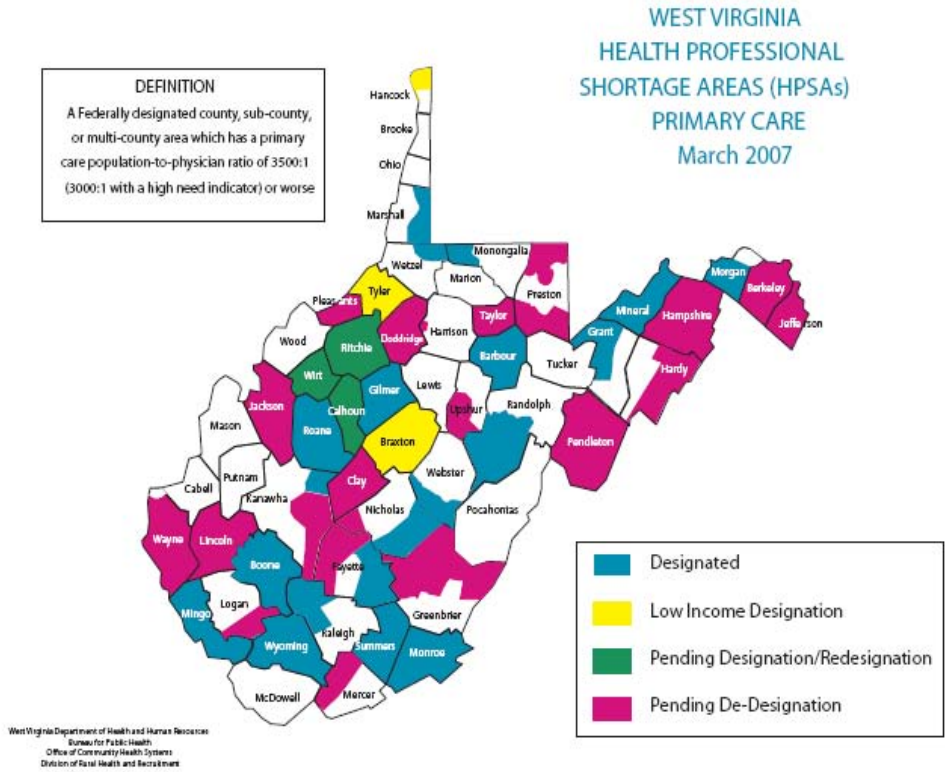
Map 1



Very conservatively speaking, from 2000 through 2004, over eleven thousand West Virginia women who gave birth were living 30 minutes or greater driving distance from a birthing facility. About 11 percent of women giving birth were living in areas that would be considered medically underserved.

There is not a separate federal designation for maternity care provider shortage areas, as these professionals are included with other general practice providers, pediatricians, family practice physicians, and internists. Many of the same counties that are 30 minutes or more drive time from a birthing facility also are designated as health professional shortage areas. ***Map 2*** shows the federally designated Health Professional Shortage Areas.

Map 2



When considering access to maternity care it is important to see whether or not there are adequate maternity care providers within reach of pregnant women. Maternity care providers include those who do not attend births but provide significant routine medical care and prenatal education for expectant parents. Maternity care providers can identify at risk and high risk conditions early in the pregnancy, obtain expert medical consultation from maternal-fetal medicine specialist at a tertiary care center, and, if needed, refer women needing specialized care.

Data provided by the Office of Maternal, Child, and Family Health shows 329 maternity providers: 257 physicians, 13 nurse practitioners, 16 physician assistants (PA-C), and 43 certified nurse midwives (CNM). The chart shows the number of each type of provider practicing in the 8 regions of the state.

Region	MD	DO	NP	PA-C	CNM	Total
1	23	3	2	1	7	36
2	35	2	3	1	4	45
3	45	3	2	3	9	62
4	16	4	4	3	7	34
5	10	1	2	1	1	15
6	12	2	0	1	0	15
7	71	15	1	6	12	105
8	26	1	0	0	9	36
Totals	238	31	14	16	49	348
Practicing in 2 Regions	11	1	1	0	6	19
Actual Total	**227**	**30**	**13**	**16**	**43**	**329**

Sixty percent of maternity care providers are located in and around the three tertiary care facilities located in Regions 2, 3, and 7. Recent data from MCFH indicates that more providers are going out to rural areas to take maternity care to women living there. Nineteen providers practice in 2 or more regions in this manner.

Double Jeopardy Counties

A double jeopardy county is one that is 30-minutes or more drive time from a birthing facility, and has zero or just one maternity care provider. These counties include Tyler, Pleasants, Gilmer, Calhoun, Monroe, Wirt, Tucker, Wetzel, Boone, Clay, and Ritchie. There are smaller areas of other counties that also meet this double jeopardy.

Model Rural Maternity Care Service

A second charge to this committee was to consider options for addressing the maternity care shortage areas, such as designing a model rural maternity care service that is economically viable, socially responsible, and utilizes existing maternity care services and providers where possible.

Economists from the Center for Business and Economic Research (CBER) at Marshall University prepared an economic feasibility study of three different models for rural maternity care services, in two regions. The three models are:

1. Creation of a "freestanding" rural health center facility, staffed by a midwife, nurse, medical assistant and clerical worker. This model is most suitable in areas with sufficient demand for a new maternity care service.
2. Use of a "visiting specialist" model based in an existing facility that is modified to accommodate a midwife once per week, and an OB/Gyn physician once per month. This model could incorporate staff already within the facility, or bring in support staff who would accompany the visiting midwife and physician.
3. Design of a "mobile clinic" whereby the clinicians and the facility are, in effect, portable. This approach has been highly successful because of its flexibility, and it brings needed maternity care services directly to the community – however remote – in a vehicle specifically designed for that purpose.

These models are detailed in a report prepared by the Center for Business and Economic Research of Marshall University, titled "An Examination of the Economic Feasibility of Alternative Models for Delivery of Prenatal Services in Rural West Virginia, October 2007." The complete report is available at our web site at www.wvhealthykids.org. The models use population density to estimate potential demand, and revenue projections to predict feasibility. The models could be further adapted to fit the unique circumstances and needs of the regions studied, and other regions as well. For example, if the service area of the mobile unit were expanded to cover four regions instead of two, it could become feasible in the second year. Each of the three models could work in rural areas of the state where adequate populations of pregnant women exist to support the model. However, neither the freestanding clinic nor the mobile clinic is economically feasible given the assumptions used to develop the models for the study period in the two regions studied.

The "visiting specialist" model appears to be the most feasible, becoming financially viable in the first year for the first region studied, and by the third year in the second region. For the double jeopardy counties, the visiting specialist model appears to be one that would make the most sense, economically.

Identify Ways to Increase and to Replenish the CNM Workforce:

The committee considered the goal to establish a program similar to the WV Local Availability Project that would provide financial support to community nurses desiring to become certified nurse-midwives.

Although there are currently no West Virginia nursing schools that offer nurse-midwifery education, there are training programs for CNMs in every neighboring state. This led us to explore the possibility that an in-state school of nursing would develop a nurse-midwifery training curriculum.

Another alternative would be to establish a partnership with an out-of-state distance education program. The challenges in creating a totally new nurse-midwifery training program reflect the broader issues related to the nationwide nursing shortage, and coinciding shortages in nursing faculty and clinical preceptors.

Identify Existing CNM Programs with Which to Collaborate

There are two CNM Programs in states bordering West Virginia which offer innovative midwifery education programs. Frontier School of Midwifery and Family Nursing in Hyden, Kentucky, offers a distance learning program that combines some minimal time at the school in Kentucky and distance learning and clinical experience at the student's home community.

The Midwifery Initiative is a collaborative agreement between Shenandoah University and other universities to offer nurse-midwifery education in collaboration with the graduate nursing programs. Students participating in the Midwifery Initiative attend their home university for general master's degree courses and attend Shenandoah University for their nurse-midwifery courses. Graduates receive a Master of Science in Nursing (MSN) degree from their home university with a Certificate of Completion in Nurse-Midwifery from Shenandoah University and are eligible to take the national certification exam from the American College of Nurse-Midwives Credentialing Commission to become certified nurse-midwives (CNMs).

Examples of schools that currently incorporate Shenandoah University's Midwifery Initiative within their master's in nursing science (MSN) programs, and thus may avoid creating their own nurse-midwifery curriculum are Old Dominion University, Radford University, and Johns Hopkins University.

Existing Financial Support

There are at least three financial support programs available to nurses for advanced practice graduate study in nurse-midwifery, and who will practice in West Virginia. These programs are administered primarily through the West Virginia Higher Education Policy Commission, Health Sciences Program.

West Virginia has pioneered new approaches to educating medical and other health professions students in rural settings through the West Virginia Rural Health Education Partnership (WVRHEP). The WVRHEP was designed to increase the recruitment and retention of health care providers in rural areas by requiring students in all health disciplines to complete rural rotations. The program has been recognized nationally for its achievements. Since 2001, newly-formed Area Health Education Centers (AHECs) have increased opportunities for health professions education.

To support these efforts, state and federal financial incentives are coordinated through the WVRHEP Recruitment and Retention Committee and the Bureau for Public Health. Eligibility requirements, benefits, obligations, and application procedures for these programs vary, but a common requirement is the practice location must be in an underserved area. Individuals may receive incentives from several state-funded programs and can serve their practice obligations concurrently.

Statewide data is analyzed by the Division of Rural Health & Recruitment to determine areas that are eligible for Health Professional Shortage Area (HPSA) designation. This information is submitted to the Shortage Designation Branch of the Health Resources and Services Administration. A HPSA designation is a federal designation that identifies areas with a shortage of primary care physicians -- generally, areas

with a ratio of less than one primary care physician per 3,500 population. In West Virginia, 40 of the 55 counties are designated as partial or whole-county HPSAs.

The State Loan Repayment Program requires participants to work in an approved site in a HPSA. State-funded programs, i.e., the Health Sciences Scholarship Program, the Recruitment and Retention Community Project, and the Medical Student Loan Program, consider additional underserved areas based on program criteria.

The **State Loan Repayment Program** offers repayment of educational loans to primary care physicians, nurse practitioners, physician assistants, and nurse midwives, in return for an obligation to practice in a rural, underserved area of West Virginia. The site must be public or nonprofit and located in a Health Professional Shortage Area (HPSA). The program is funded by a federal grant (50 percent) and state appropriation (50 percent).

Eligibility**:** Primary care physicians in family practice, general pediatrics, obstetrics/gynecology, general internal medicine, general psychiatry; and nurse practitioners, physician assistants, and certified nurse-midwives. General practice dentists are also eligible to apply to this program. Applicants must be a U.S. citizen with a valid, unrestricted West Virginia license and/or certificate, and must have satisfied any other state or federal service obligation prior to beginning the loan repayment service obligation.

Benefits**:** $40,000 for a two-year commitment. Contracts may be amended for two additional years at a rate of $25,000 per year. This program will pay for qualified government and commercial educational loans for medical or other health professions education and reasonable living expenses.

Awards are made by the Bureau for Public Health, based on a ranking of community need and availability of health professionals.

Obligation**:** Recipients of loan repayment must sign a contract to practice full-time for a minimum of two years at an approved site in a HPSA. Penalties apply for breach of contract.

The **Recruitment and Retention Community Project** provides matching funds to communities for recruitment and retention of primary care providers. The program is funded by state appropriation.

Eligibility**:** Sponsors must be located in a medically underserved community, such as a Health Professional Shortage Area (HPSA), Medically Underserved Area (MUA), or other areas approved by the Bureau for Public Health. Sponsors must provide a full continuum of care, including arrangements for after hours and acute care, and must have an open policy to provide health services without regard to a person's ability to pay.

Eligible providers include primary care physicians in general family practice, general pediatrics, general internal medicine, psychiatry, and obstetrics/gynecology, or emergency medicine physicians and physician assistants trained in emergency medicine (only at approved facilities), primary care nurse practitioners, physician assistants, nurse-midwives, general practice dentists, or individuals in training programs in these fields. A candidate must be a U.S. citizen and must agree to meet all applicable educational, licensure, and certification requirements to practice primary care in West Virginia.

Benefits**:** A grant of up to $10,000 to the sponsor, who in return is required to provide 50 percent matching funds. Funds may be used to provide loan repayment, residency stipends, loan forgiveness, locum tenens support, or other incentives approved by the Bureau for Public Health.

Applications are accepted throughout the year, and awards are made by the Bureau for Public Health. Preference is given to sponsors supporting candidates who have received their training in West Virginia; have ties to the community; have a commitment to serve in an underserved area; or have experience in community service in an underserved area.

Obligation**:** Health care providers must agree to provide primary care clinical medicine full-time in an underserved area with or for the sponsor for one year for every year of funding. There is a maximum of four years of funding.

The **National Health Service Corps SEARCH Program** provides an educational stipend to students and residents who wish to enhance or extend their training at a West Virginia Rural Health Education Partnerships (WVRHEP) site in rural West Virginia. The program is funded by a federal grant to the state.
Eligibility**:** Students/Residents must be enrolled in one of the following programs: medicine, dentistry, dental hygiene, nurse practitioner, nurse-midwifery, physician assistant or clinical psychology and have completed a minimum of one year of their professional education. These students must be interested in pursuing primary care in family or general medicine/psychology/dentistry, obstetrics and gynecology, internal medicine, or pediatrics.

