VIRGINIA FETAL AND INFANT MORTALITY REVIEW 1997–2003:
STEPS TOWARD IMPROVED PERINATAL HEALTH

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April 2007
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## Table of Contents

- Introduction .......................................................................................................................... 2
- Scope of Fetal and Infant Mortality in Virginia ................................................................. 5
- History of FIMR in Virginia .............................................................................................. 9

- Introduction to Regional Summaries .................................................................................. 13
  - Perinatal Region I – Southwest Virginia Perinatal Council ........................................ 14
  - Perinatal Region II – Blue Ridge Perinatal Council ................................................. 22
  - Perinatal Region III – South Central Perinatal Council ........................................... 29
  - Perinatal Region IV – Skyline Region Perinatal Council ........................................... 38
  - Perinatal Region V – Northern Virginia Perinatal Council ....................................... 43
  - Perinatal Region VI – Central Commonwealth Perinatal Council ............................. 49
  - Perinatal Region VII – Eastern Virginia Perinatal Council ........................................ 55

- Conclusion ......................................................................................................................... 65
- References .......................................................................................................................... 67
- Appendices .......................................................................................................................... 69
Introduction

Infant mortality—the death of an infant before his or her first birthday—is a long-established measure of the health of a community. In 1911, Sir Arthur Newsholme noted, “Infant mortality is the most sensitive index we possess of sanitary administration and of social welfare” (Brosco, 1999). Infant mortality was first recognized as a social and economic issue at the 1861 meeting of the National Society for the Promotion of Social Science (Holt, 1913). More than half a century later, in his address before the American Association for the Study and Prevention of Infant Mortality, held in Washington, DC, Dr. L. Emmett Holt (1913) stated, “The problem of infant mortality is one of the great social and economic problems of our day. No resources of the State need so much to be conserved as do its children” (first section, para. 2).

In the mid-1990s, the Virginia Department of Health (VDH) explored various methods to examine infant mortality in the Commonwealth. The Fetal and Infant Mortality Review (FIMR) process was already successful in Norfolk, Virginia. Therefore, in 1997, VDH contracted with the Commonwealth’s seven regional perinatal councils to begin the establishment of statewide, regional FIMRs. The report presented here provides an historical examination of the regional FIMR process from 1997–2003.

The infant mortality rate is calculated by dividing the number of infant deaths by the number of live births times 1,000. The rate reflects not only the standard of living in the community but also the health of mothers in the community. Factors such as socioeconomic conditions, public-health practices, and the quality of and access to medical care impact the infant mortality rate (MacDorman et al., 1994).

In the 1980s, a U.S. study group that examined national low-birth-weight rates recommended developing new methods to capture data in a timely and relevant fashion in order to comprehend the various factors associated with poor infant-health outcomes at the local level (Hutchins, Grason, & Handler, 2004). In response, the Maternal and Child Health Bureau first proposed the “Fetal and Infant Mortality Review” in 1988. In 1990, a collaborative effort between the Maternal and Child Health Bureau and the American College of Obstetricians and Gynecologists established the National FIMR Program. The program was designed to provide direction for community-based FIMRs and promote the FIMR methodology. Seven local initiatives in the United States were funded from 1991–1993, with additional funding from public and private sectors such as the Centers for Disease Control and Prevention, the Maternal and Child Health Bureau, the March of Dimes Birth Defects Foundation, and Carnation Nutritional Products.
One of the nation’s first seven, local, FIMR initiatives was the Eastern Region Fetal and Infant Mortality Review Pilot Project in Norfolk, VA. Sponsored by a local perinatal study group and with additional financial support and cooperation from Eastern Virginia Medical School, Sentara Norfolk General Hospital, and the Children’s Hospital of The King’s Daughters, the pilot project reviewed 40 cases of fetal and infant deaths in Norfolk. The project generated strong interest in establishing an ongoing FIMR program in the area, which continues today under the auspices of the Eastern Virginia Perinatal Council.

In 1980, improvements to the Commonwealth’s perinatal health-care system began when the Virginia General Assembly’s Code of Virginia authorized the Perinatal Services Advisory Board to develop the first Statewide Perinatal Services Plan. Subsequently, in 1983, the Perinatal Services Advisory Board not only issued recommendations for improving Virginia’s system of providing perinatal health care but also identified seven regions by using information about the concentration of births across the Commonwealth. The board revised the Statewide Perinatal Services Plan in 1988 and included specific health-care responsibilities for each of the regional perinatal centers. In 1990, the division of Maternal and Child Health—through a recommendation from the Perinatal Services Advisory Board—awarded a contract to the National Perinatal Information Center to study the effectiveness of perinatal regionalization. The center’s primary recommendation was the formation of regional perinatal councils in Virginia.

In 1992–1993, the VDH used funds from the Maternal and Child Health Block Grant (Title V) to establish a regional perinatal coordinating council (RPCC) in each of the Commonwealth’s seven perinatal regions (see appendix A). The purpose was to create a collaborative network among providers of perinatal services with the goal of providing risk-appropriate care to all perinatal clients in Virginia. The long-term responsibility of each RPCC was to decide how each region would address issues and problems such as access to care, perinatal education, collection and analysis of data, and identification of potential resources. During their first year, the RPCCs completed a needs assessment, and, at a state-level meeting of lead agencies, officials identified infant mortality as an issue requiring statewide attention. In 1996, the regional perinatal coordinating councils were renamed the “regional perinatal councils” (RPCs). The RPCs were required to devise a plan to incorporate the FIMR program in a self-selected area in their region and to begin the program in 1997. Approximately, 20 FIMR case reviews were to be conducted annually at each site. In fall 1997, Virginia initiated a Healthy Start grant that included nine additional sites. The Healthy Start grant which is named Loving Steps, is a comprehensive community based program using various health care professionals to provide care management and care coordination for pregnant and interconception women. Healthy Start funds were utilized to establish the FIMR sites, develop a statewide database, and implement a FIMR evaluation plan. Because laws and regulations relevant to the process of fetal and infant mortality reviews are found in state statutes rather than local or federal law, the Virginia Assistant Attorney General was consulted to address issues such as confidentiality, disclosure, and liability. Officials concluded that FIMR is a cooperative, contractual enterprise of the Commonwealth with
RPCs for the purpose of conducting the investigation and study of fetal and infant death. Officials further concluded that fetal and infant deaths are matters of public health importance for determining the health status of a community.

Modeled on the National FIMR Program, the Virginia FIMR Program is a community-based process that begins when a fetal or infant death occurs. Data (e.g., death certificate information and medical records related to the pregnancy, as well as pediatric records, if available) are collected and abstracted following the National FIMR Program guidelines. All identifying information is removed during the abstraction. Using a standardized interview tool during a home visit, a trained professional records the mother’s experience with community resources and care received during the prenatal, intrapartum, and postnatal periods. Mothers are also referred to appropriate support groups and/or community resources if such a need is identified during the home visit.

Individual cases of fetal and infant mortality are abstracted from the records and reviewed by a multidisciplinary team of experts—the case review team (CRT)—drawn from the community. Examples of professions represented on the CRT may include pediatrician, obstetrician, neonatologist, medical examiner, FIMR abstractor/home visitor, hospital social worker, public health nurse, neonatal transport nurse, hospital nurse managers from labor/delivery and antepartum/postpartum units, nutritionist, Medicaid representative, and social services representative. The CRT considers each case from a broad-systems perspective with particular attention to any gaps in services that may have affected the outcome or improved the quality of life for each family. Based on its reviews of multiple cases, the CRT makes recommendations for improving the community’s system of care for women, infants, and families. The team gives its recommendations to the RPCs or, in some localities, to a community action team. The consortium members implement FIMR-driven initiatives in the community in order to facilitate change.

As summarized by Koontz, Buckley, and Ruderman (2004), key FIMR concepts are the following:

- Systematic evaluation of individual cases (case review).
- Identification of a broad range of factors contributing to adverse outcomes (environmental, system, socioeconomic).
- Inclusion of information not available through routine quantitative methods such as the interview with the mother.
- Cases viewed as sentinel events illustrating system and resource issues.
- Avoidance of preventable/nonpreventable classifications of death because the intent of the case review is to identify opportunities for change.
- Avoidance of blame (anonymous cases and confidential process, explicitly not a medical audit, examination of associated factors rather than causes).
- Population-oriented focusing on a specific geographic area.
- Two-tiered process that promotes separate teams being responsible for the analytic function and the action function.
- Multidisciplinary involvement not only with health professionals but also with various community partners.
• Promotion of joint sponsorship by medical society and health department to bolster physician and community support while maintaining a public health perspective.
• Adaptability to varying local conditions and resources.
• Complementary method to other maternal child health improvement methods. Integral components of an ongoing needs assessment, program planning, implementation, and evaluation cycle, which are essential functions in public health practice.