Preference will be given to students/residents demonstrating one or more of the following attributes: 1) presently a National Health Service Corps scholarship recipient, 2) has strong rural ties (preferably in West Virginia) as evidenced by the number of years of residence or presence of family ties in a rural locale and/or history of work or community service within a rural locale, 3) has demonstrated an interest in rural health, and/or 4) has arranged a rural rotation at a WVRHEP site beyond the minimum of 20 days required.

Benefits**:** $75 daily stipend for a minimum rotation of 20 days, up to a maximum of 100 days. Students/Residents must be recommended by one of the WVRHEP consortia. A statewide advisory panel makes final recommendations for the SEARCH Program.

Work Collaboratively with the West Virginia Hospital Association to Identify Credentialing Best Practices and Admitting Privileges for CNMs

At least 18 West Virginia hospitals and one freestanding birth center currently have a mechanism for credentialing CNMs or are developing one, although not all of these facilities are offering maternity care at this time.

Cabell-Huntington Hospital – Huntington
Charleston Area Medical Center – Charleston
City Hospital – Martinsburg
Davis Memorial Hospital – Elkins
Grant Memorial Hospital – Petersburg
FamilyCare Birth Center – Hurricane
Jackson General Hospital – Ripley
Jefferson Memorial Hospital – Ranson
Monongalia General Hospital – Morgantown
Pleasant Valley Hospital – Point Pleasant
Preston Memorial Hospital – Kingwood
Putnam General Hospital (now CAMC) – Hurricane
Raleigh General Hospital – Beckley
Reynolds Memorial Hospital – Glendale
Roane General Hospital – Spencer
Ruby Memorial – Morgantown
St. Joseph's Hospital – Buckhannon
St. Mary's Hospital – Huntington
Stonewall Jackson Memorial Hospital – Weston

Medical staff bylaws governing CNMs will define the category of medical staff membership (active, courtesy, temporary), and outline obligations and qualifications of medical staff. A sample application packet, instructions to apply for medical staff privileges, as well as a checklist for review of medical staff bylaws will be posted to the website and made available to any facility that would like to explore adding nurse-midwives to medical staff. In addition, the committee can assist hospitals developing a set of

documentation that is tailored to the needs of the facility, and provide consultation or an in-service education program if desired.

Delineation of Privileges for Certified Nurse-Midwives normally will include eligibility requirements; competency; practice in accordance with Standards for the Practice of Midwifery; appropriate consultation, collaboration, referral procedures; and standard clinical privileges. Standard privileges for CNMs may include the following:

- completion of admission and discharge history and physical exam
- ordering lab, x-ray, ultrasound, and other diagnostic tests
- performing PPM
- routine management of normal labor and birth
- routine management of normal postpartum period
- collaborative management of other patients as described in clinical practice guidelines
- evaluation of antenatal testing including NSTs and CSTs
- administration of local and pudendal anesthesia and ordering of epidural anesthesia
- prescribing of medications (consistent with the state practice act and clinical practice guidelines)

Expanded practice privileges for CNMs may include the following:

- surgical first assist
- vacuum-assisted vaginal delivery
- repair of 3rd degree laceration
- repair of 4th degree laceration
- manual removal of placenta
- circumcision
- colposcopy
- external breech version
- ultrasonography

RECOMMENDATIONS

1. Community Health Centers that are federally-qualified (FQHCs) and have professional medical liability coverage through the Federal Court Tort Claims act, and West Virginia's medical school affiliated practices should give serious consideration to expanding their services by offering a Visiting Specialist Model maternity service in the double jeopardy counties. If West Virginia obstetrical providers were to fill these gaps of maternity care by taking services closer to the woman's home, WV could potentially bring 90 percent of expectant women into early and adequate maternity care. Along with the early and adequate care would come lower infant mortality, fewer low birth-weight births, maternal smoking cessation, early identification and treatment of maternal and fetal problems, and greater support for breastfeeding.
2. The West Virginia Hospital Association should post and promote the *Best Practices and Admitting Privileges for Certified Nurse Midwives* in order to encourage the complementary practice of midwifery along with obstetrics and make services more available for WV women.
3. West Virginia schools of nursing should study options to collaborate with existing schools of midwifery so that West Virginia nurses can more easily attain degrees and certifications in nurse midwifery. This is extremely important. The State must be proactive so as not to get caught with a reduction in CNMs due to retirement. CNMs have become a large factor is the delivery of maternity care in WV with 43 CNMs now practicing in the State. The state currently has no planned approach to replenish West Virginia's retiring CNM workforce.

4. The Bureau for Public Health, the Higher Education Policy Commission, the West Virginia Center for Nursing, and others with a vested interest should plan and execute an approach to notify nurses of funds available to them for education in nurse midwifery.

West Virginia Perinatal Partnership - 2007
Final Report and Recommendations

Committee on Oral Health and Pregnancy

Committee Chair: *Gina Sharps, R.D.H., B.S., WVU School of Dentistry, Morgantown*
Committee Members:
Allan Chamberlain, MD, OB/Gyn, Huntington
Jeannie Clark, RN, Right From the Start Director, Charleston
Paula Darby, RN, Right From the Start, Region VII
Ellen Kirby, RN, Right From the Start, Region VIII
Barbara Lott, RN, Right From the Start, Region V
Richard Meckstroth, DDS, WVU School of Dentistry, Morgantown
Dee Messinger, RN, Right From the Start, Region II
Michelle Truax, RN Right From the Start, Region VI
Barbara Vessely, Clerk, RFTS Region II
Susan Walter, Oral Health Community Liaison, Martinsburg
Andrea Kelly, DDS, Dental Director, Valley Health, Westmoreland
Lisa Dunn, DDS, Director of Dental Health Programs, WVU Martinsburg
Amy Leedy, Oral Health Coordinator, Valley Health, Huntington
Elliot R. Shulman, DDS, WVU School of Dentistry, Morgantown
Renate Pore, WV Healthy Kids Coalition
Committee Staff: *Bobbi Jo Muto, R.D.H., B.S., Valley Health Systems*
Health Care Authority Researcher: *Mary Bee Antholz*

This report was reviewed and approved by:
Louise T. Veselicky, DDS, MDS, Interim Dean, WVU School of Dentistry
Richard J. Crout, DMD, PhD, Associate Dean for Research, Professor of Periodontics, WVU School of Dentistry
David H. Walker, DDS, WV State Dental Director, WVDHHR

DESCRIPTION OF THE PROBLEM

*Pregnancy is a "teachable moment" when women are motivated to change behaviors that have been associated with poor pregnancy outcomes. The prenatal care team can be very influential in encouraging women to maintain a high level of oral hygiene, to visit an oral health professional, and to promote completion of all needed treatment during the pregnancy. Oral health care services should be integrated with prenatal services for all pregnant women.**

**Oral Health Care during Pregnancy and Early Childhood Practice*

According to the Centers for Disease Control, the second leading cause of infant mortality is the combination of premature birth and low birth-weight. These two factors are also the most significant predictors of infant health and survival. Over the past twenty five years there has been a growing body of research supporting an association between poor oral health/chronic oral infection to the increased incidence of preterm labor and low birth-weight babies. Dental maladies ranging from bleeding gums to a dental-related abscess have special significance during pregnancy. Other factors contributing to poor oral health status during pregnancy include: changes in diet and oral hygiene directly resulting in higher decay (cavity) rates, tooth erosion from esophageal reflux and vomiting and pregnancy gingivitis. According to the National Institute of Health, "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."

For many women in West Virginia, pregnancy is the only time that they will have medical and dental coverage. West Virginia Medicaid currently covers women up to age twenty one (21) for full dental benefits. This period of time is also when women are more receptive to modifying or changing behaviors that result in better health outcomes for themselves and their unborn child. This window of opportunity affords healthcare professionals with a unique vantage point in providing education and treatment to improve the oral health status for the woman and ultimately her child.

One critical issue identified by the committee was the need to educate health care professionals in recognizing the direct correlation between oral health and overall health. Current research shows sufficient evidence to recommend appropriate oral health care for pregnant women. Recent studies have shown that women with periodontal disease are at 3-5 times greater risk of a preterm birth than those who are periodontally healthy. It's suspected that bacteria and toxins from periodontal disease enter the bloodstream and cause an inflammation that triggers premature labor. It has been shown that this situation can be aggravated if a pregnant woman's periodontal disease becomes worse during pregnancy. While most pregnant women know that smoking and drinking alcohol can be harmful to their babies, they may not know that taking care of their oral health is very important as well. Periodontal disease/dental caries can be prevented and treated. A limited number of healthcare professionals recognize periodontal disease and dental caries as infectious diseases and even a smaller number are aware of treatment options and available resources.

Availability of Oral Health Services and Providers for Medicaid-covered Pregnant Women

Over half of all pregnant women in West Virginia receive benefits through Medicaid. While the data on the availability of oral health care for these women is inadequate, what we do know suggests that we have a serious problem.

We can compare the ratio of dentists to pregnant Medicaid women, but we do not know how many dentists will see Medicaid patients Some dentists will see Medicaid patients on a limited basis; others will not accept new Medicaid patients but are willing to see existing patients of record. Availability of dental services for Medicaid-covered women fluctuates from month to month and varies from county to county. Data that is available is often out-of-date before it is published. We do know, however, that West Virginia does not meet the ratio of dentist-to-population as recommended by the Association of State and Territorial Dental Directors (ASTDD). Below is a chart showing the recommendation and the WV ratio.

National Average Dentist-to-Population Ratio	63.6/100,000
WV Average Dentist-to-Population Ratio	47.2/100,000

In January 2007, a study was conducted by the WVDHHR, Office of Women, Children and Family Health, called *Attitudes of WV Dentists toward Publicly-Sponsored Patients and Children with Special Health Care Needs.* The study was a mailed survey to 823 dentists in the State. Thirty-eight percent of the dentists responded to the survey. Of those responding, 35 percent refused to have their names printed in a referral directory of dentists serving Medicaid-covered clients. A similar study completed in 2002 to determine dental provider attitudes toward serving Medicaid-covered or CHIP-covered clients found that just 20 percent of the respondents agreed to be listed in the WVDHHR resource directory and 80 percent declined to be listed.

Further compounding the problem of oral health services for pregnant women is that WV Medicaid fees for dental services are at or below the 10th percentile in the nation according to a report of the American Dental Association.

Data from the WV Health Care Authority shows that less than 25 percent of Medicaid-covered pregnant women, under 21 years of age, received oral health services during the three years reviewed.

Percent of Medicaid-covered Pregnant Women Receiving Oral Health Services	
Year	**%Examined**
2002	28.6%
2003	24.5%
2004	21.1%

Right From the Start (RFTS) is working to improve use of oral health services among pregnant women

West Virginia RFTS, a program of the Office of Women, Children's and Family Health of West Virginia Department of Health and Human Resources, is a case management program for Medicaid-covered high-risk pregnant women and infants up to one year of age. Data on use of services is consistently collected by region and county and would allow for study on the barriers to accessing oral health services. Better understanding of the barriers is necessary in order to develop strategies to address the use of services.

West Virginia RFTS works in eight geographic regions across the state. Utilization of dental services varies from region to region with the lowest rate at 14.9 percent and the highest rate of 23.7 percent. Service utilization will be monitored annually through WV Health Care Authority data reports such as the following baseline data chart:

WV Medicaid Aged Under 21 Pregnant Women Delivering During the Year and Receiving an Oral Health Service WV Health Care Authority Data Report			
Region Of Residence	**Year**	**Percent of Women Receiving Oral Health Services**	**Number of Women Receiving an Oral Health Service**
01	2003	18.6%	243
	2004	21.5%	161
	2005	21.6%	109
02	2003	16.9%	277
	2004	19.9%	246
	2005	19.4%	230
03	2003	30.2%	237
	2004	17.0%	73
	2005	19.7%	112
04	2003	27.5%	182
	2004	22.2%	114
	2005	17.9%	57
05	2003	17.8%	76
	2004	18.9%	70
	2005	21.3%	40
06	2003	16.3%	21
	2004	18.9%	42
	2005	18.3%	30
07	2003	25.0%	245
	2004	20.4%	113
	2005	20.1%	116
08	2003	11.2%	129
	2004	16.3%	144
	2005	18.5%	118

Working Together to Improve Oral Health of Pregnant Women

Working to improve the oral health status thus improving the overall health of Medicaid pregnant women in West Virginia is an ongoing process. The process requires a partnership of many agencies, community groups and health care professionals. The West Virginia initiatives include the following activities.

- Right From the Start will educate the program's health care professionals on the importance of good oral health and its potential impact on positive birth outcomes.
- The WV Birth Score tool, maintained by WVU School of Medicine, was revised this year to include questions pertaining to oral health. This data will be collected and reported, measuring changes in the use of oral health services over the next several years.
- To educate new mothers on the value of oral health care, hospitals will provide each new mother with a newly-developed perinatal oral health brochure.
- A proposed initiative will educate and monitor the RFTS population accessing oral health care, and will identify barriers to care.
- To educate legislators on potential policy initiatives that can improve oral health of our citizens, our Partners are making presentations to the special WV legislative committee on oral health during the 2007 interim sessions.