Scope of Fetal and Infant Mortality in Virginia

With the exception of the Year 2000, infant mortality in Virginia has consistently been higher than the national average (see Table 1 and Figure 1). The Healthy People 2010 national objective is to reduce infant mortality to 4.5 deaths per 1,000 live births plus fetal deaths (U.S. Department of Health and Human Services [USDHHS], 2000, 2005); thus, there is much work to be done in Virginia. As noted in the June 10, 2005, issue of the Morbidity and Mortality Weekly Report, “Reducing the overall IMR [infant mortality rate] in the United States is consistent with the first overarching goal of Healthy People 2010, which is to increase the years and quality of healthy life” (Centers for Disease Control and Prevention, 2005, Editorial Note section, para. 1).

<table>
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<td>6.85</td>
</tr>
</tbody>
</table>

Sources: Virginia Center for Health Statistics and National Center for Health Statistics
Racial Disparities

Racial disparities in Virginia are evident in the state’s infant mortality rates (see Figure 2), a trend that mirrors a similar disparity throughout the country. The *National Healthcare Disparities Report* (Agency for Healthcare Research and Quality, 2003) notes that Black infants, during their first year of life, are more likely to die than non-Hispanic White infants. Nationally and in Virginia African-American babies are twice as likely to die of SIDS (National Institute of Child Health and Human Development, 2005; VDH, Health Statistics, 2005). One of the main goals of *Healthy People 2010* is to eliminate health-care disparities among ethnic and racial groups (USDHHS, 2000).
Health disparities are an enormously complex issue. The USDHHS (2003) examined the access, use, and patient experience of care according to racial, ethnic, socioeconomic, and geographic groups. Factors identified with health disparities include genetic predisposition, local environmental conditions, lifestyle choices, care-seeking behavior shaped by cultural beliefs, linguistic barriers, degree of trust, availability of care (not only with payment but also with location), management, delivery of care, and health-care practitioner beliefs. Increasing trends, such as the widening gaps in income and the more rapid pace at which some racial and ethnic minorities are growing, present a challenge for policymakers and the health-care system.

**Fetal Death**

The World Health Organization, the United Nations, and the National Center for Health Statistics define fetal death as

*death before the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.*

*For statistical purposes, fetal deaths are classified according to gestational age. A death that occurs at 20 or more weeks gestation constitutes a fetal death....* (National Center for Health Statistics, 2007, para. 1 and 2)
As Gaudino and colleagues (1994) state, “Whether measured by numbers or the anguish of affected families, fetal deaths are an important public health concern” (p. 163). The researchers identify three goals for the surveillance of fetal death data. The first goal is to monitor progress towards preventing pregnancy losses. The second goal is to collect fetal death data, birth data, and neonatal death data, which the researchers claim “will provide a more complete picture of pregnancy outcomes and their risks” (p. 164). Gaudino and associates continue, “Because some etiologies cause both fetal and neonatal deaths, the evaluation of interventions targeted at these etiologies must be based on the surveillance of all perinatal deaths” (Gaudino, et al, 1994 p. 164). The final goal of data collection is to assemble information “that will provide a sensitive enough pregnancy health indicator to allow more timely assessments of prevention efforts” (Gaudino, et al, 1994 p. 164).

The Healthy People 2010 national goal for fetal deaths is 4.1 deaths per 1,000 live births plus fetal deaths (USDHHS, 2000). Overall, Virginia rates fare better than nationwide rates as a whole (see Figure 3); however, the Commonwealth has not yet reached the national goal for fetal deaths. (see Appendix B)
mortality rate for Virginia was 7.2 per 1,000 perinatal base rates. In the same year, 662 perinatal deaths occurred, down from 741 in 1993. As reported in a follow-up report, “Perinatal Under Served Areas in Virginia, 2003,” the perinatal mortality rate during the 5-year period of 1996–2000, was 6.9 per 1,000 perinatal base rates (VDH, 2003).

In both reports on underserved populations, perinatal mortality rates reflected racial disparities in many areas throughout Virginia. In 2000, the perinatal mortality rate among African Americans (10.2) remained double the rate recorded for Whites (5.1). African Americans accounted for 37.1 percent of all perinatal deaths in 2000. From 1993-1997 decreases in perinatal mortality rates occurred for both African Americans and Whites. Among Blacks, the rate fell from 13.3 to 10.2. Whites recorded a smaller drop from 5.5 to 5.0 perinatal deaths among all other races have remained relatively low (VDH, 2003).

The *Healthy People 2010* national goal for perinatal deaths is 4.5 deaths per 1,000 live births plus fetal deaths (USDHHS, 2000). Virginia’s perinatal mortality rates vary among the perinatal regions and likely may not meet the national goal (see Table 4).

<table>
<thead>
<tr>
<th>Year</th>
<th>Region I</th>
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<td>4.5</td>
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<td>7.6</td>
<td>5.1</td>
<td>7.3</td>
<td>9.1</td>
</tr>
<tr>
<td>2003</td>
<td>6.2</td>
<td>9.3</td>
<td>8.2</td>
<td>6.5</td>
<td>5.9</td>
<td>7.3</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Source: Virginia Center for Health Statistics

**History of FIMR in Virginia**

On July 1, 1996, coordinators from each of the seven RPCs began laying the groundwork to initiate a pilot FIMR program in one city or area within their region during the 1996–1997 fiscal year. Prior to the contract requirement, RPC staff received training and opportunities to learn about the FIMR process and how to implement the program in their communities. A timeline for the first-year plan was the primary tool used for evaluation. By 1998, each of the seven RPCs initiated a FIMR project. Funds from the Virginia Healthy Start Initiative (VHSI) were used to expand the FIMR program statewide by 1999, and nine Healthy Start sites were added for a total of 16 FIMR locations. Healthy Start funded a statewide FIMR coordinator and funding for medical consultation.
Challenges in the First Years

During 1998–1999, the Virginia FIMR Program faced funding challenges that required emergency actions. As mentioned above, VDH officials requested funding from the VHSI to establish FIMR projects in nine target sites. The sites were four urban areas (Alexandria, Norfolk, Petersburg, and Portsmouth), two small towns in the Alleghany County area (Clifton Forge and Covington), one small town, Danville, in Pittsylvania County and two rural areas (Mecklenburg County and Westmoreland County). The VDH intended to use the VHSI funds to supplement existing FIMR efforts being established in each perinatal region. VDH staff clearly communicated their intent and vision in the initial VHSI funding application, as well as during a site visit with National Healthy Start Association staff. However, on June 16, 1998, VDH officials received notification that major changes had to be implemented immediately to bring Virginia’s project in compliance with the National Healthy Start Association’s guidelines. All activities funded by Healthy Start monies had to occur in the nine target sites; no statewide focus was permissible, and personnel funding was similarly limited to employees at the target sites. Regions I, III, IV, and V did not have VHSI target sites and, so, could not receive VHSI funds to establish FIMR projects. Without supplemental funding from VHSI, FIMR coordinators would be terminated August 31, 1998. A proposal submitted to the Maternal and Child Health Block Grant (Title V) was accepted to provide emergency funding for FIMR coordinators until other arrangements could be made.

VDH Division of Women’s and Infants’ Health submitted a revised grant proposal and budget for Year 02 (1999–2000) of the VHSI. Their modifications recommended that the FIMR sites in Regions I, III, IV, and V be designated as comparison sites and responsible for providing data for assessment purposes to the VHSI FIMR sites. The proposal was approved but not funded. In winter 2002, while closing out two Healthy Start grants that covered nine sites, VDH received notification that the FIMR project could continue with reduced VHSI funding in four sites. Several key staff members had already found other employment, and services had been shut down in six sites. The remaining programs had stopped taking referrals in fall 2001. The VHSI grant’s first funding year was only a 10-month period (April 1, 2002, to January 31, 2003) because the previous no-cost extension of Healthy Start grant funding did not end until March 31, 2002. Staff members in the nontargeted perinatal regions were terminated or reassigned.