RECOMMENDATIONS:

- Encourage and support a broad partnership of health professionals to work together to assure that all health care providers are aware of the association between oral health and overall health, therefore recognizing the correlation between infectious oral disease and unfavorable birth outcomes.
- Encourage and support programs working with families to promote oral care before, during, and after pregnancy as a key strategy to improve maternal health, fetal development, infant health, and birth outcomes.
- The Bureau for Medical Services should review the reimbursement rates for Medicaid-covered dental services and evaluate the positive impact of preventable dental services for all women of childbearing age. Dental care for all pregnant women may result in an overall cost savings by reducing the number of PT/LBW incidences.

Attachment A
WV Medicaid - Pregnant Delivering Women - Age Under 21
With Dental Exam Code for Year 2004

WVHCA Claims Data and Hospital Discharge Data

County of Residence	Percent Examined	Number of Practicing Dentists
Barbour	25.5%	4
Berkeley	17.1%	46
Boone	24.6%	7
Braxton	28.0%	4
Brooke	16.7%	7
Cabell	23.1%	54
Calhoun	24.0%	2
Clay	27.7%	4
Doddridge	23.8%	0
Fayette	24.6%	14
Gilmer	25.0%	1
Grant	17.6%	5
Greenbrier	25.1%	20
Hampshire	29.5%	7
Hancock	25.9%	17
Hardy	20.5%	6
Harrison	23.4%	46
Jackson	29.1%	11
Jefferson	19.1%	13
Kanawha	26.0%	141
Lewis	24.3%	4
Lincoln	20.0%	4
Logan	24.9%	7
Marion	17.9%	25
Marshall	29.3%	12
Mason	29.4%	6
McDowell	23.7%	6
Mercer	26.3%	27
Mineral	23.8%	9
Mingo	27.9%	4
Monongalia	23.2%	103
Monroe	23.5%	1
Morgan	24.1%	3
Nicholas	25.6%	8
Ohio	35.7%	37
Pendleton	25.0%	6
Pleasants	0.0%	3
Pocahontas	28.1%	1
Preston	24.2%	9
Putnam	23.2%	24
Raleigh	23.3%	42

County of Residence	Percent Examined	Number of Practicing Dentists
Randolph	28.3%	9
Ritchie	29.1%	2
Roane	22.6%	3
Summers	22.0%	2
Taylor	27.6%	5
Tucker	25.0%	2
Tyler	28.6%	2
Upshur	21.0%	7
Wayne	23.6%	9
Webster	20.0%	1
Wetzel	23.3%	8
Wirt	20.0%	1
Wood	18.4%	40
Wyoming	29.5%	5
Out-of-State (Maryland)	18.5%	
Total	24.4%	

West Virginia Perinatal Partnership - 2007
Final Report and Recommendations

Committee on Economic Impact of Poor Outcomes
First-Time Mothers Study

Special recognition is given to the following individual for extensive data design and report development: *Tom Light, BA, WV Department of Health and Human Resources, Health Statistics*

Contributors:
Kat Ambler, CNM, WomenCare, Hurricane
Luis Bracero, MD, CAMC Women and Children's Hospital, Charleston
Stephen Bush, MD, CAMC Women and Children's Hospital, Charleston
David Chaffin, MD, Marshall University, Huntington
Ann Dacey, RN, WVU Center of Excellence in Women's Health, School of Medicine, Morgantown
Janet Graeber, MD, WVU School of Medicine, Morgantown
Stefan Maxwell, MD, CAMC - Women and Children's Hospital, Charleston
Robert Nerhood, MD, Marshall University, Huntington
Sandy Young, RN, MS, Thomas Hospital, Charleston
Advisors:
John Eckhart, Health Care Data Analyst; WV Health Care Authority
Robin Ryder Eckhart, Health Care Data Analyst; WV Health Care Authority
Linda Sovine, MPH, FACHE, Director of Data Analysis, WV Health Care Authority
Jennings Starcher, Health Care Data Analyst; WV Health Care Authority
Staff: *Nancy Tolliver, RN, MSIR*

DESCRIPTION OF PROBLEM

Medical research has long studied the effects of elective labor induction and of cesarean delivery on mother and baby. West Virginia, like most of the US and Canada, has seen a rise in the rate of elective primary cesarean delivery and in elective labor induction, in part due to the widespread perception that these procedures are of little or no risk to healthy women.

Recent studies reaffirm earlier World Health Organization recommendations about optimal cesarean section rates. The best outcomes for mothers and babies appear to occur with cesarean section rates of 5 percent to 10 percent. Rates above 15 percent seem to do more harm than good. (Althabe F, Belizan JF. Caesarean section: The paradox. The Lancet 2006;368:1472)

In 2004, 29.1 percent of all births were cesarean sections, a 40 percent increase since 1996, the Centers for Disease Control and Prevention's National Center for Health Statistics reported. That year West Virginia ranked as the third highest state for cesarean sections with a rate of 33 percent, according to the Centers for Disease Control.

A recent study focusing on elective primary cesarean delivery compared to planned vaginal delivery was published in February of 2007 by the Canadian Medical Association Journal. The fourteen-year study found that the planned cesarean group had increased postpartum risks of cardiac arrest, wound hematoma, hysterectomy, major puerperal infection, anesthetic complications, venous thromboembolism, and hemorrhage requiring hysterectomy, and stayed in the hospital longer that those in the planned vaginal delivery group, but had a lower risk of hemorrhage requiring blood transfusion.

> ***Although the absolute difference is small, the risks of severe maternal morbidity associated with planned cesarean delivery are higher than those associated with planned vaginal delivery. These risks should be considered by women contemplating an elective cesarean delivery and by their physicians.*** CMAJ. February 13, 2007. 176(4)

Many West Virginia perinatal providers have voiced concern about two elective medical procedures and their potential impact on poor medical outcomes. The two elective procedures are elective labor induction, without a preexisting medical risk factor, and an elective cesarean section. During the *WV Key Informant Survey* of 2006 many perinatal providers identified elective labor induction prior to 39 weeks gestation as a contributing factor to low birth-weight infants. Some also indicated that, especially for a first time mother, labor induction may lead more often to a cesarean section and sometimes to an infant needing NICU services.

Studies of West Virginia birth data show us that West Virginia is better than the national rates when it comes to

- *Early prenatal care and*
- *Adequate or better than adequate care*

WV birth outcomes data shows we have been either stagnant or worse than national rates for

- *Smoking during pregnancy*
- *Infant mortality*
- *Low birth-weight*
- *C-section rates*
- *Labor induction rates*

With these concerns in mind, the Perinatal Partnership's ***Committee to Identify Costly Medical Procedures Associated with Poor Birth Outcomes*** decided to undertake a study of first-time mother data, knowing that the method of delivery with the first birth is a predictor of subsequent birth outcomes.

The data for this study were provided by the WV DHHR, Division of Health Statistics, from the WV birth certificate records. The data covers a five-year time period from 2001 through 2005. The findings provide a serious basis to support recommendation of other Perinatal Partnership committees to work to increase the adherence to ACOG and AAP Guidelines as they relate to labor induction and cesarean section. These guidelines provide that no c-section should occur without medical reason, and that no labor induction should occur prior to the 39th week of gestation without medical indication.

Findings – 2001-2005 WV Residents

1. For all mothers in West Virginia the rate of labor induction has continued to rise, from 29.5 percent in 2000 to 33.9 percent in 2005.
2. For all WV resident mothers the rate of cesarean section has continued to rise, from 26.7 percent in 2000 to 34 percent in 2005. According to the Centers for Disease Control, in 2004, West Virginia had the third highest rate of cesarean sections in the country.

Labor-Induced Births for First-Time Mothers With or Without Medical Risk Factors (MRF) West Virginia Residents, 2001-2005					
	Number of 1st Time Mothers	Labor Induction With MRF	Percent	Labor Induction Without MRF	Percent
WV Total	43,326	8,781	20.3%	7,482	17.3%

3. The cesarean section rate for first-time West Virginia resident mothers is 31.9 percent of all births for 2001-2005. This rate steadily increased from 27.4 percent in 2001 to 34.6 percent in 2005.
4. For first-time mothers, the rate of labor induction is thirty-seven percent.
5. What appears to be of most concern is that more labor-induced first-time mothers (54 percent) have no noted preexisting medical risk factor (without MRF).
6. One might assume that the labor inductions and subsequent cesarean sections could all be explained by some preexisting medical risk factor; however, almost as many first-time mothers with no pre-existing medical risk factor (27.7 percent) had a labor that ended in cesarean section as women with a MRF (33 percent).
7. The c-section rate for all first-time mothers in the study who were not induced was 32.6 percent.

Cesarean Section Births With or Without Medical Risk Factors First-Time Mothers - West Virginia Residents, 2001-2005						
	Labor Induced Without MRF	Number of C-Section Deliveries	Percent	Labor Induced With MRF	Number of C-Section Deliveries	Percent
WV Total	8,781	2,431	27.7%	7,482	2,485	33.2%

8. A very interesting concern voiced especially by pediatricians and by neonatal specialists attending in the NICU's is that some mothers are having elective induction of labor prior to

the ACOG and AAP recommendation of at least 39 weeks gestation. A review of the gestational age of infants born of induced labors found this to be a valid concern.

Labor-Induced Births by Weeks of Gestation With or Without Medical Risk Factor First Time Mothers – West Virginia Residents, 2001-2005					
Weeks of Gestation	**Labor Induced Births**	**Labor Induced Without MRF**	**Percent**	**Labor Induced With MRF**	**Percent**
Less than 32	72	21	29.2%	51	70.8%
32-36	1,146	336	29.3%	810	70.7%
37	1,391	508	36.5%	883	63.5%
38	3,131	1,551	49.5%	1,580	50.5%
39	4,411	2,552	57.9%	1,859	42.1%
40	4,322	2,800	64.8%	1,522	35.2%
41	1,481	941	63.5%	540	36.5%
42+	106	67	63.2%	39	36.8%
Unknown	8	5	62.5%	3	37.5%
WV Total	**16,068**	**8,781**	**55.0%**	**7,287**	**45.0%**

Labor Induced at 37 weeks of Gestation or Earlier:
Of labors induced at 37 weeks of gestation or earlier, 67 percent had at least one medical risk factor identified and 33 percent had no medical risk factor. When reviewing the numbers of those with no medical risk factor identified, one would question whether perinatal providers and hospital medical records personnel who complete the WV Birth Certificate are completing it accurately.

Labor Induced at 38 and 39 Weeks of Gestation:
Of labors induced at 38 and 39 weeks of gestation, the reverse is true, with 54 percent of the inductions occurring without medical risk factor and 46 percent occurring with at least one medical risk factor identified.

Overall, of WV resident first-time mothers, 55 percent of those having an induced labor are not identified as have a medical risk factor.

Twenty-two percent of neonates of first-time mothers whose labor was induced were transferred to an NICU.

9. Rate of Complications of Labor and Delivery: Next, the number and type of complications experienced by mother or infant of first-time mothers whose labor was induced was identified. Almost seven percent (6.8 percent) of first-time mothers with labor induction experienced two or more complications of labor and delivery.

10. The rate of complications of Labor and Delivery was slightly higher for mothers whose labors were induced (38.5 percent) than for mothers without labor induction (33.5 percent)

11. For first-time labor-induced mothers who suffered only one complication of labor and delivery, the complications and the percentage are reported in the following chart:

First-Time Mothers With One Complication of Labor and Delivery WV Residents, 2001-2005	
Complication	**Percent that were Labor Induced**
Febrile	39.40%
Meconium	33.30%
PRM	21.30%
Abruptio Placenta	18.20%
Placenta Previa	5.70%
Other Excessive Bleeding	44.30%
Seizures During Labor	25.00%
Precipitous Labor	16.80%
Prolonged Labor	48.60%
Dysfunctional Labor	51.40%
Breech/Malpresentation	7.40%
Cephalopelvic Disproportion	45.80%
Cord Prolapse	36.80%
Anesthetic Complications	30.00%
Fetal Distress	40.30%
Other/Unlisted	45.70%

12. Annually, the WV Office of Health Statistics reports the methods of delivery for all deliveries at each birthing facility in the State. One might expect the tertiary care facilities to have the highest rates of cesarean sections due to the fact that they tend to handle many at-risk pregnant women. However, 66 percent of the WV birthing hospitals, reporting at least one birth during 2005, had rates of cesarean sections of over 30 percent. Sixteen hospitals reported cesarean section rates of greater than 35 percent. And, of five birthing facilities with reported rates of over 40 percent, only one of these facilities is a tertiary care facility. (See Appendix A.)

COMMITTEE RECOMMENDATIONS

1. Provide regular and routine outreach training for all hospital medical records personnel and birthing attendants to assure appropriate transcribing to the West Virginia Birth Certificate.
2. Gain an understanding of the reasons for labor induction in the absence of a medical risk factor by gathering information from birthing attendants in West Virginia.
3. Promote educational opportunities for birthing attendants that will encourage adherence to ACOG and AAP Guidelines related to elective labor induction only after 39 weeks gestation, and for eliminating elective cesarean section.
4. Work with hospitals and insurance payers to set guidelines that promote adherence to ACOG and AAP guidelines.
5. Assist birthing attendants in educating women about the risk of early labor induction and of elective cesarean section.
6. Hospitals should always internally review for Quality Improvement any elective induction of labor that results in:
    a. A cesarean section
    b. A baby that gets admitted to a Neonatal Intensive Care Unit
    c. An induction that occurs prior to 39 weeks gestation
7. Hospitals should always internally review for Quality Improvement any elective cesarean section that results in a baby that gets admitted to a Neonatal Intensive Care Unit.