Accomplishments in the First Years

Although the Virginia FIMR Program faced an array of challenges in its first years, the program also achieved numerous accomplishments during 1998–1999. For example, legal concerns and issues were evaluated in order to establish and maximize confidentiality practices and procedures. Officials examined confidentiality barriers regarding early-case identification with national and statewide vital statistics. A memorandum of agreement between the VDH Office of Family Health Services and the Virginia Center for Health Statistics provided a systemic method for early-case identification throughout the state. All FIMR sites followed outlined practices and
procedures to assure optimal protection of confidential information. Each FIMR site
developed a pamphlet for hospitals to provide to mothers who suffered a perinatal loss.
Pamphlet distribution served as a legal notice and enabled FIMR staff to share data with
members of the case review teams. A letter signed by the Virginia State Health
Commissioner in May 1998 confirmed the FIMR coordinators’ legal access to
information in hospitals and private physician offices.

Other successful efforts included overcoming barriers that prevented the initial
implementation of the FIMR process. One such obstacle included cumbersome hiring
policies at both regional and state levels, which delayed the hiring of FIMR coordinators.
Additionally, despite FIMR outreach activities, health-care professionals had an unclear
perception of the program’s process. Some professionals feared liability if they
participated in the process. Others, especially hospital administrators, considered the
FIMR program to be research, as opposed to public-health surveillance, and demanded
institutional review board approval. Their misconception had the potential to affect the
interest and support for the program among all audiences, including bereaved parents.
The program’s promotional materials already in use were clearly not working; thus,
strategies were developed to clarify the need for, the benefits of, and the mission of the
FIMR program in Virginia.

Several tactics were used to improve public and professional awareness of the
program. A public relations firm was enlisted to develop a FIMR logo that was
consistently applied to all communication materials (e.g., business cards, letterheads,
FIMR Program in Virginia*, was developed to explain the mission, process, and benefits
of the program and to inspire a specific call to action. All FIMR sites used the pamphlet
in a statewide effort to market professionals through mass mailings or face-to-face
distribution. A display board was also developed to reinforce the pamphlet’s message and
target larger venues such as professional conferences and health fairs. Additionally, a
Virginia FIMR Program fact sheet was created and used statewide to disseminate
information to the general public about the FIMR mission. All of these efforts helped
educate professionals about FIMR but funds have not been available to continue
supporting the updating and printing of these materials. Therefore, they are not currently
available.

Educating FIMR program participants and personnel represented another
accomplishment during the project’s initial start-up period. The statewide FIMR
coordinator conducted a 2-day training session for 56 representatives from throughout the
state. With FIMR in various stages of development, the educational focus of the training
session was to familiarize participants with essential FIMR components, offer system-
building techniques for disparate groups, and provide a forum for discussing key issues.
The second day of the training session was devoted to instructing FIMR personnel on
data entry procedures using National FMIR Program software.
Establishing Guidelines and Goals

The planning phase for FIMR began in 1997, while the implementation phase of the Virginia FIMR model started in 1998. One of the first important planning efforts addressed standardization. For the year 1997–1998, the FIMR medical director and VHSI evaluator deemed it necessary to standardize the FIMR data-collection process. Thus, in 1997, seven criteria were established: 1) case selection (fetal or infant); 2) completion of home interview; 3) medical record abstraction; 4) identification of origin and date of case; 5) completion of case review; 6) completion of community action team review; and 7) evaluation of implemented recommendations.

In standardizing criteria for FIMR data collection, critical factors also had to be identified to enhance the process. Therefore, the following guidelines were initially established for all FIMR sites:

- **Study period.** Deaths that have occurred from January 1, 1998, and beyond will be selected for case review and data collection. If for any reason the review process cannot be completed, then the next death by occurrence will be selected.
- **Period of focus.** Fetal deaths 20 weeks gestation or more and infant deaths up to 1 year of age will be selected for review.
- **Number of cases.** All (100%) of the deaths that occur during this study period and meet case selection definition criteria will be reviewed. This applies to RPCs I, II, III, and IV. RPCs V, VI, and VII will have larger numbers and are required to examine a minimum of four deaths per month. One fetal and three infant deaths are to be randomly selected.
- **Case reviews.** All case reviews will gather information utilizing the American College of Obstetrician and Gynecologists’ medical record abstraction, home interview tools, and National FIMR Program software for data entry. Cases for evaluation will be those that have both a medical record abstraction and a home interview completed.

In addition to standardized data-collection criteria and established guidelines, goals and strategies were developed for Year 02 (1998–1999) of the VHSI. Thus, the following plans were identified for that year’s implementation of the FIMR program in Virginia:

- Develop a FIMR procedure manual.
- Develop a parent brochure.
- Develop a bereavement packet/support service guide for distribution by hospital staff and health-care providers.
- Provide culturally appropriate training for FIMR personnel.
- Create an improved data set for the low-birth-weight and congenital-anomaly review process.
- Encourage all FIMR coordinators to attend a FIMR computer workshop.
- Utilize the Microsoft® Access program, use the database tool developed by the FIMR state coordinator’s office to track FIMR implementation activities and actions by the community action teams.
• Arrange for the FIMR state coordinator to assume some of the FIMR program manager’s duties.

Limitations

In compiling information for this document, one limitation was the lack of consistent reporting by the RPCs on FIMR activities outlined in the model. Following the turnover of three FIMR state coordinators within a short period of time, the position was eliminated, and all FIMR responsibilities were allocated to the Virginia State Perinatal Nurse Consultant, a role that was, itself, vacant for 4 years. The FIMR medical director position was not funded. In addition, a turnover of RPC and regional FIMR staff led to incomplete or missing reports for some years and formats that varied from year to year. Information regarding follow up of recommendations is rarely specific, with missing beginning and ending dates. Systematic collection of data did not occur until 2001, when a statewide FIMR database was developed in Microsoft® Access. In August 2006, all FIMR data was transitioned into the Healthy Start web-based database. Previous cases including all chart abstraction information was entered into this database. Currently, FIMR data entry is ongoing and is also integrated into the RPC quarterly reports. However, gaps are still present in the reports, making evaluation of the interventions impossible. The limited and inconsistent methodology for collection of data, in addition to the fact that some localities collected only 1 year’s worth of data and others compiled raw numbers, makes it difficult to provide a detailed historical account of the FIMR process in Virginia. Because the reporting had not been standardized by VDH, there will be inconsistencies over the years and across regions as to what constituted an issue versus a recommendation or accomplishment. These terms are now more consistently being used in the web-based database.

Introduction to Regional Summaries

The Virginia FIMR Program is comprised of seven regions, each served by a regional perinatal council (RPC). Below, the history of each RPC is chronicled from 1997–2003. The history of each RPC is as diverse as the geographical region it serves.

In the following account, infant mortality rates and fetal death rates by perinatal region are not computed because FIMR does not encompass an entire region, only particular counties/cities. One must also note that changes in FIMR funding and staff turnover during a fiscal year affect the counties/cities served and the number of cases reviewed.
Perinatal Region I – Southwest Virginia Perinatal Council

Region I is served by the Southwest Virginia Regional Perinatal Council. This 4,500-square-mile rural area has high rates of poverty and unemployment. Coal mining and small manufacturing serve as the region’s economic base. Also, adult literacy is low in this area. It is the only region in Virginia without a high-level perinatal center, and some counties do not have any physicians who accept obstetrical patients. Along with the mountainous terrain and lack of transportation, access to health care is a significant issue.


FIMR co-coordinators noted that, compared to statewide statistics, Perinatal Region I had a long history of increased rates of congenital anomalies (see Appendix C). Rather than reviewing fetal infant deaths, the co-coordinators opted to modify the FIMR model for this region in order to review congenital anomalies. They reviewed statistics for the counties of Lee, Wise, and Dickenson and for the City of Norton (see Table 5).