Appendix A
Births by Method of Delivery
Number and Percent by Facility of Occurrence
West Virginia, 2005

Hospital	Method of Delivery										
	Total	Vaginal		Vaginal after C-Section		Total C-Section		Primary C-Section		Repeat C-Section	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Bluefield Regional Medical Center	776	473	61.0	3	0.4	282	36.3	177	22.8	105	13.5
CAMC - Women & Children's	3,098	1,789	57.7	11	0.4	1,298	41.9	855	27.6	443	14.3
Cabell-Huntington Hospital	2,558	1,644	64.3	10	0.4	904	35.3	515	20.1	389	15.2
Camden-Clark Memorial Hospital	1,297	897	69.2	5	0.4	364	28.1	186	14.3	178	13.7
City Hospital	923	615	66.6	0	0.0	308	33.4	162	17.6	146	15.8
Davis Memorial Hospital	480	318	66.2	3	0.6	159	33.1	88	18.3	71	14.8
Fairmont General Hospital	391	250	63.9	0	0.0	141	36.1	84	21.5	57	14.6
Grant Memorial	263	164	62.4	0	0.0	99	37.6	64	24.3	35	13.3
Greenbrier Valley Hospital	557	416	74.7	21	3.8	117	21.0	73	13.1	44	7.9
Jackson General Hospital	86	58	67.4	0	0.0	28	32.6	23	26.7	5	5.8
Jefferson Memorial Hospital	229	174	76.0	4	1.7	51	22.3	22	9.6	29	12.7
Logan Regional Medical Center	346	194	56.1	1	0.3	144	41.6	85	24.6	59	17.1
Monongalia General Hospital	633	448	70.8	0	0.0	173	27.3	156	24.6	17	2.7

Hospital	Method of Delivery										
	Total	Vaginal		Vaginal after C-Section		Total C-Section		Primary C-Section		Repeat C-Section	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Morgan Co. War Memorial Hospital	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Ohio Valley Medical Center	450	299	66.4	5	1.1	145	32.2	69	15.3	76	16.9
Pleasant Valley Hospital	192	99	51.6	0	0.0	93	48.4	59	30.7	34	17.7
Preston Memorial Hospital	132	98	74.2	3	2.3	31	23.5	22	16.7	9	6.8
Princeton Community Hospital	416	310	74.5	5	1.2	101	24.3	67	16.1	34	8.2
Raleigh General Hospital	1,632	1,135	69.5	5	0.3	465	28.5	263	16.1	202	12.4
Reynolds Memorial Hospital	113	70	61.9	0	0.0	41	36.3	24	21.2	17	15.0
Roane General Hospital	95	70	73.7	1	1.1	24	25.3	8	8.4	16	16.8
St. Joseph's Hospital (Upshur)	385	308	80.0	4	1.0	69	17.9	46	11.9	23	6.0
St. Joseph's Hospital (Wood)	349	262	75.1	6	1.7	76	21.8	50	14.3	26	7.4
St. Mary's Medical Center	448	327	73.0	3	0.7	118	26.3	69	15.4	49	10.9
Stonewall Jackson Memorial Hospital	254	176	69.3	5	2.0	73	28.7	37	14.6	36	14.2
Summersville Memorial Hospital	233	147	63.1	0	0.0	83	35.6	45	19.3	38	16.3
Thomas Memorial Hospital	806	362	44.9	1	0.1	442	54.8	271	33.6	171	21.2

Hospital	Method of Delivery										
	Total	Vaginal		Vaginal after C-Section		Total C-Section		Primary C-Section		Repeat C-Section	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United Hospital Center	911	563	61.7	15	1.6	334	36.7	193	21.2	141	15.5
Webster Co. Memorial Hospital	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Weirton Medical Center	389	224	57.6	0	0.0	155	39.8	92	23.7	63	16.2
Welch Community Hospital	78	48	61.5	1	1.3	28	35.9	16	20.5	12	15.4
Wetzel County Hospital	145	94	64.8	0	0.0	51	35.2	31	21.4	20	13.8
Wheeling Hospital	933	641	68.7	7	0.8	285	30.5	166	17.8	119	12.8
Williamson Memorial Hospital	71	9	12.7	0	0.0	62	87.3	19	26.8	43	60.6
WomanCARE, Inc.	26	26	100.0	0	0.0	0	0.0	0	0.0	0	0.0
WVU Hospitals, Inc.	1,372	856	62.4	31	2.3	485	35.3	326	23.8	159	11.6
--Nonhospital births	79	72	91.1	4	5.1	2	2.5	0	0.0	2	2.5
Total WV Occurrences	21,150	13,639	64.5	154	0.7	7,231	34.2	4,363	20.6	2,868	13.6

This table extracted from the *West Virginia Vital Statistics 2005 Annual Report*

Sources:
West Virginia Data: WVDHHR-Health Statistics 2001-2005- Tom Light

National Data: Centers for Disease Control, National Vital Statistics Reports, Vol. 55, No. 1. September 28, 2006- from 2004 Vital Records

BMJ 2004;329:696-697 (25 September), doi:10.1136/bmj.329.7468.696. Geoffrey M Anderson. Editorial. Making sense of rising caesarean section rates. Time to change our goals

An Estimation of Potential Cost Savings Resulting from Reduced Complications During Delivery Of First-Time Mothers in the State of West Virginia

October 2007

Prepared for:

West Virginia
Community Voices

Prepared by:

Kent Sowards

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

An Estimation of Potential Cost Savings Resulting from Reduced Complications During Delivery Of First-Time Mothers in the State of West Virginia

Introduction

The costs associated with labor and delivery complications in the State of West Virginia are significant. In an effort to quantify the additional costs (and potential cost savings of reductions in these complications), an examination of observed deliveries and reported costs associated with these complications were in order.

Methodology

The primary data sources used in the estimation process were obtained from the West Virginia Department of Health and Human Resources and the Agency for Healthcare Research and Quality's (AHRQ) Healthcare Cost and Utilization Project. Where this data did not provide a sufficient number of observations at the State level, national data and data by individual healthcare and insurance providers were used to supplement as needed. The available data was matched against Diagnosis Related Group and Current Procedural Terminology Codes in an effort to ensure the adequacy of cost estimations.

It should be noted that the data from the Healthcare Cost and Utilization Project did not disaggregate data to either the para or gravida designation. Furthermore, the estimation of cost savings presented in this document should be used carefully. Simply summing the cost savings by individual complication to arrive at a total could significantly overstate the magnitude as many deliveries occur with multiple complications arising from a myriad of risk factors.

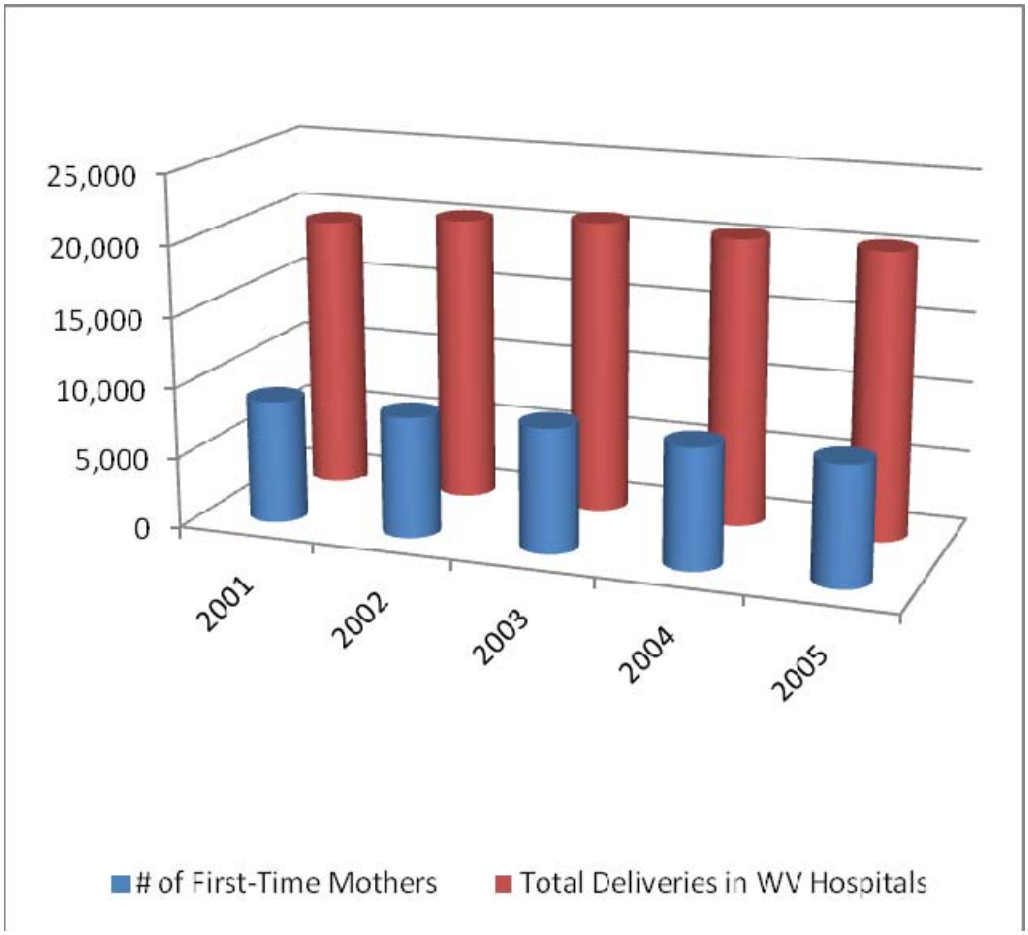
The Data

There were over 101 thousand deliveries in West Virginia Hospitals over the 2001-05 time period. Of those, slightly more than 43 thousand were to first-time mothers. The number of total deliveries in 2005 reflects a 4.7 percent increase of the 2001 figure. Despite this, total deliveries have declined in each of the last two years for which data is available. The number of deliveries to first-time mothers has also declined in each of the last two years, but in contrast (to total deliveries) has seen a decline of slightly less than three percent since 2001. Table 1 and Figure 1 illustrate the total deliveries and deliveries to first-time mothers from 2001 to 2005.

Table 1. West Virginia Deliveries to First-Time Mothers 2001-2005

Year	Total Deliveries in WV Hospitals	# of First-Time Mothers	% Deliveries to First-Time Mothers
2001	19,447	8,741	44.9%
2002	20,285	8,607	42.4%
2003	20,848	8,877	42.6%
2004	20,463	8,592	42.0%
2005	20,364	8,509	41.8%
Total	101,407	43,326	42.7%

Figure 1. West Virginia First-Time Mothers 2001-2005



Vaginal delivery without complicating diagnoses or elective procedures was selected as the base cost from which comparisons of potential cost savings were to be calculated. In 2005, the average total charge for maternity care in West Virginia was approximately $4,154. The range of costs for vaginal delivery without complicating diagnoses or elective procedures, however, reflected an extremely large span. In 2005, the range for the base procedure had a minimum cost of $360 and a maximum of $101,435. Obviously the minimum and maximum figures represent significantly different extreme cases from which cost-savings calculations would provide potentially dangerous

under/over- estimations. For illustrative purposes, however, the range of costs for vaginal delivery without complicationg diagnoses or elective procedures from 2001-2005 is provided in Table 2.

Table 2. Range of Charges for Vaginal Delivery Without Complicating Diagnosis or Elective Procedure 2001-2005

Year	Minimum Charge	Maximum Charge	Range of Charges
2001	$1	$31,044	$31,043
2002	$332	$33,848	$33,516
2003	$460	$42,169	$41,709
2004	$382	$64,181	$63,799
2005	$360	$101,435	$101,075

For the purposes of potential savings caluclations, average or mean costs by procedure will be used.

Labor Inductions to C-Sections, Normal Delivery

Failed labor inductions from either mechanical, medical or unspecified methods accounted for a mean charge of $8,333 in 2005 for West Virginia Hospital discharges. According to HCUP data, Approximately 69 instances of failed induction by medical means only were reported in 2005. Failed inductions by mechanical means were not reported. WVDHHR data indicates that 1,057 failed labor inductions led to Cesearean Section for first-time mothers in 2005.

Table 3. Mean Cost and Potential Savings Associated with Failed Labor Induction Leading to Cesearean Section, Normal Deliveries

	Normal Delivery Mean Charge	Failed Induction to C-Section Mean Charge	Mean Charge Above Normal Delivery	
2005 Failed Induction to C-Section	$3,871	$8,333	$17,245	
Year	**Discharges**	**Mean Charge Above Normal Delivery**	**Total Charges Due to Failed Induction to C-Section**	**Potential Savings**
WV Observed Deliveries with Failed Induction to C-Section in 2005	1,057	$17,245	$4,716,334	$0
Five Percent Reduction	1,004	$17,245	$4,476,848	$236,486
Ten Percent Reduction	951	$17,245	$4,243,362	$472,972
Twenty Percent Reduction	846	$17,245	$3,774,852	$941,482

Infant Transfer to NICU

Costs for transfers to Neonatal Intensive Care Units are based upon the status of the infant, gestational age and birth weight. Using the ICD-9 designation for conditions related to short-gestation and lowbirthweight observations from the HCUP dataset can be used as an approximation of mean charges for NICU cases. In 2005, 190 WV hospital discharges for conditions related to short gestation and low birth weight resulted in an average charge of$41,815 and a 16.0 day stay. The DHHR data indicates that 128 infants of first-time mothers were transferred to NICUs after delivery.