Table 5. Perinatal Region I – Percent of Births with Congenital Anomalies, by County, City of Norton, and State of Virginia 1988–1993

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<tr>
<td>1989</td>
<td>3.3</td>
<td>3.2</td>
<td>4.3</td>
<td>3.4</td>
<td>1.7</td>
</tr>
<tr>
<td>1990</td>
<td>3.1</td>
<td>3.8</td>
<td>4.9</td>
<td>2.6</td>
<td>1.5</td>
</tr>
<tr>
<td>1991</td>
<td>1.7</td>
<td>2.9</td>
<td>4.7</td>
<td>4.4</td>
<td>1.5</td>
</tr>
<tr>
<td>1992</td>
<td>5.6</td>
<td>3.5</td>
<td>3.9</td>
<td>9.2</td>
<td>1.5</td>
</tr>
<tr>
<td>1993</td>
<td>4.7</td>
<td>2.2</td>
<td>5.8</td>
<td>2.6</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Source: Virginia Center for Health Statistics

One of the FIMR co-coordinators asked the Virginia Center for Health Statistics to provide data according to specific anomalies in each of the four localities in Perinatal Region I and in the state. The anomalies were coded using the International Classification of Diseases, Ninth Revision, published by the World Health Organization. Because significant changes occurred in reporting procedures between 1988 and 1989, only the years 1989–1992 were included in the analysis (see Table 6). The following table was the result of those calculations by Region 1 staff.
Table 6. Perinatal Region I – Congenital Anomalies with the Largest Locality-to-State Ratio, as Reported by the FIMR Project 1989–1992

<table>
<thead>
<tr>
<th>Congenital Anomaly</th>
<th>Times (x) the State Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spina bifida with hydrocephalus and congenital hydrocephalus</td>
<td>7.44 x</td>
</tr>
<tr>
<td>Other deformities of feet</td>
<td>6.17x</td>
</tr>
<tr>
<td>Patent ductus arteriosus</td>
<td>5.57 x</td>
</tr>
<tr>
<td>Anomalies of abdominal wall</td>
<td>3.94 x</td>
</tr>
<tr>
<td>Unspecified anomaly of brain, spinal cord, and nervous system</td>
<td>3.94 x</td>
</tr>
<tr>
<td>Unspecified anomaly of urinary system</td>
<td>3.64 x</td>
</tr>
</tbody>
</table>

Source: Virginia Center for Health Statistics

Nearly all the cases of spina bifida and hydrocephalus occurred in Lee County. Cases of patent ductus arteriosus occurred in the City of Norton, Dickenson County, and Wise County. Unspecified heart anomalies, cleft palate and unspecified brain anomalies occurred in these same localities respectively.

Perinatal Region I coordinators developed a mission statement that included the development of a 2-year (1997–1999) congenital anomaly review using the FIMR model. Employing a systematic evaluation of individual cases, the purpose of the review was to identify and examine factors that contribute to significant congenital anomalies. The review would also examine whether families of children with congenital anomalies received early and appropriate services.

Goals: The objective of the 1997–1999 congenital anomaly review was to achieve the following goals:

- Gain insight regarding the factors contributing to a high incidence of congenital anomalies in the region.
- Develop recommendations that will improve birth outcomes in the local communities.
- Assess whether appropriate services are accessible to families of children with congenital anomalies.
- Develop recommendations to the local communities regarding any improvement in services to families of children with congenital anomalies.

Methodology—Case selection: All 1997 infant congenital anomaly cases within Lenowisco Health District (Lee, Dickenson, Wise, and Scott counties and the City of Norton) were to be reported to the review team. Cases considered negligible were to be reported but not reviewed. All other cases were to be reviewed. Most cases were identified by informal referrals from health professionals; few were identified through the traditional means of examining birth certificates or termination forms.
Review committees: Two teams of reviewers were recruited at different times: the Congenital Anomaly Review Team (CART) and the Community Action Team (CAT). In January 1997, members of the CART attended an orientation meeting. Their first review session was scheduled for June 1997, with a planned review of 4–6 cases. CART meetings were scheduled quarterly. Recruitment for CAT participants began after the completion of several quarterly CART meetings. Members of the RPC subcouncil served as the core CAT members.

Barriers and strategies: The summary progress report for 1996–1997 identifies three barriers to Perinatal Region I’s program development during this time period: 1) identification of cases, especially fetal deaths and congenital anomalies diagnosed after discharge from the newborn nursery; 2) recruitment of physicians to the CART; and 3) formation of the CAT. The planned strategies to overcome barriers included the following:

- Develop agreements with local hospitals to refer congenital anomaly cases.
- Contact pediatricians and family practitioners case referrals.
- Enlist the help of the VDH for case referrals.
- Obtain a FIMR/CAR letter of support from the Virginia State Health Commissioner.
- Ask local hospitals to recruit an obstetrician for the CART.
- Wait until a number of reviews is completed so recruitment of CAT members will be based on CART recommendations.

Accomplishments: Region I identified the following accomplishments attained during the first year of its FIMR program:

- Achieved an extensive revision of FIMR forms for purposes of congenital anomaly review.
- Created strong community interest in assessing the local congenital anomaly problem.
- Elicited commitment from every local hospital (including hospitals in Tennessee) to assist with chart abstraction.
- Obtained strong commitment from Lenowisco Health District.
- Introduced the congenital anomaly review process to local health professionals via the Region I RPC newsletter and education conference.

In 1997, Perinatal Region I also undertook the first steps of developing a public education campaign about the importance of folic acid. Funded by the March of Dimes, Carilion Roanoke Community Hospital, and the VDH, this multimedia campaign was selected as a national model by the Centers for Disease Control and Prevention during the summer of 1997. The program continued for a second year with a planned evaluation date.


According to their report dated September 16, 1998, Perinatal Region I reviewed 8 cases; however, no findings were documented. A CAT was to be assembled by 1999.
In that same report describes a new FIMR program in the Cumberland Plateau and Mt. Rogers health districts. Although systems were in place to assist with the identification of deaths and community support was excellent, the new program was a nontarget VHSI site. Funding was not available for a FIMR coordinator, so the future of FIMR was unclear. However, the review of congenital anomalies in the Lenowisco Health District would continue, as stated by the RPC contract with VDH.

The Virginia Healthy Start Initiative FIMR Program’s statewide annual report for September 1, 1999–August 31, 2000, notes how Perinatal Region I overcame obstacles since Year 01 of the VHSI. During that year, funding was needed to support FIMR activities. A part-time regional FIMR coordinator (funding source not specified) was hired in February 1999. The successful folic acid campaign, coupled with a vigorous marketing plan, yielded a $60,000 grant provided by the Carilion Community Health Fund. As a result, FIMR was established in Cumberland Plateau Health District and in Mt. Rogers Health District. A Community Review Team (CRT) and CAT were formed in each site and reviews were taking place. As of June 1999, the FIMR coordinator had logged in approximately 20 fetal and infant deaths in Cumberland Plateau Health District and 15 in Mt. Rogers Health District, which met the case selection criteria. Through its quality assurance process, which was not detailed, Perinatal Region I identified additional deaths, and its log stands at 36 for Cumberland Plateau Health District and 20 for Mt. Rogers Health District. The region successfully “processed” (the term was not defined) 19 of the referrals in the Cumberland Plateau Health District. Home interviews were completed on 12 cases: Four clients declined the interview, three were lost to follow up, four cases have been reviewed and one case is unaccounted for.

As noted in the statewide FIMR annual report for September 1, 1999–August 31, 2000, the major strength of the FIMR sites in the Cumberland Plateau and Mt. Rogers health districts were evident in the community and the FIMR/RPC leadership. Both health districts and their surrounding communities embraced the FIMR process, as evidenced by their infrastructure development of the process. Geography posed a challenge to the CRT and CAT members, but it did not impede momentum.

A regional FIMR celebration was held June 14, 1999, to highlight FIMR. It was well attended by stakeholders throughout the state and representatives of the public and private sectors. Speakers included the FIMR medical director and state coordinator.

Issues: In 1998–1999, Perinatal Region I identified the following community issues:

- Need for increased SIDS education.
- Lack of complete psychosocial and nutritional assessment related to prenatal care.
- Need for marketing of WIC services and other perinatal outreach services at the community level.
- Need for increased education in the schools on tobacco addiction and consequences.
Individual task forces were to work on strategies and interventions. These groups were to be formed by June 1999, and activities would be linked to the RPC.

Summary of Activities: 1999–2000

Perinatal Region I experienced a busy year in 1999–2000. Region II (Blue Ridge Perinatal Council) joined the CRT for Mt. Rogers Health District because both Region I and Region II serve half of the counties in the district. The FIMR teams readily initiated interventions with support from their CATs. The two regions’ joint efforts increased the number of case review (see Table 7).

| Table 7. Perinatal Region I – Summary of Activities from September 1, 1999–August 31, 2000 |
|---------------------------------|---------------------------------|---------------------------------|
| **Activity**                    | **Cumberland Plateau Health District** | **Mt. Rogers Health District** |
| Number of cases                 | 13 Infant                         | 12 Infant                       |
|                                 | 15 Fetal                          | 15 Fetal                        |
| Cases abstracted                | 13/year                           | 11/year                         |
|                                 | 2/quarter                         | 0/quarter                       |
| Cases with interviews           | 8/year                            | 8/year                          |
|                                 | 2/quarter                         | 2/quarter                       |
| CRT meetings                    | 6/year                            | 5/year                          |
| CAT meetings                    | 6/year                            | 6/year                          |
| Number of recommendations       | **Cumberland Plateau and Mt Rogers Health Districts** | 33 |
| Number of actions               | 27                                |

Summary of Activities: 2000–2001

No specific 2000–2001 summary was located for Perinatal Region I, although the region did submit a 3-year summary (1998–March 2001). By that time, 23 fetal and 29 infant deaths had been reviewed (52 total). Among the infant deaths, 48% were due to prematurity, 38% due to SIDS and 14% were due to congenital anomalies. Findings also indicated 41% of the mothers were single, 60% had annual incomes < $30,000, 48% were on Medicaid, and 64% of the mothers had a high school diploma or less.