Table 4. Mean Cost and Potential Savings Associated with Infant Transfers to NICU

	Discharges	Mean Charge Infant Transfers to NICU	Total Charges Due to Infant Transfers to NICU	Potential Savings
WV Estimated Deliveries with Infant Transfers to NICU in 2005	128	$41,815	$5,352,320	$0
Five Percent Reduction	14	$26,075	$5,101,430	$250,890
Ten Percent Reduction	13	$26,075	$4,808,725	$543,595
Twenty Percent Reduction	12	$26,075	$4,265,130	$1,087,190

Labor Inductions to C-Sections Without Pre-existing Conditions, Infant to NICU

Building upon the failed labor inductions leading to C-Section and NICU transfer data (presented above), estimates can be produced for the costs associated with failed inductions leading to C-Sections where infants were transferred to NICU. WVDHHR data indicates that 30 infants were transferred following failed inductions that lead to C-Section in 2005.

Table 5. Mean Cost and Potential Savings Associated with Failed Labor Induction Leading to Cesearean Section, Infant Transferred to NICU

	Normal Delivery Mean Charge	Failed Induction to C-Section, NICU Mean Charge	Mean Charge Above Normal Delivery	
2005 Failed Induction to C-Section, NICU	$3,871	$50,148	$46,277	
Year	**Discharges**	**Mean Charge Above Normal Delivery**	**Total Charges Due to Failed Induction to C-Section, NICU**	**Potential Savings**
WV Observed Deliveries with Failed Induction to C-Section, NICU in 2005	30	$50,148	$1,388,310	$0
Five Percent Reduction	29	$50,148	$1,342,033	$46,277
Ten Percent Reduction	27	$50,148	$1,249,479	$138,831
Twenty Percent Reduction	24	$50,148	$1,110,648	$277,662

Low birthweight Births from Smoking

For observation year 2005, there were 293 first-time mothers births in West Virginia where the newborn was considered of low birth weight and the mother smoked during pregnancy. HCUP discharge data only provides mean charges for certain weight groups of low birth weight births. In an effort to conservatively estimate charges in this case, we will use the national mean charge of $21,116 (the lowest presented cost).

Table 6. Mean Cost and Potential Savings Associated with Low Birthweight from Smoking

	Normal Delivery Mean Charge	Diabetes Mean Charge	Mean Charge Above Normal Delivery	
2005 Low Birthweight from Smoking	$3,871	$21,116	$17,245	
Year	**Discharges**	**Mean Charge Above Normal Delivery**	**Total Charges Due to Diabetes**	**Potential Savings**
WV Estimated Deliveries with Low Birthweight from Smoking in 2005	293	$17,245	$5,052,785	$0
Five Percent Reduction	278	$17,245	$4,794,110	$258,675
Ten Percent Reduction	264	$17,245	$4,552,680	$500,105
Twenty Percent Reduction	234	$17,245	$4,035,330	$1,017,455

Maternal drug dependance and infant withdrawal

Estimation of the potential costs and cost savings for infant withdrawal presented more than a few issues. First, WV data on the number of newborns treated for drug withdrawal symptoms were not released by either the WVDHHR or through the HCUP discharge data. Futher complicating the matter, data laso not available by para or gravida.

Using the assumptions that withdrawal syndrome is observed evenly in West Virginia as in the U.S. and across para and gravida (which is in itself reasonable, yet equally unlikely) can be estimated. Using only the lower bounds from a 1998 national newborn drug prevelance report[1], about three percent of all births are exposed to drug use during pregnancy. Further, roughly six percent exhibit signs of withdrawal for treatment. This would put the approximate number of births to first-time mothers with newborns exhibiting some form of drug withdrawal symptom at approximately 15. Additonal research to determine the exact number of newborns traeted for drug-withdrawal is obviously desirable.

The calculation for drug-treatment costs and potential savings are different from other calculations in this estimation. These costs are additional to delivery, regardless of diagnosis as they apply only to the newborn. In 2005, observed mean charges for newborn drug withdrawal syndrome were $26,075 and required a mean stay of 12.7 days.

1 AAP: Neonatal drug withdrawal. American Academy of Pediatrics Committee on Drugs [published erratum appears in Pediatrics 1998 Sep; 102(3 Pt 1):660]. Pediatrics 1998 Jun; 101(6): 1079-88

Table 7. Mean Cost and Potential Savings Associated with Newborn Drug Withdrawal Syndrome

	Discharges	Mean Charge Newborn Drug Withdrawal Syndrome	Total Charges Due to Newborn Drug Withdrawal Syndrome	Potential Savings
WV Estimated Deliveries with Newborn Drug Withdrawal Syndrome in 2005	15	$26,075	$391,125	$0
Five Percent Reduction	14	$26,075	$365,050	$26,075
Ten Percent Reduction	13	$26,075	$338,975	$52,150
Twenty Percent Reduction	12	$26,075	$312,900	$78,225

Diabetes

There were 335 discharges in Wets Virgina during 2005 where the primary delivery diagnosis was abnormal glucose tolerance (diabetes). This figure is relatively consistent with the number of first-time mothers as reported by the WVDHHR (321 deliveries). The mean charge for a delivery with abnormal glucose tolerance in 2005 was $5,432 and resulted in an average length of stay of 2.5 days.

Table 8. Mean Cost and Potential Savings Associated with Abnormal Glucose Tolerance (Diabetes)

	Normal Delivery Mean Charge	Diabetes Mean Charge	Mean Charge Above Normal Delivery	
2005 Diabetes	$3,871	$5,432	$1,561	
Year	**Discharges**	**Mean Charge Above Normal Delivery**	**Total Charges Due to Diabetes**	**Potential Savings**
WV Observed Deliveries with Diabetes in 2005	335	$1,561	$522,935	$0
Five Percent Reduction	318	$1,561	$496,398	$26,537
Ten Percent Reduction	302	$1,561	$471,422	$51,513
Twenty Percent Reduction	268	$1,561	$418,348	$104,587

Pregnancy Induced Hypertension (PIH)

For observation year 2005, there were 617 discharges in West Virginia where the delivery diagnosis included the primary diagnosis code for pregnancy induced hypertension (PIH) during delivery. However, West Virginia Department of Health and Human Resources data indicate that an average of 697 first-time mothers were diagnosed with PIH during pregnancy over 2001 to 2005. The mean charge for a delivery with PIH in 2005 was $5,802 and resulting in an average length of stay of 2.8 days.

Table 9. Mean Cost and Potential Savings Associated with Pregnancy Induced Hypertension (PIH)

	Normal Delivery Mean Charge	PIH Mean Charge	Mean Charge Above Normal Delivery	
2005 PIH	$3,871	$5,802	$1,931	
Year	**Discharges**	**Mean Charge Above Normal Delivery**	**Total Charges Due to PIH**	**Potential Savings**
WV Observed Deliveries with PIH in 2005	697	$1,931	$1,345,907	$0
Five Percent Reduction	662	$1,931	$1,278,322	$67,585
Ten Percent Reduction	627	$1,931	$1,210,737	$135,170
Twenty Percent Reduction	558	$1,931	$1,077,498	$268,409

Eclampsia

For observation year 2005, there were only 16 discharges in West Virginia where the delivery diagnosis included the primary diagnosis code for eclampsia during delivery. However, West Virginia Department of Health and Human Resources data indicate that an average of 48.4 first-time mothers were diagnosed with eclampsia during pregnancy over 2001 to 2005. The mean charge for a delivery with eclampsia in 2005 was $12,250 and resulting in an average length of stay of 4.3 days.

Table 10. Mean Cost and Potential Savings Associated with Eclampsia

	Normal Delivery Mean Charge	Eclampsia Mean Charge	Mean Charge Above Normal Delivery	
2005 Eclampsia	$3,871	$12,250	$8,379	
Year	**Discharges**	**Mean Charge Above Normal Delivery**	**Total Charges Due to Eclampsia**	**Potential Savings**
WV Observed Deliveries with Eclampsia in 2005	48	$8,379	$402,192	$0
Five Percent Reduction	46	$8,379	$385,434	$16,758
Ten Percent Reduction	43	$8,379	$360,297	$41,895
Twenty Percent Reduction	38	$8,379	$318,402	$83,790

Abruption Placenta

For observation year 2005, there were 124 discharges in West Virginia where the delivery diagnosis included the diagnosis code for placental separation or abruption placenta during delivery. The mean charge for a delivery with abruption placenta in 2005 was $10,164 and resulting in an average length of stay of 5.1 days. West Virginia data for first-time mothers experiencing abruption placenta were not available. Assuming that abruption placenta is spread evenly among deliveries, it is estimated that 52 first-time mothers experienced abruption placenta during delivery in 2005.

Table 11. Mean Cost and Potential Savings Associated with Abruption Placenta

	Normal Delivery Mean Charge	Abruption Placenta Mean Charge	Mean Charge Above Normal Delivery	
2005 Abruption Placenta	$3,871	$10,164	$6,293	
Year	**Discharges**	**Mean Charge Above Normal Delivery**	**Total Charges Due to Abruption Placenta**	**Potential Savings**
WV Observed Deliveries with Abruption Placenta in 2005	52	$6,293	$327,236	$0
Five Percent Reduction	118	$6,293	$308,357	$18,879
Ten Percent Reduction	112	$6,293	$295,771	$31,465
Twenty Percent Reduction	99	$6,293	$264,306	$62,930

Conclusions

The estimated potential savings for failed inductions and infant transfers, due to their implicit costs and frequency have the greatest potential for substantial cost savings. While understanding that estimating potential cost savings at five, ten and twenty percent levels are representation goals , it is important to remember that even smaller reduction in some of the costs presented in this undertaking can be significant. Additional costs arising from the conditions examined also have the potential to be significant.

It should also be reiterated that these costs are often difficult to disconnect from other diagnoses that are often present in either high-risk or complicated births.

West Virginia Perinatal Partnership – 2007
Committee on Drug Use during Pregnancy

Committee Chair: *Stefan Maxwell, MD, Chief of Pediatrics and Director of Neonatal Intensive Care Services, CAMC Women and Children's Hospital*

Members:
Terri Bliziotes, MPH, RN, WV Primary Care Association
Luis Bracero, MD, Director-Maternal Fetal Medicine, Women and Children's Hospital, Charleston
Kelley Cielensky, MBA, WVDHHR, Office of Behavioral Health, Division on Alcoholism and Drug Abuse
Elizabeth Cohen, MSW, UHA, Department of OB-GYN, Morgantown
Ann Dacey, RN, Nurse Coordinator, Perinatal Partnership -2007, CEWH, WVUSOM
Paula Darby, RN, Right From the Start Region VII
Theresa Frazer, MD, FAAP, Bluefield Regional Medical Center, Bluefield
Kathy Imes, RN, Nurse Manager, Labor/Delivery, Cabell Huntington Hospital, Huntington
Ellen Kirby, RN, Right From the Start Region VIII
Shelda Martin, MD, PEIA Medical Director
Dee Messinger, RN, Right From the Start Region II
Fran O'Brien, RN, OB Nurse Manager, Greenbrier Valley Medical Center, Ronceverte
Michele Stitely, MD, Faculty, OB-Gyn Department, WVU Hospitals, Morgantown
Trish Sheridan, RN, NICU, CAMC-Women and Children's Hospital, Charleston
Kathy Szafram, MA, LPC, President & CEO, Crittenton Services, Wheeling
Penny Womeldorf, MSW, WV Healthy Start/HAPI Project, Morgantown
Sandy Young, RNC, MSN, Nursing Director of Women and Children's Services, Thomas Memorial Hospital, Charleston

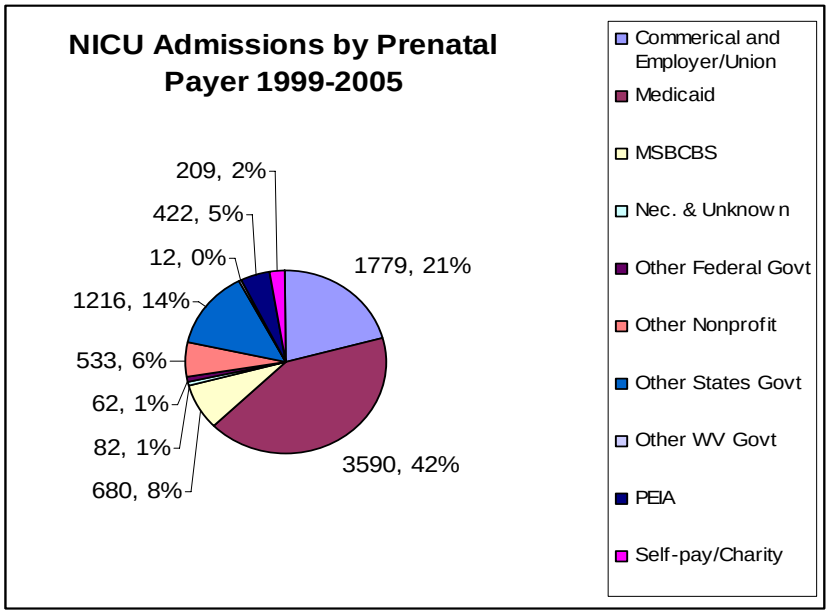
Committee Staff: *Nancy Tolliver, RN, MSIR*
Medical – Legal Researcher: *Michele Grinberg, Esq.*

DESCRIPTION OF PROBLEM

In 2006, the West Virginia Perinatal Partnership conducted and published a *Key Informant Survey* of perinatal providers. The purpose of the survey was to identify perinatal provider's perceptions and experiences regarding the major factors affecting the State's poor newborn outcomes. The increased use of illicit and legal drugs and alcohol among pregnant women was reported as a major factor by 50 percent of the providers responding.

Overflow of the State's three neonatal intensive care units (NICU) was also identified by the *Key Informant Survey*. Review of the occupancy rate of NICU beds was conducted by the West Virginia Health Care Authority (WVHCA) during 2007 and found that the NICU facilities have been functioning at 100 percent capacity. Discharges from WV NICU's increased by 165 percent from 1999 through 2005. Although it is not completely clear as to why the increase has been so severe and so sudden, NICU specialists indicate that an increase in the demand for detoxification of newborns is a recent and increasing occurrence. This situation presents a health care crisis for the addicted infants and mothers as well as other infants and mothers who need care but may be turned away from the tertiary care centers.

The increase in the number of chemically-dependent babies also presents a cost to society. A review of data by the WV Health Care Authority shows that Medicaid covers 42 percent of all NICU admissions. Commercial – employer and union insurance covers 21 percent, Mountain State Blue Cross Blue Shield covers 8 percent, PEIA covers 5 percent, and other WV government covers 1 percent of all NICU admissions.

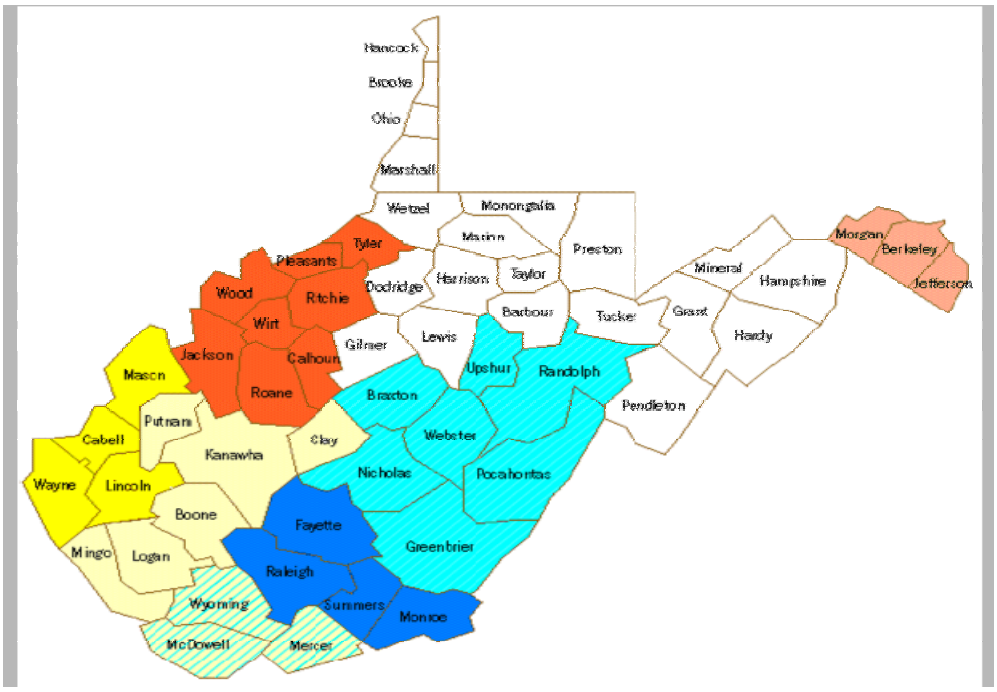


Information regarding the extent of legal and illegal addictive substances by pregnant women has been difficult to identify. During 2007 three sources of data have been utilized by the WV Perinatal Partnership to help define the problem.

WV Data Studies - 2007

I. The WV Department of Health and Human Resources, Bureau for Behavioral Health, Division on Alcohol and Drug Abuse, Programs for Women and Women with Children gives priority to serving pregnant women and women with children through the funding of four treatment programs. Kelley Cielensky, MBA, WVDHHR, Office of Behavioral Health, provided the data from the Bureau.

WVDHHR SPECIALIZED SERVICES FOR ADDICTED WOMEN



Key to Service Areas:

Red = Genesis of Mid-Ohio Valley;
Pink = Services no longer available;
Yellow = Renaissance Main Service Area;
White = Renaissance Outreach & Continuing Care;
Blue = Mother Main Service Area;
Aqua = Mother Outreach & Continuing Care;
Striped = Outreach Provided by Renaissance; Continuing Care by Mother.
Contact information is listed at the end of this report.

Federal funds provided for care in West Virginia prioritizes placements for treatment of women as follows: (1) IV-Drug using pregnant women, (2) Pregnant women, (3) Women with children. Therefore, the eight Behavioral Health Centers operating residential programs go by these priorities.

The Bureau reported that in Fiscal 2006 there were 373 pregnant women treated for substance abuse. Of those treated, 214 were treated at Behavioral Health Centers and 159 at Methadone Clinics. Methadone treatment continuation during pregnancy is considered treatment of choice by many professionals to reduce risks to the fetus. However, newborns of mothers who continue methadone treatment during pregnancy will experience withdrawal and must be treated for withdrawal after birth. Drug use among pregnant women does not appear to be isolated geographically, but indeed is found across the State.

Observations Related to WVDHHR Reporting

1. Four Behavior Health Centers operated eight substance abuse residential treatment programs.

2. The programs give priority to treatment of pregnant women.
3. Both residential and outpatient programs, short-term and long-term, are offered.
4. The adequacy of the number of programs to care for addicted women has not been identified.
5. Three hundred seventy-three women were treated through these programs during 2006, representing around 2 percent of WV births.

II. A survey of OB hospital nurse managers was conducted by Sandy Young, RN, BSN, Director of Women and Children's Services of Thomas Memorial Hospital, and Cinny Kittle, MS, of the WV Hospital Association. The purpose of the survey was to identify the use of common screening and testing protocol, treatment methodologies for newborns, and the most commonly seen drug exposures among neonates. Sixty-eight percent of the nurse managers at hospitals that offer birthing services responded to the following five survey questions.

Question 1: How do you identify drugs of abuse in pregnant women?

Response	Percent of Nurses Reporting
Personal Report	76.2%
Blood Test	28.6%
Urine Test	76.2%
Other (Prenatal Record)	4.8%

Question 2: How do you identify drugs of abuse in neonates?

Response	Percent of Nurses Reporting
Personal Report	38.1%
Meconium Test	66.7%
Urine Test	81%
Blood Test	9.5%
Other (No screening, physical assessment)	9.5%

Question 3: Do you use an abstinence/withdrawal scoring tool on your neonates?

Response	Percent of Nurses Reporting
No	57.1%
Yes	23.7%
Neonatal Abstinence Tool	14.3%
Finnegan	14.3%
Modified Scale	9.5%
Other CAMC Johns Hopkins/Bayview Use risk assessment to see who needs testing	14.3%

Just 23.7 percent of responding nurses indicated that a scoring tool is utilized to identify addictive substances in neonates. Fifty-eight percent indicated they did not currently use a scoring mechanism.

Question 4: What do you use to treat for withdrawal in neonates?

The most commonly reported treatment for withdrawal for neonates was methadone (50 percent of responding nurses). Paregoric was reported by 6 percent. And, fifty percent of respondents made the following comments about treatment of neonates.

- No protocol at this time
- None
- Morphine
- Transport out of the system
- Transport to NICU
- Haven't had an infant that physician feels needs treatment

Question 5: What do you perceive to be the most common drug exposure in your neonates?

Substance	Percent of Nurses Reporting
Methamphetamine	15%
Cocaine	30%
Marijuana	85%
Opiates	35%
Poly substance abuse	5%
Other (e.g., Methadone, Cigarettes, Barbiturates other than listed above, Benzos)	30%

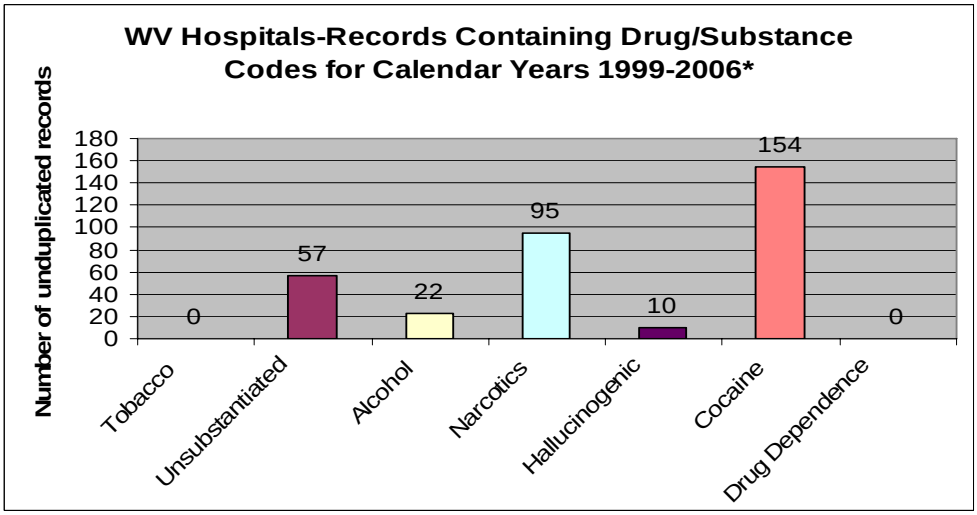
Observations from Nurse Manager Survey Findings:

- Hospitals offering obstetrical care and delivery currently depend heavily on personal reports (76.2 percent) and urine testing of pregnant and newly delivering women (76.2 percent) to identify chemical addictions.
- To identify withdrawal needs of neonates hospitals rely primarily (66 percent) on meconium testing.
- Fifty-eight percent of hospitals do not utilize an addiction scoring tool for neonates.
- Fifty percent of responding hospitals use methadone as withdrawal treatment for neonates, while 50 percent transfer out, do not have protocol, use morphine, or haven't had an infant needing treatment.
- Eighty-five percent of responding nurses feel that marijuana is the most common drug exposure in neonates.

III. The WV Health Care Authority reviewed and reported on inpatient hospital discharge data related to maternal and newborn treatment for drug use. From the findings it appears that hospitals utilize a variety of codes in reporting treatment for drug use, which presented difficulty in measuring the extent of the prevalence. Upon reviewing the findings on May 18, 2007, members of the Central Advisory Council of the Perinatal Partnership recommended that all hospitals should be educated to use like codes for like purposes so that subsequent reviews would provide a clearer picture of the numbers treated.

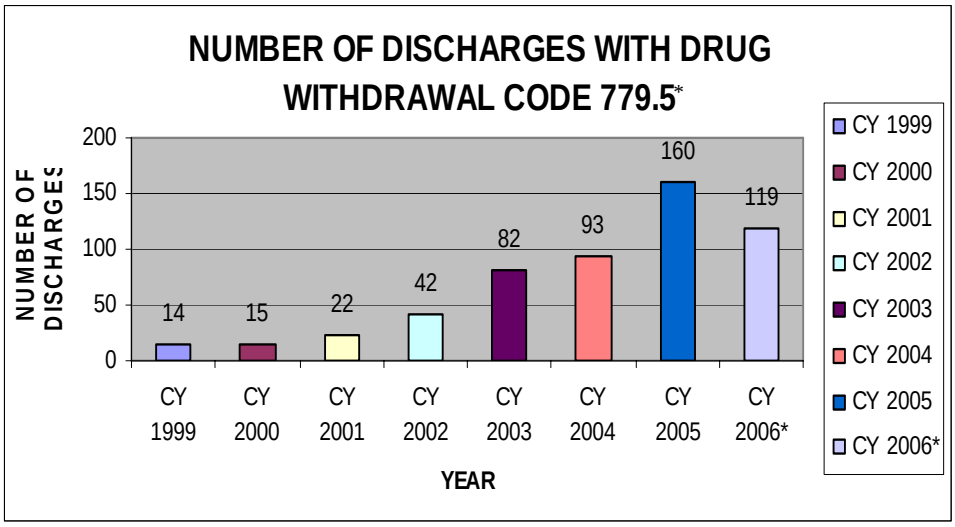
Over the eight-year period that was reviewed, very few pregnant women were found to have received treatment for drug use while delivering infants. However, 26 of the 31 birthing hospitals in West Virginia reported at least one case of treatment of a pregnant woman coming in for birth. This would lead us to believe that the use of drugs during

pregnancy is not a geographic anomaly, but spread across the State. Many rural maternity providers indicate they screen women with drug use as high risk and refer them for care with a specialist. CAMC reported the highest number treated at 87. Next highest were Cabell Huntington at 41, City Hospital and WVU Hospitals at 28 each, Bluefield Regional and Thomas Hospital each at 17, Logan Regional at 14, Ohio Valley Medical Center at 13, Welch Community at 11, and Raleigh General and Weirton Medical each at 10. All of the remaining birthing hospitals reported fewer than 10.