Priorities: Perinatal Region I’s priorities for FIMR in Southwest Virginia were the following:
• Provide a model for community-wide review of fetal and infant mortality, with recommendations for improvement in the human and/or health-care systems, when applicable.
• Increase public and provider awareness of pertinent perinatal issues in the region.
• Preserve the voice of mothers who have suffered a perinatal loss and facilitate their bereavement process.

Recommendations: During this time period, Perinatal Region I developed the following strategies based on issues that emerged throughout the year:
• Increase public and professional awareness and education on risk factors associated with SIDS.
• Increase smoking-cessation programs available in the region and continue to promote public awareness of the dangers and risks associated with second-hand smoke and smoking during pregnancy.
• Increase public and professional awareness of available community resources and promote referrals, as needed.
• Increase use of nutrition and psychosocial assessments, documentation, and referrals, as appropriate.
• Continue to provide public awareness of the program, “Planning Ahead for Healthy Pregnancy.”

Accomplishments: Perinatal Region I identified the following accomplishments attained during 2000–2001:
• Hosted a statewide conference on SIDS (no date given in report) to update professionals on current research, death-scene investigation, and available educational resources.
• Provided scholarships to fund certification of 15 new counselors from the RTS (Resolve Through Sharing) Bereavement Program.
• Funded basic 911 system for Buchanan County.
• Obtained funds to distribute a year’s supply of folic acid to indigent childbearing women ages 15–24 years in the region.
• Established three district task forces to begin forming perinatal support groups.
• Developed “Breathe Easy Baby” (a smoking cessation program based on education and incentives targeted for pregnant women).

Summary of Activities: 2001–2002

No FIMR reports are on file until 2002. At that time, Perinatal Region I had three FIMR sites; however, an overlap of counties conducted case reviews.

In 2002–2003, three FIMR sites in Perinatal Region I conducted case reviews and follow-up measures (see Table 8).

### Table 8. Perinatal Region I – Summary of Activities from 2002–2003

<table>
<thead>
<tr>
<th>Activity</th>
<th>Site 1: Buchanan County Lee County</th>
<th>Site 2: Buchanan County Dickenson County Russell County</th>
<th>Site 3: Washington County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of review</td>
<td>1 Infant 3 Fetal</td>
<td>1 Infant 2 Fetal</td>
<td>4 Fetal</td>
</tr>
<tr>
<td>Type of case (low-birth-weight, congenital anomaly, other)</td>
<td>4 Other</td>
<td>3 Other</td>
<td>4 Other</td>
</tr>
<tr>
<td>Notification</td>
<td>2 Hospital 1 Obituary 1 Public health nurse</td>
<td>1 Obituary 1 Family member 1 Hospital</td>
<td>1 Family member 2 Hospital 1 RTS bereavement counselor</td>
</tr>
<tr>
<td>Chart abstraction completed</td>
<td>2 Yes</td>
<td>3 Yes</td>
<td>1 Yes</td>
</tr>
<tr>
<td>Home interview status</td>
<td>1 Completed 1 Refused</td>
<td>3 Completed</td>
<td>1 Completed 1 Refused</td>
</tr>
<tr>
<td>Number of cases reviewed</td>
<td>2 of 4</td>
<td>2 of 3</td>
<td>0 of 4</td>
</tr>
</tbody>
</table>

Among the cases addressed during this time period, two were not reviewed because they ended up in litigation (one for Site 2 and one for Site 3). Five cases were not reviewed due to lack of maternal interviews.

**Issues:** CRT members of Perinatal Region I identified the following issues and concerns:
- No documented risk, psychosocial, and/or nutritional assessments (3 reviews).
- No genetics referrals (3 reviews).
- Unanswered questions about medical history without maternal interview.
- Parents’ level of understanding of complex medical condition.
- Long travel time to Level III facility (2 reviews).
- Infant’s medications not available 24/7 at local pharmacies.
- No respite care for family.
- Unable to find local pediatric home health care.
• No referral to early intervention.
• Referring hospital not aware of baby’s death.
• Adolescent did not have information/education geared to her level.
• Mother did not recognize signs and symptoms of preterm labor (2 reviews).
• Short interconceptional period (2 months).
• Provider’s insensitive explanation of baby’s death.
• Antidepressant prescribed by provider other than the obstetrician after first miscarriage.

Recommendations: Perinatal Region 1 developed the following recommendations:
• Before the CRT examines any case, complete a maternal interview as part of the case review process.
• Conduct a survey of pediatric home health services in the area.
• Develop a directory of services for discharge planners.
• Genetic counseling (no specifics given).
• Develop a strategy to include pharmacy services in discharge planning.
• Discuss communication gaps and HIPPA regulations with perinatal centers.
• Individualize packets of educational materials by trimester for the mother’s age and specific risks.
• Provide information to pregnant teens and promote abstinence
• Develop psychosocial assessment documentation and education strategies about the signs and symptoms of preterm labor and the use of prescription drugs during pregnancy.

Accomplishments: Perinatal Region I proposed the following interventions, but documentation of the outcomes is not available:
• Host a meeting with perinatal centers to discuss communication issues.
• Develop a packet of educational materials to be given out by the health-care provider at the beginning of each trimester. Design inserts so the packet can become a “keepsake” binder. Individualize packets for multiple gestation, teens, etc. Create a checklist of “prompts” for information the patient should give the health-care provider, including medication.
• Work with Partners in Prevention (a VDH program geared toward young adults on the benefits of waiting until marriage to conceive a child) in countywide high schools.
• Continue the Breathe Easy Baby program, a smoking cessation program
Perinatal Region II is a primarily rural area located east of Region I and served by the Blue Ridge Perinatal Council. The region’s FIMR pilot sites were Henry and Patrick counties and the City of Martinsville. These localities were chosen due to their high infant and fetal mortality rates and a driving commitment by a local obstetrician to address the problem (see Table 9). The number of fetal and infant deaths are small ranging from none to up to 11 in one year. Therefore, examining infant deaths in one year can be misleading (see appendices D, E, and F).

Table 9. Perinatal Region II – Infant Mortality Rates (per 1,000 Live Births), by County, City of Martinsville, and State of Virginia 1989–1994

<table>
<thead>
<tr>
<th>Year</th>
<th>Henry County</th>
<th>Patrick County</th>
<th>City of Martinsville</th>
<th>State of Virginia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>5.2</td>
<td>12.0</td>
<td>7.9</td>
<td>10.0</td>
</tr>
<tr>
<td>1990</td>
<td>7.4</td>
<td>10.6</td>
<td>14.0</td>
<td>10.2</td>
</tr>
<tr>
<td>1991</td>
<td>15.3</td>
<td>10.8</td>
<td>13.9</td>
<td>10.0</td>
</tr>
<tr>
<td>1992</td>
<td>16.5</td>
<td>12.8</td>
<td>15.5</td>
<td>9.3</td>
</tr>
<tr>
<td>1993</td>
<td>6.3</td>
<td>26.3</td>
<td>9.5</td>
<td>8.6</td>
</tr>
<tr>
<td>1994</td>
<td>6.1</td>
<td>6.0</td>
<td>43.7</td>
<td>8.2</td>
</tr>
</tbody>
</table>

Source: Virginia Center for Health Statistics


In its original mission statement, Perinatal Region II identifies the Henry and Patrick counties’ FIMR program as a voluntary, community-based coalition of people and agencies committed to strengthening the system of perinatal health care and related services in Henry County, Patrick County, and the City of Martinsville. In order to achieve this goal, Perinatal Region II and its coalition members pledge to better understand the pattern and occurrence of fetal and infant deaths in their communities and to enhance the health and well-being of childbearing families by strengthening the healthcare system with accessible, community-wide, perinatal services.

Methodology—Case selection: All natural fetal deaths at 20 or more weeks gestation and all infant deaths to 1 year were to be reported. Identification of cases was solely through community-health professional referrals.