*2006 data is provisional.

Next the WV HCA reviewed the codes for the number of discharges of newborns treated for withdrawal from drugs. This proved to be a different story from the report on pregnant women delivering. Although the review of the codes cannot be taken as a complete answer regarding drug use among this population, the following graph demonstrates that hospitals have been coding a rapidly increasing number of infants treated for withdrawal from 1999 through 2006. The number of infants reported as treated doubled from 2003 through 2005.



* WV Health Care Authority Data 1999-2006. 2006 data is provisional at time of report.

Again, 87 percent of the birthing hospitals reported infants discharged with the code for withdrawal treatments. The following is a listing of the number of reports by hospital for the eight-year period of time reviewed. Because of the delicate nature of treating severely affected infants, many are transferred to one of the three tertiary care centers.

Hospital	Number of Infants Discharged with Code 779.5*
Cabell Huntington Hospital	110
Charleston Area Medical Center	102
City Hospital, Inc.	94
Bluefield Regional Medical Center	71
Princeton Community Hospital	33
WV University Hospitals, Inc.	26
Raleigh General Hospital	24
Thomas Memorial Hospital	16
Jefferson Memorial Hospital	15
Logan Regional Medical Center	14

*WV Health Care Authority data: 1999-2006

The following hospitals reported fewer than ten discharges of infants with code 779.5: Weirton Medical Center, United Hospital Center, Summersville Memorial Hospital, St. Mary's Medical Center, Roane General Hospital, Pleasant Valley Hospital, Ohio Valley Medical Center, Monongalia General Hospital, Greenbrier Valley Medical Center, Grant Memorial Hospital, Fairmont General Hospital, Davis Memorial Hospital, Camden-Clark Memorial Hospital.

Observations Related to WVHCA Findings

Neonatologists treating drug-addicted infants believe that these numbers are seriously underreported. In view of the fact that 373 addicted pregnant women are reported treated through the WVDHHR from 2005 - 2006, we are aware that the hospital numbers are seriously underreported. There are many reasons for underreporting.

1. Some drugs, such as methamphetamine, cannot be identified in the infant meconium stool as the drug traces disintegrate quickly and are not identifiable.
2. Infants addicted to some drugs do not demonstrate signs of withdrawal until the third to fifth day after birth, and by that time they are already discharged to home. This is a serious concern as the potential for exposure to neglect and abuse from addicted parents may increase in these situations.
3. Some obstetrical providers do not screen or test for drug use among pregnant women as they fear women will not seek early prenatal care if they disclose their addiction. This can pose an even higher risk to the mother's own health as well as the infant's.
4. Some obstetrical providers indicate that they do not screen or test for drug use among pregnant women as the legal issues and concerns providers face if a user is identified are not clear. Indeed, legal advice to hospital administrators regarding these issues varies greatly from institution to institution.
5. The detoxification of newborns may be coded differently by hospitals. Only a medical chart review for newborns would provide a clearer picture of the existing situation.
6. A variety of codes are available and utilized by hospitals. More standardization in coding would improve the ability to analyze the situation.

This situation is considered serious and critical for the following reasons:

1. Drug use among pregnant West Virginia women appears to be rapidly and continuingly growing.
2. The NICU beds are scarce and at 100 percent capacity. Many of these beds handle the detoxification of newborn infants. Many rural obstetrical providers are not able to get their at-risk mothers and/or infants accepted into a bed at a tertiary care center due to a lack of NICU beds.
3. Diagnosis and treatment of addiction early in pregnancy can prevent serious health problems for both the mother and infant.
4. Obstetrical providers are not adequately prepared or educated to recognize the problem.
5. No legal opinion and process has been designed to encourage a set of guidelines for diagnosis and treatment early in pregnancy.
6. Obstetrical providers are concerned that pregnant women need protection from prosecution before they will willingly admit to drug use and treatment.

COMMITTEE RECOMMENDATIONS

Related to the care of pregnant women

1. Continue the study of medical and legal issues surrounding drug use and testing during pregnancy; determine existing laws that may impact on the ability of medical personnel to screen for drug use during pregnancy and what changes may be needed so that pregnant women are protected from prosecution if they come in early for prenatal care and treatment.
   a. Gain an understanding of existing state and federal legal issues that affect pregnant addicted women;
   b. Develop a report of other states' best practices;
   c. Engage the WV Legislature's Judiciary and Health Committees in discussion and design of solutions to any identified problems; and
   d. If indicated, provide advice regarding appropriate legislation.
2. Draft medical guidelines for obstetrical providers to use statewide for testing for drug use during early pregnancy and referring for treatment.
3. Plan for an educational program to be taken statewide to train obstetrical providers to implement the recommended guidelines during 2008.
4. Write and publish reports and prepare educational material that provide perinatal providers and pregnant women with information and guidelines needed to assure pregnant addicted women receive adequate and timely prenatal care and addiction treatment beginning early in pregnancy.

Related to protection of addicted pregnant women through legislation

1. Protection of pregnant women from retribution of any kind
   a. No criminal prosecution based solely on medical records – exempt records from use in criminal proceedings (See VA)
   b. Exempt records from FOIA (See OH)
   c. No termination of state benefits (Medicaid, CHIP, etc.).
2. Mandate Screening
   a. Provide immunity to healthcare provider for screening/results (particularly if patient refuses help after + screening or testing)

   b. Define screening and through rules create a uniform screening tool
   c. Define when testing must be offered -- based on positive triggering findings
3. Treatment
   a. Women referred to treatment need preferential right to treatment.
   b. Women who test + are referred to treatment. If follow treatment and follow-up care protocols, then no adverse state actions (criminal or civil).
   c. Need focus on outpatient treatment assistance.

Related to the care of newborns

1. Establish recommended guidelines for screening and testing of delivering women for addictive substances.
2. Design hospital guidelines and tools needed to identify neonates in addiction withdrawal, and recommended treatment for neonates.
3. Enumerate the current situation of services provided for detoxification of newborns. Work with 3 tertiary care centers and additional hospitals to conduct chart reviews of newborn discharges for 2005.
4. Study and report the economic impact of detoxification of newborns compromised by drug addiction as compared to normal newborn care.
5. Design and conduct educational opportunities for hospital nurses, physicians, and other personnel regarding the use of recommended guidelines and tools.
6. Establish an expert committee to regularly review and update the guidelines.

POLICY PROPOSAL: SCREENING, TESTING AND REFERRAL OF PREGNANT WOMEN FOR TREATMENT

Background:

- Pregnant women who use addictive and mood altering drugs such as cocaine, marijuana, diazepam, methamphetamine and other prescription or non-prescription drugs can become chemically dependent. Their infants, as well, usually demonstrate symptoms of chemical dependency.

- Substance use during pregnancy, including legal and illicit drugs, smoking, and alcohol, is a risk factor for adverse birth outcomes, such as neonate substance withdrawal, birth defects, developmental disabilities, preterm birth, low birth-weight and infant mortality.

- Drug dependent pregnant women are at increased risk for medical and obstetrical complications, including placenta abruption, preterm labor, and hypertension associated pregnancy among other illnesses.

- In 2002, of the 363,000 treatment admissions reported to SAMHSA's Treatment Episode Data Set (TEDS) of women of usual childbearing age (aged 15 to 44 years) for which pregnancy status was recorded, 4 percent were known to be pregnant when admitted.

- Approximately 1 in 10 neonates is exposed to one or more mood altering drugs during pregnancy.

- Drug exposed neonates may go unrecognized and are discharged from hospitals to homes where they are at increased risk for medical and social problems.

- In West Virginia in 2005, 6.7 percent of women of childbearing age (18-44 years) reported binge drinking in the past month, compared to 11.0 percent overall in the U.S.

- Compared to nonpregnant admissions for treatment of addictions, pregnant women aged 15 to 44 entering treatment were more likely to report cocaine/crack, amphetamine/methamphetamine, or marijuana as their primary substance of abuse and less likely to report alcohol (18 percent vs. 31 percent).

- Pregnant women admitted for treatment of addictions were more likely than nonpregnant admissions aged 15 to 44 to be covered by health insurance (62 percent vs. 46 percent), especially by Medicaid (47 percent vs. 27 percent).

- Compared with admissions among nonpregnant women, the rate of admissions by pregnant women was higher for residential/rehabilitative service settings (22 percent vs. 18 percent) and ambulatory services (71 percent vs. 66 percent) and lower for detoxification services (7 percent vs. 16 percent).

- Pregnant women with chemical dependencies tend not to seek early prenatal care and fear legal and criminal charges.

- Pregnant women with chemical dependencies tend to want to receive treatment during pregnancy for their infant's wellbeing.

- Identification of chemical dependency and treatment during early pregnancy offers the greatest opportunity for positive health and social outcomes for the addicted pregnant woman and for her newborn infant.

***Policy Recommendation**:*

Therefore, protection of pregnant women with chemical dependency from legal recourse is essential to the establishment of a successful screening, testing, and treatment protocol for obstetrical providers. All screening, testing, and voluntary admission of chemical dependency will be confidential and will not be subject to reporting or disclosure for criminal prosecution. Obstetrical providers will not report their findings to any third party without the consent of the pregnant woman.

Adequate treatment programs for chemical dependency that are geographically and financially accessible are essential for the establishment of a successful screening, testing and treatment protocol for obstetrical providers.

Providing that the essential elements are available, best practice calls for providers of obstetrical care to provide screening and testing for all pregnant women early in pregnancy to determine the presence of addictive chemicals in their body.

The testing costs should be covered by the woman's health insurance as part of routine prenatal care.

Pregnant women found to test positive for addictive substances or who provide information regarding their chemical dependency,

1. Will receive counseling regarding the perinatal implications of their drug use during pregnancy.

2. Will be offered referral to an appropriate drug treatment center.
3. Will be provided the protection of law.

Obstetrical providers and treatment facilities for chemical dependency will establish collaborative protocol for the care and treatment of pregnant women with addiction.

***Data Sources*:**

The DASIS Report: Pregnant Women in Substance Abuse Treatment: 2002, is based on the Drug and Alcohol Services Information System (DASIS), the primary source of national data on substance abuse treatment. DASIS is conducted by the Office of Applied Studies (OAS) in the Substance Abuse and Mental Health Services Administration (SAMHSA).

The following were retrieved May 09, 2007, from www.marchofdimes.com/peristats:

Alcohol Use: Behavioral Risk Factor Surveillance System. Behavioral Surveillance Branch, Centers for Disease Control and Prevention. Binge alcohol use is defined as having five or more drinks on at least one occasion during the past month. Percent reported is among women ages 18-44.

Illicit drug use indicates use at least once of marijuana/hashish, cocaine (including crack), inhalants, hallucinogens (including PCP and LSD), heroin, or any prescription-type psychotherapeutic used non-medically. Percent reported is among population ages 12 and older. Illicit Drug Use: SAMHSA, Office of Applied Studies, National Survey on Drug Use & Health.

Smoking is defined as having ever smoked 100 cigarettes in a lifetime and currently smoking everyday or some days. Percent reported is among women ages 18-44 and among men 18 years and older. Smoking: Behavioral Risk Factor Surveillance System. Behavioral Surveillance Branch, Centers for Disease Control and Prevention.

***Women's Treatment Programs Contact Information*:**

Renaissance Programs: (4 residential) Prestera Center, Huntington. Kim Miller: 525-4673 ext. 4506

Mother Program: (1 residential) FMRS, Beckley. Kathy Armentrout: 256-7100

Genesis of Mid-Ohio Valley: (2 residential programs)

A. Westbrook, Parkersburg. Karen Schimmel: 295-5665
B. Mid-Ohio Valley Fellowship Home, Parkersburg. Bob Weaver: 485-3341

New Beginnings: (1 residential program) Valley Healthcare, Inc., Nancy Demming, 304-296-1731

Rae of Hope: (1 residential program) Rae of Hope Fellowship Home, Inc., Marie Beaver, 304-344-5363

West Virginia Perinatal Partnership - 2007
Final Report and Recommendations

Committee to Encourage the Development of Perinatal Worksite Wellness Programs

Committee Chair: *Betty Critch Parsons, MBA, Center for Excellence in Women's Health*
Members:
Sue Binder, RN, MS, Director of Program Services, WV Chapter, March of Dimes
Sharon Covert, Director, Wellness Council of West Virginia
Barbara, Koster, MSN, NP, CAMC- Employee Health
Jeannie Zinn, Perinatal Educator, Monongalia General Hospital
Committee Staff:
Cinny Kittle, Project Director, Day One, West Virginia Hospital Association
Ann Dacey, RN, WVU Center of Excellence in Women's Health

DESCRIPTION OF PROBLEM

Currently 71 percent of all mothers in United States hold jobs. In the past 20 years the percentage of new mothers in the workforce has increased by more than 80 percent. Women of childbearing age comprise one-third of the nation's workforce. Eight out of ten women will become pregnant in their working lives, and most continue to work through the pregnancy and return to work shortly after the baby is born. One-third of mothers return to work within three months of giving birth and two-thirds return within six months.

Prenatal worksite wellness programs have been shown to:

- Improve pregnancy outcomes,
- Reduce the rates of preterm births, smoking, and cesarean sections, therefore
- Significantly reduce health care costs to employers.

According to the Washington Business Group on Health[1], employer-based pregnancy education programs can facilitate healthy behaviors. Pregnancy education programs should:

1. Encourage good preconception health and the management of preexisting chronic conditions. Women should receive preconception counseling and support regarding exercise, healthy eating, weight control, health maintenance; STI prevention, abstinence from tobacco, alcohol, and illicit drugs, and information on appropriate birth spacing.

2. Educate employees and their partners on the signs of preterm labor and risk factors for prematurity and low birth-weight. Prenatal classes and distributed literature are an ideal venue for these messages. Health coaches, EAP staff, case managers, and online resources can increase the bandwidth of the message.

Worksite breastfeeding support programs have been shown to result in:

- Less illnesses in babies in the first year of life
- Significant cost savings because of less illness. (Aetna estimated that it saved $1,435 in medical claims per breastfed infant during his/her first year of life after implementing a worksite lactation program.)
- Reduced absenteeism to care for ill children
- Improved employee productivity
- Higher morale and greater loyalty
- Improved ability to attract and retain valuable employees
- Family-friendly image in the community

The 2006 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.

Very few companies responded to the surveys and the companies that responded did not have perinatal wellness programs.

---

[1] Campbell KP, editor. *Investing in Maternal and Child Health: An Employer's Toolkit.* Washington, DC: Center for Prevention and Health Services, National Business Group on Health; 2007.

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

Recommendations from 2006 Blueprint to Improve West Virginia Perinatal Health:

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 WV 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.

Directives to Committee and Work To Date

1. Identify an existing worksite wellness program that addresses perinatal health that we would want to promote.
2. Identify and describe nationally-recognized programs that exist and have been proven to be effective.
3. Identify and describe some West Virginia programs that exist and have been proven to be effective.
4. Research and identify nationally-recognized criteria for perinatal worksite wellness programs.
5. Develop a communications plan to identify the best means of getting this knowledge to businesses, i.e., news articles, conferences, workshops, website, etc.
6. Identify plausible incentives that would compel companies to start worksite programs.
7. Identify means to put incentives into practice.

ACCOMPLISHMENTS TO DATE

The committee was not able to meet in 2007 but the committee staff along with the program director of the March of Dimes achieved the following:

1. One WV worksite, Charleston Area Medical Center, Women and Children's Hospital, has committed to initiating a perinatal worksite wellness programs in response to our work. This is still in the planning stage.
2. The WVU National Center of Excellence in Women's Health (COEWH) has the intent to establish a perinatal worksite wellness program at West Virginia University
3. WV Wellness Council had a keynote speaker, Steve Abelman, March of Dimes Director of Worksite Wellness Programs, and a breakout session on perinatal worksite wellness at the Annual Governor's Conference on Worksite Wellness, October 25-26, 2007.
4. The WV March of Dimes had an exhibit on "Healthy Babies Healthy Business" at Annual Governor's Conference on Worksite Wellness, October 25-26, 2007.

5. The Governor's conference was used as a springboard to promote perinatal wellness in 2008 as there was a lot of interest from businesses that were represented at the conference.
6. The COEWH and the March of Dimes have committed to work towards promoting perinatal worksite wellness to businesses in West Virginia and getting the idea into the goals of West Virginia Vision Shared.

RECOMMENDATIONS

1. Plan for statewide perinatal worksite training to be held in 2008, inviting all West Virginia businesses. (Potential collaborators on this venture may be March of Dimes, the COEWH, WV WELCOA, WV Vision Shared, and the WV Perinatal Partnership.)
2. Develop a communications plan to identify the best means of getting this knowledge to businesses, i.e., news articles, conferences, workshops, website, etc.
3. Identify plausible incentives that would compel companies to start worksite programs, such as an award at the annual Governor's conference. Identify means to put incentives into practice.

West Virginia Perinatal Partnership - 2007
Final Report and Recommendations

Committee on Breastfeeding Support and Promotion

Committee Chair: *Cinny Kittle, MS, West Virginia Hospital Association*
Members:
Kathy Bailey RN, IBCLC, Raleigh General Hospital
Mary Boyd MD, Breastfeeding Coordinator American Academy of Pediatrics, WV Chapter
Mary Caldwell, IBCLC, Valley Health, Inc., WV WIC
Paula Darby, RN, First Care Services, Right From The Start
Kathy Dittmar RN, Maternity/Newborn Nursing Director Reynolds Memorial Hospital
Brenda Johnson, RN, First Care Services, RCC Right From the Start
Barbara Lott, RN, Children's Home Society, RCC Right From The Start
Jenny Morris IBCLC, RLC, Valley Health, Inc., WV WIC
Jamie Peden, RN, IBCLC, CAMC Womens and Children's Hospital
Molly Scarborough RN, BSN, IBCLC, RNC, CCE, CPST, Greenbrier Valley Medical Center
Stephanie Whitney CLC, Breastfeeding Coordinator WVDHHR WIC
Committee Staff: *Cinny Kittle, MS, West Virginia Hospital Association*

DESCRIPTION OF THE PROBLEM

Although much is known about the benefits of breastfeeding, for both the baby and the mother, breastfeeding rates in West Virginia are well below the national average. Several factors have been identified as possible reasons for the lower than average breastfeeding rates in West Virginia, including cultural and professional bias against breastfeeding, intense marketing of infant formula, lack of breastfeeding education and support services, lack of support at the worksite for breastfeeding mothers, and concerns related to social acceptability of breastfeeding in public.

ACCOMPLISHMENTS TO DATE

.

Several recommendations were made by this committee and progress has been made on the following recommendations.

Policy Recommendation 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. Amy Tolliver, with the West Virginia State Medical Association, along with the West Virginia Hospital Association and several other organizations and individuals, worked with members of the legislature to educate them about issues related to breastfeeding in West Virginia. The state Legislature passed legislation, HB 2498, which ensures that breastfeeding is not considered indecent exposure.

Policy Recommendation 5: The state Legislature should consider offering a tax credit to employers who support breastfeeding employees. An initial survey was distributed to business members of the Wellness Council of West Virginia, to assess the level of support for breastfeeding at the worksite. There were no responses to the survey, and there is very little evidence that worksites provide such support in an organized, documented way. Worksite perinatal health issues were addressed at the 2007 Governor's Conference on Worksite Wellness in a general session focusing on a March of Dimes worksite program and in a break-out session focusing specifically on worksite support of breastfeeding mothers.

Policy Recommendation 1: Every hospital that routinely delivers babies should offer lactation consulting and monthly breastfeeding education classes for expectant parents; Policy Recommendation 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; and Policy Recommendation 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. The Senate Health Committee developed a plan to fund training in lactation education for hospital nurses and others. The plan was designed in collaboration with the Perinatal Partnership Committee to Promote and Support Breastfeeding. Leaders on this issue were Senator Roman Prezioso, Chair, and Jeff Johnson, legal counsel for the Senate Health Committee. As a result, $20,000 was directed to the WIC budget to fund this training and a contract was established with the West Virginia Hospital Association to implement the plan. The training was held November 5-9, 2007, in Charleston with 76 hospital nurses, WIC counselors and other healthcare providers successfully completing the course. All of these participants received 45 hours of continuing education and LCERPS and had the option of receiving certification as

Certified Lactation Specialists upon passage of an exam. This training also fulfilled the didactic requirements to become certified by the International Board of Lactation Consultant Examiners and meets continuing education requirements for those currently certified by IBCLE

RECOMMENDATIONS FOR 2008:

- Establish a network of obstetrical staff from West Virginia hospitals that routinely deliver babies to facilitate communication among staff, identify continuing education needs and resources, and promote collaboration on issues to support and promote breastfeeding in West Virginia.
- Encourage and support hospitals that offer obstetrical and neo-natal care to follow recommendations of AAP, ACOG and AWONN and establish and implement policies and protocols to encourage and support breastfeeding for both medically high-risk infants and normal newborns.
- Work with current and future projects that are focusing on prevention of childhood obesity to promote breastfeeding as part of the prevention efforts.
- Establish a statewide breastfeeding coalition of healthcare professionals, public and private agencies and organizations and community members to educate and advocate for breastfeeding issues.

West Virginia Perinatal Partnership - 2007
Final Report and Recommendations

Committee to Reduce Exposure to Tobacco Smoke During Pregnancy

Committee Staff:
Cinny Kittle, MS, West Virginia Hospital Association

Contributors:
Dan Christy, MS, Director, Health Statistics Center, WVDHHR
Tom Light, BA, Data Manager, Health Statistics Center, WVDHHR

DESCRIPTION OF THE PROBLEM

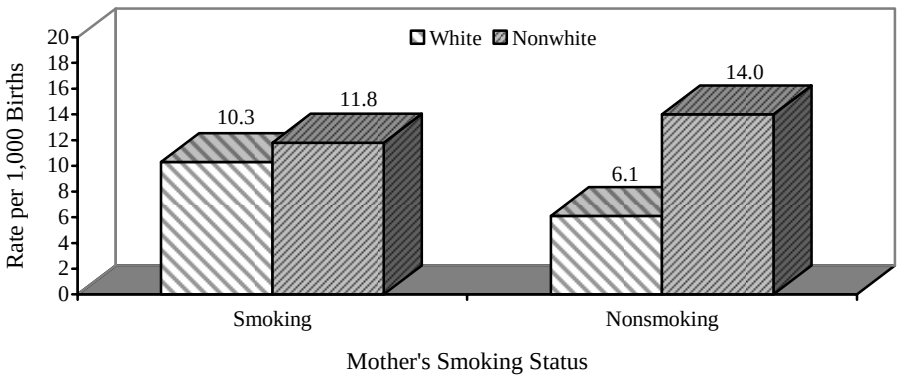
West Virginia has the highest smoking rate among pregnant women (27.3 percent) in the United States, nearly triple the national rate (just under 10 percent). Smoking during pregnancy increases the risks for low birth-weight, preterm deliveries, and infant mortality as well as SIDS. Nationally, smoking among pregnant women is declining, but West Virginia reports the second lowest rate of decline, only 5.8 percent over the 12-year period measured (1990-2002). West Virginia's rate actually increased from 26.7 percent in 2005 to 27.3 percent in 2006.

In addition to concerns about smoking during pregnancy, exposure of infants and children to secondhand cigarette smoke is a major problem. Again, with the high rates of smoking among women of childbearing age and the adult population in general, many children are exposed. The U.S. Surgeon General has confirmed that this exposure is a major health risk for infants and children.

Efforts have been made to address these problems in West Virginia. However, much more needs to be done. We must accomplish significant improvements by addressing this problem because it so seriously affects our babies, families and society.

During 2007 the WVDHHR, Health Statistics Center completed an in-depth look at WV birth and death records to more closely study the effects of the State's high rate of tobacco use on perinatal outcomes. The results show that if we are to reduce infant mortality and morbidity we must aggressively address tobacco use.

Infant Mortality Rate by Mother's Smoking Status
West Virginia Resident Births, 2003-2005



The figure above, taken from the Health Statistics Center report, shows that infants of mothers who smoke are more likely to die in the first year of life. The infant mortality rate for babies of white mothers who smoke is 10.3 per 1,000 live births, 69 percent higher than the 6.1 rate for nonsmoking white mothers. Interestingly for black and other races, the infant mortality rate for infants of mothers who did not smoke is 14.0 compared with 11.8 for those born to mothers who did smoke, a 19 percent difference in rates.

West Virginia Vital Statistics data demonstrates that the percentage of smoking among West Virginia women whose births were Medicaid-funded has remained steady with an average of about 41 percent from 1998 - 2005.

ACCOMPLISHMENTS TO DATE

Several recommendations were made and progress has been made on the following recommendations.

Policy Recommendation: Expand the West Virginia Quitline free tobacco cessation services to all pregnant women and those who live in the same household as pregnant women. This recommendation has been accomplished by the West Virginia Bureau for Public Health, Division of Tobacco Prevention. All pregnant women and those who live with pregnant women are eligible for these free services.

Policy Recommendation: All hospitals, birth centers, physician's offices and clinic facilities should establish and enforce tobacco-free campus policies, supported by education and cessation programs and referral. The West Virginia Hospital Association has launched a Tobacco-Free Hospital Initiative, supported in large part by a grant from the West Virginia Bureau for Public Health, Division of Tobacco Prevention. An online toolkit, containing various resources for hospitals and other healthcare facilities, is available at www.wvha.org as part of this initiative.

In addition to these accomplishments, the West Virginia Bureau for Public Health, Division of Tobacco Prevention (DTP) has launched a statewide media campaign related to smoking cessation for pregnant women. The DTP is also working with the West Virginia Hospital Association Day One program to produce and distribute a parent education DVD addressing the issue of exposure of infants and children to secondhand tobacco smoke.

RECOMMENDATIONS FOR 2008:

- Establish a committee of the Perinatal Partnership to conduct research related to what other states have done to make significant reductions in smoking among pregnant women and women of childbearing age, and further develop the plan to address this issue in West Virginia.
- The West Virginia Legislature should adequately fund a statewide, comprehensive tobacco prevention program at no less than the Centers for Disease Control and Prevention minimum set for West Virginia (currently $28 million).
- Establish a workgroup to collaborate to assure all providers of obstetrical and newborn services are knowledgeable in, and have resources to utilize the guidelines established by the Agency for Health Research and Quality (AHRQ) for smoking cessation and counseling and treatment, which could include pharmacological adjuncts, with all pregnant women and parents.