Maternal interview: A bereavement counselor or health professional with a previously established relationship with the mother would make the initial contact to request a FIMR interview. The preference of an initial face-to-face contact versus communication by letter is a priority of Perinatal Region II’s FIMR program. Before accepting the first FIMR case, the core FIMR planning group chose to develop region-wide bereavement policies, a referral system, and a resource list. Bereavement and FIMR-trained volunteer health professionals planned to conduct maternal interviews on a rotating basis.
Chart review: Hospital-based nurses in each locality received FIMR data-collection training and would abstract all in-house charts. The RPC coordinator or RPC outreach education coordinator would complete chart abstraction in other localities.

Review committees—Case review team: Core membership included the RPC II West Piedmont implementation group (17 individuals, primarily physicians and nurses). A geneticist, neonatologist, and perinatologist would be asked to serve on an as-needed basis. The first CRT meeting was scheduled for fall 1997, at which time frequency and location would be discussed.--- Community action team. This team was to be formed in spring 1998 after case reviews had begun. Due to the small number of expected fetal and infant deaths (23 per year), the region would proceed slowly in presenting data to the community. Presenting small numbers of cases as evidence for sweeping system-wide changes is not always appropriate nor was it the intent of the FIMR process. However, in some instances, action could be taken based on a single case (e.g., ensuring infants have car seats).

Barriers: The barriers to progress in Perinatal Region II’s FIMR program during this period included the following:

- The lack of local access to vital records, including fetal death reports.
- The need for a pediatrician on the case review team.
- The need for more active support from the local health department.
- The need for a letter of support from the Virginia State Health Commissioner to facilitate community-wide cooperation with FIMR.
- Potential community resistance to FIMR due to the low number of cases.
- The need for a state-standardized consent form, confidentiality forms, and policies for future expansion of FIMR to other sites.
- The need for FIMR data-collection software.

Recommendations: During this period, Perinatal Region II developed the following strategies to overcome the barriers identified above:

- Develop a system with the state vital statistics office in which a quarterly report of fetal and infant deaths for each FIMR site is sent to each region in Virginia (already in progress at the state level).
- Discuss issues with the local health department director and nurse manager.
- Network with a new Healthy Families coalition and invite representatives to serve on the community action team.
- Obtain a letter from the Virginia State Health Commissioner endorsing FIMR.
- At the Perinatal Region II spring conference, include a speaker whose expertise is implementing FIMR in rural communities.
- Ask the state FIMR coordinator to assemble information in 1997–1998.
- Ensure receipt of data-collection software provided by the National FIMR Program in July 1997.

Accomplishments: Perinatal Region II identified the following accomplishments of its FIMR program during 1997–1998:
• The region’s FIMR site was already community-owned, one of the key indicators for predicting a successful and lasting program.
• Representatives from hospitals in Martinsville and Patrick County met and agreed to use the same bereavement and bereavement-referral policies and procedures.
• The RPC outreach education coordinator began establishing a regional network of bereavement resources and grief counselors.
• Another nurse (position not identified) planned to approach regional psychiatric facilities and funeral home directors to include them in the FIMR bereavement network.
• A Resolve Through Sharing Bereavement Program training session was planned for the mid-June 1997 to benefit FIMR interviewers in neighboring RPC regions and in Perinatal Region II.
• FIMR policies, procedures, and timeline were completed.


In 1998–1999, Perinatal Region II continued with the Alleghany Highlands area as a component of Healthy Start. In response to a strong strategic plan for FIMR marketing and infrastructure development, the FIMR planning committee grew to 18 members and met on a monthly basis which was a positive accomplishment for a rural area. Other accomplishments for the year included the following:

• Drafted a FIMR policy and procedure manual, pending committee approval.
• Completed a Microsoft® PowerPoint marketing presentation of the FIMR process for the community.
• Developed a home interviewer guide for all interviewers.
• Developed a standardized recruitment letter for potential CAT members
• Developed a FIMR display board.
• Authored two articles for a local publication (“Stress and Pregnancy” and “Children and the Grief Process”).
• Served as a participant in a Human Services forum for the purpose of developing more medical/mental services for adults and children.
• Presented at the Virginia Infant Mortality Summit on “Men and Grief.”

A major barrier during the implementation phase was the refusal of both area obstetricians to participate in the CRT process due to liability concerns. Other members of the planning committee, particularly those affiliated with a hospital, limited their participation, although the commitment to the FIMR process remained.

To overcome this barrier, the state FIMR coordinator intervened after securing documentation from a variety of sources that included NFIMR, the Virginia State Attorney General’s office, the Virginia State Health Commissioner, and other FIMR programs across the country. This information, along with personal interactions with the committee members, resulted in a workable compromise. A regional CRT was formed, piggybacking the target site on to an existing rural FIMR program in the region. All key
stakeholders in RPC and FIMR leadership positions negotiated the FIMR restructuring plans. A 1-year trial period was agreed upon.

Summary of Activities: 1999–2000

The Virginia Healthy Start Initiative FIMR Program report for September 1, 1999–August 31, 2000 lists three sites for Perinatal Region II: the health districts of Alleghany, Mt. Rogers, and West Piedmont. Table 12 presents a summary of activities for the region’s three sites’ during this time period.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Alleghany Health District</th>
<th>Mt. Rogers Health District</th>
<th>West Piedmont Health District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases</td>
<td>3 Fetal</td>
<td>3 Fetal</td>
<td>12 Fetal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Infant</td>
<td>1 Infant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Unknown</td>
<td></td>
</tr>
<tr>
<td>Cases abstracted</td>
<td>2</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Cases with interviews</td>
<td>2</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>CRT meetings</td>
<td>2/year</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>CAT meetings</td>
<td>Pending</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Number of recommendations</td>
<td>18</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Number of actions</td>
<td>4</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

* Information not available

Barriers: One of the region’s successes during 1999–2000 included the concept of a regional team approach. Challenges included the resignation of the FIMR coordinator and the downsizing of one hospital due to financial problems, which made representation on FIMR difficult to secure.

Recommendations: Based on case reviews, Perinatal Region II developed the following recommendations:

- Educate hospitals about state laws pertaining to early discharge and follow-up service.
- Improve awareness of referrals, in general, and of referrals to Maternal and Infant Care Coordination programs and to Women, Infant, and Children programs.
- Determine hospital guidelines for social service referrals.
- Develop SIDS reduction strategies at the community level (education).
- Develop FIMR parent brochure in Spanish.
• Improve child death-scene investigations.
• Support local rural law enforcement in conducting thorough child death-scene investigations.
• Support law enforcement representation on local CATs.
• Improve the network of bereavement counseling services between Level 3 hospital and referring hospital, and stress the need for support group services.
• Devise a CRT letter to all hospitals recommending the following: 1) encourage crown-to-heel measurement as well as foot-length measurements in addition to weight; 2) encourage hospitals to conduct death examinations that include an evaluation of external malformations, which are beneficial for genetic counseling purposes; 3) prior to discharge, conduct a psychosocial assessment of patients in hospitals; 4) adopt a policy that requires patients who are 23 weeks or more gestation and admitted to emergency departments be seen by the attending physician in the labor and delivery department; 5) offer genetic counseling in cases of advanced maternal age and indicate on the chart documentation of outcome/refusal; 6) standardize fetal examination and placental status forms; and 7) document HIV test counseling to ensure informed consent.
• Promote the benefits of perinatal autopsies, obtain a better understanding of issues impacting the completion of autopsies for localities in the region, and recommend a source of funding.
• Establish evening operating hours for community services.
• Develop health-care provider and community education training about community resources and programs, including those within health departments.
• Six weeks after a loss, require that a physician provide a follow-up visit to include an education/counseling session with the parents(s) to explain their loss.
• Perform a drug screen for all fetal deaths.
• With respect to bereavement services, determine the current policies and practices in all hospitals in the region to include counseling, support groups, follow-up services, and referrals.

Accomplishments: During 1999–2000, Perinatal Region II carried out four community actions:
• Developed a FIMR brochure in Spanish and began to identify strategies to increase involvement of the Hispanic community in two FIMR locations.
• The FIMR chair and the Blue Ridge Perinatal Council staff continued to identify opportunities to conduct in-services with area OB/GYN and family practice physicians, as well as residents, in order to implement a strategy of physicians/nurse practitioners introducing patients to FIMR.
• The Preconceptional Health Promotion Campaign was started in Alleghany Highlands with a plan to expand into West Piedmont and Mt. Rogers (details of this campaign were not included in the report).
• Developed a collaborative project among FIMR, Blue Ridge Perinatal Council, Area Health Education Center, CAP(Community Action Planning)
American Lung Association, Tobacco Use and Control, and Cooperative Extension in Alleghany to implement a smoking-cessation project (the goal was to create a system of support for all women who are trying to establish and maintain a smoke-free environment during the perinatal period).


No other reports are available until 2002.


A 2002–2003 report prepared in the state’s FIMR Microsoft® Access database contains 348 entries for Perinatal Region II, which includes 65 cases that were fetal and infant deaths. Approximately 40 of these 65 cases did not qualify, due to gestation or the mother’s residence. About 220 cases were morbidity reviews that primarily examined low birth weight and included some congenital anomalies. In this report, no criteria for case reviews are available. Sites are identified by zip code, not by the location of the case review team or health district.

Of the 65 FIMR cases, there were 38 fetal deaths and 27 infant deaths. Notification was received primarily from the hospital (n = 53), perinatal center (n = 8), pediatrician (n = 1), health department (n = 1), SIDS coordinator (n = 1), and one unknown (n = 1). The 65 cases included 41 completed home interviews, 6 refusals, 14 unable to reach, 3 pending, and 1 unknown. Overall, 38 reviews were completed, 2 were pending, and the rest were not documented. In 2002, a new RPC coordinator was hired in the hope of reorganizing and rejuvenating the council. Additionally, a new FIMR coordinator started in 2003.

Recommendations: During this period, Perinatal Region II developed the following recommendations:

- Include efforts to increase folic acid awareness.
- Teach the signs and symptoms of preterm labor.
- Promote the importance of early prenatal care.
- Perform drugs screens for mothers with known substance abuse and a fetal demise.
- Encourage obstetric offices to use a checklist for prenatal education.
- Develop contraception education.
- Develop documentation of nutrition assessment.
- Encourage a preconception consult.
- Provide appropriate education with fertility treatments.

Interventions: The “Folic Acid Beauty Shop” project was the only intervention documented by Perinatal Region II (no start date was provided). Two beauty salons in New River Valley had stylists who were educated regarding the importance of folic acid. The salons also displayed posters and distributed brochures on folic acid. Additionally,
brochures were available in pharmacies, but the method of distribution and the number of pharmacies involved were not noted.
Perinatal Region III – South Central Perinatal Council

Perinatal Region III is served by the South Central Perinatal Council. This region selected the City of Lynchburg and Campbell County for its FIMR pilot sites, with plans to expand to the cities of Bedford and Danville. A local newspaper article on the high infant-mortality rate increased interest in FIMR development (see Tables 13 and 14). Centra Health, the corporate owner of Virginia Baptist Hospital in Lynchburg, took a lead role along with the region’s RPC to establish FIMR in this area.

Table 13. Perinatal Region III – Infant Mortality Rates (per 1,000 Live Births), by Health District, Cities of Bedford and Lynchburg, Counties, and State of Virginia 1994–1995

<table>
<thead>
<tr>
<th>Location</th>
<th>1994</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Virginia Health District</td>
<td>13.1</td>
<td>11.3</td>
</tr>
<tr>
<td>City of Bedford</td>
<td>0</td>
<td>6.2</td>
</tr>
<tr>
<td>City of Lynchburg</td>
<td>17.2</td>
<td>15.4</td>
</tr>
<tr>
<td>Amherst County</td>
<td>13.4</td>
<td>5.8</td>
</tr>
<tr>
<td>Appomattox County</td>
<td>10.8</td>
<td>13.2</td>
</tr>
<tr>
<td>Campbell County</td>
<td>9.4</td>
<td>13.1</td>
</tr>
<tr>
<td>State of Virginia</td>
<td>8.2</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Source: Virginia Center for Health Statistics

A review of all infant deaths that occurred at Centra Health Virginia Baptist Hospital identified prematurity as the leading cause of death followed by respiratory distress syndrome (RDS). Maternal complications seemed to be a major contributor to infant death in this area.


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of deaths at hospital</td>
<td>28</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Cause of death</td>
<td>18 PTL/LBW 3 RDS 3 MC 2 CA</td>
<td>8 PTL/LBW 3 MC 1 Other</td>
<td>1 PTL/LBW 1 MC 1 RDS 2 CA</td>
</tr>
<tr>
<td>Race</td>
<td>12 White 16 Black</td>
<td>8 White 7 Black</td>
<td>6 White 4 Black</td>
</tr>
<tr>
<td>Perinatal Region III infant mortality rate</td>
<td>12.3</td>
<td>10.7</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Key: PTL/LBW = Preterm labor or low birth weight  RDS = Respiratory distress syndrome  MC = Maternal complications  CA = Congenital anomaly  Other = Child drowned
Perinatal Region III identified its FIMR program as a community-based effort to better understand the pattern and occurrence of fetal and infant deaths and to develop local strategies to reduce these deaths. Coordinators planned to modify the following Virginia statewide FIMR goals: 1) to use FIMR to implement continuous quality improvement, 2) to utilize existing RPC networks as integral to the Virginia FIMR Program, and 3) to improve services and community resources for childbearing families.

**Methodology—Case selection:** All fetal deaths from 24 weeks gestation and infant deaths to 1 year—with a maximum of 24 cases—would be reviewed each year. Mothers must reside in Lynchburg or Campbell County. Cases would be identified through Virginia Baptist Hospital records and Medical Information Service reports. Death certificate information had not been available.

**Maternal interview:** Interviewers contacted mothers via telephone. Interviewers in Lynchburg included two FIMR and bereavement-trained maternal-child health nurses. Lynchburg was the first new FIMR site in Virginia to complete a maternal interview.

**Chart review:** Records would be abstracted and the case reviewed whether or not a maternal interview was completed. A health department nurse and hospital nurse rotated the abstractions.

**Review committees—Case review team:** The team had “balanced representation” from the health department, hospital, and community health professionals. In the program’s first-year report, findings included:

- Lack of or late entry to prenatal care.
- Insufficient drug-treatment services for pregnant women.
- Exposure to hazardous chemicals in the workplace.
- Gaps in Emergency Medical Service’s (EMS’s) equipment for premature infant transport.
- Inadequate information concerning the death scene and cause of death.

**Community action team:** The CAT’s first meeting was held in May 1997 and provided a FIMR orientation. The mayor of Lynchburg, along with 20 other Lynchburg and Campbell County leaders, served on the CAT.

**Barriers:** Perinatal Region III encountered the following barriers to its FIMR program:

- An inability to obtain death certificate information from the health department (the case review team needed cause-of-death information to review cases).
- Preconception information not documented.
- Postpartum documentation not on prenatal record.
- FIMR data-presentation ideas needed for CAT meeting in a format that is clear to the team’s diverse membership.
- The need for FIMR data-collection software.
• The need for developing a one-page fact sheet about FIMR in Perinatal Region III for community education purposes.
• The need for networking with funeral home directors.
• The need for gaining access to morgue and pathology logs for purposes of ascertaining cases.

Recommendations: To overcome the above barriers, the region developed the following strategies:
• Meet with health department representatives to address problems.
• Obtain a letter of endorsement from the Virginia State Health Commissioner to encourage assistance with FIMR program.
• Continue to build good relationships with medical record hospital personnel.
• Obtain pie chart examples from Norfolk FIMR presentations.
• Ensure receipt of data-collection software provided by the National FIMR Program in July 1997.
• Complete FIMR fact sheet in the next quarter.
• Plan a luncheon to address FIMR with local funeral home directors.
• Contact local hospital’s pathology department.

Accomplishments: During 1997–1998, Perinatal Region III FIMR program identified the following accomplishments:
• Strong community commitment to FIMR.
• Excellent organization of FIMR case logs, medical records review, recruitment of review committees, and meetings.
• Proactive efforts by the FIMR coordinator to solve problems of case ascertainment and record review.
• Leader among FIMR sites in terms of completing the first case review and hosting statewide FIMR trainings.
• Steady progression through the FIMR groundwork process, creating an excellent model and resource for new FIMR sites.


The September 18, 1998–August 31, 1999, annual report for the Virginia Healthy Start Initiative FIMR Program lists Perinatal Region III as a comparison site whose CRT convened monthly, reviewing 100% of cases, which met program criteria. The CAT met quarterly. Both teams had multidisciplinary representation, although a racially balanced team was still being sought. The region’s Beds and Britches, Etc. (B.A.B.E.) program (an incentive program that encourages women to seek prenatal care and families to nurture healthy babies and children) was awarded the winning entry of all submissions at the 1999 Association of Women’s Health, Obstetric and Neonatal Nurses conference. Other activities in the planning stage were marketing FIMR by using fact sheets, billboards, newspaper releases, and public service announcements; posting information on the RPC website; and developing a corporate campaign to involve companies and organizations. Additionally, the region’s FIMR program was to expand its focus to examine racial
disparities and infant mortality in the cities of Lynchburg and Danville and in Pittsylvania County.

Summary of Activities: 1999–2000

The Virginia Healthy Start Initiative FIMR Program’s annual activity report for September 1, 1999–August 31, 2000, summarizes a busy year for Perinatal Region III. The Lynchburg FIMR program focused on minority health with the development of a CAT Racial Disparity Task Force. Other task forces formed to support FIMR included Prevention of Unplanned Pregnancies and the Three-Year Community Report on the Infant Mortality Problem. The CRT grew to include a genetics counselors and an emergency room representative. The CRT met every month, and the CAT met quarterly.

The Danville FIMR program experienced a slow development due to the resignation of the hospital’s chief executive officer, a key leader for the success of FIMR within the hospital community. Despite the setback, during 1999–2000, a FIMR program overview was developed and presented to hospital and health department staff. Additionally, a CRT was formed, maternal home interviewers were trained, a case-identification system was established, and FIMR protocols were drafted.

Table 15 provides an overview of activities in Lynchburg and Danville during 1999–2000.

<table>
<thead>
<tr>
<th>Activity</th>
<th>City of Lynchburg</th>
<th>City of Danville</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases</td>
<td>15</td>
<td>*</td>
</tr>
<tr>
<td>Cases abstracted</td>
<td>14</td>
<td>*</td>
</tr>
<tr>
<td>Cases with interviews</td>
<td>5</td>
<td>*</td>
</tr>
<tr>
<td>CRT meetings</td>
<td>4/year</td>
<td>*</td>
</tr>
<tr>
<td>CAT meetings</td>
<td>2/year</td>
<td>*</td>
</tr>
<tr>
<td>Number of recommendations</td>
<td>37</td>
<td>3</td>
</tr>
<tr>
<td>Number of actions</td>
<td>29</td>
<td>3</td>
</tr>
</tbody>
</table>

* Information not available

Issues: During the 1999–2000 time period, Perinatal Region III identified the following issues through its FIMR process:

- A continued need for preconception education and care, including the need for folic acid in all women of childbearing age.
- Late entry and inadequate prenatal care.
- The need for ongoing psychosocial support for women undergoing prenatal stress or suffering from an infant/fetal loss.
• The need for educating consumers and providers on the benefit of genetic counseling and pathology exams to help identify the causes of infant mortality.
• The need for a SIDS education program targeting daycare providers and minority populations.
• The need to determine whether a SIDS protocol or policy exists in hospital emergency rooms to insure that parents receive information, referrals, and support in a timely fashion.
• The need for new and innovative smoking-cessation programs to reduce smoking during the perinatal period.
• A continued delay in the time when women identify changes in fetal movement and when they notify health-care providers or arrive at the hospital’s labor/delivery department.
• A lack of documentation of fetal-movement education.
• The need for examining methods that effectively deal with the noncompliant patient, including barriers to compliance.
• Prevention programs needed to address unplanned/unwanted pregnancies.
• The need to explore hospice care for terminally ill infants.
• Racial disparities in infant mortality.
• Communication gap among private and public providers, particularly between the hospital emergency room and the health department.
• The need to improve the public perception of access to health care, particularly those with financial needs.
• A lack of provider and community awareness of services available in the community.

Recommendations: Perinatal Region III established the following recommendations for its FIMR program:
• Promote preconception health to consumers and providers in the public and private sector.
• Encourage early entry to prenatal care during the first trimester.
• Address the need for autopsy and death-scene investigation protocols.
• Provide education on the benefits of counseling and pathology referrals regarding infant deaths.
• Develop a SIDS awareness program to promote the Back to Sleep campaign.
• Provide education and smoking-cessation services to pregnant women.
• Explore the possibility of a renewed “Kicks Count” campaign.
• Explore primary prevention strategies to prevent unplanned/unwanted pregnancies.
• Develop a public education program to address high-risk pregnancy.
• Increase grief training for health-care professionals.
• Target the reduction of infant mortality among the African American population.
• Provide equipment and training for EMS/rescue squads who transport premature babies and deliver babies.
- Continue efforts to support and provide education and interventions necessary for preventing perinatal substance abuse.
- Continue to assess the need for residential substance abuse programs for pregnant women.

**Accomplishments:** Based on the above recommendations, Perinatal Region III undertook the following community actions:

- Launched a poster campaign in the Lynchburg area—titled “What to Do If You are Planning on Having a Baby”—in which 2,000 posters were developed and distributed to local businesses, physician offices, and pharmacies.
- Developed a one-year billboard campaign on major highways in Danville, addressing early and consistent prenatal care.
- Distributed the video, *Think Ahead*, to members of the professional community.
- Assigned a genetics counselor to explore educational opportunities, including brochure development, for the community and providers.
- Created a door hanger describing the SIDS Back to Sleep campaign and distributed it throughout the region.
- Provided ongoing SIDS education to the professional community, including the Racial Disparity Task Force and childcare centers.
- Explored a “Fresh Start” smoking-cessation presentation for implementation with the Court Street Baptist Church.
- Planned to edit and distribute “Kicks Count” campaign cards to professionals and consumers in Lynchburg and Danville.
- Helped the Racial Disparity Task Force host a town hall meeting, which had 75 attendees.
- Continued ongoing development of death-scene protocol.
- Created the Neonatal Resuscitation Program as a “Train the Trainer” educational opportunity provided at no cost to all interested EMS/rescue squads.
- Offered a Pediatric Advanced Life Support training course and the “Transporting Newborns the STABLE Way” educational session to EMS personnel.
- Hosted a fundraiser to support the B.A.B.E. program and, in addition, applied for and received a $7,000 grant from the March of Dimes.
- Began the development of the Community Voice Resource Directory.
- Other successes during 199-2000 included two published articles, “Low Birth Weight” and “Reducing the Risk of Sudden Infant Death Syndrome”, which were written by the FIMR coordinator for local publications.
- Perinatal Region III also collaborated with the Central Virginia Fatherhood Initiative in hosting a town meeting.
- FIMR and preconception/prenatal care were marketed at two area functions that targeted the African American community (the Sisters in Christ convention with 300 attendees and a local health fair with 65 attendees).
Summary of Activities: 2000–2001

A summary of activities for the first quarter of 2001 indicates a busy period for Perinatal Region III. The CRT met monthly, while the CAT met three times a year. Deaths from 20 weeks gestation to 1 year were reviewed. Strategies and interventions to address FIMR issues included a 6-week class on nutrition and preconception care, which took place at a center for high-risk, inner-city families and was taught in collaboration with the Amherst County Extension Office and with Loving Steps ( Virginia Healthy Start Initiative Program). Two classes of lay health advisors (number not noted) graduated from the March of Dimes’ Community Voice program, which focuses on reducing disparities in birth outcomes among high-risk pregnant women. Laminated preterm-labor wallet cards were distributed, but the method of distribution was not noted. A March of Dimes speaker conducted cultural sensitivity training sessions in Lynchburg, Bedford, and Danville; however, no data is available regarding evaluation or the number of attendees.

Barriers: A progress report for 2001 indicates a concern for FIMR funding. The FIMR coordinator’s hours were reduced from 32 to 24. Despite the adjustment, the Lynchburg FIMR program continued to rely on financial support from the Centra Health Foundation until the end of the calendar year.

The B.A.B.E. program: A 1998–2001 summary report on the B.A.B.E. program in Perinatal Region III describes successes and challenges. The program followed an Indiana model and included goals of increasing early entry to prenatal care, decreasing the rate of infant mortality and low-birth-weight babies, and enhancing awareness and utilization of maternal/child health and social services. The B.A.B.E. program had no political or religious affiliation and was open to all women—regardless of age, race, and income—as long as they resided in Health District 11 (the counties of Amherst, Appomattox, Bedford, and Campbell and the cities of Lynchburg and Bedford).

As an incentive to promote healthy care for infants and children, the B.A.B.E. program in Perinatal Region III offered coupons (each worth $5), which could be redeemed at the B.A.B.E. retail store to purchase gently used baby clothing and equipment. Pregnant women earned coupons by completing scheduled prenatal visits. They received a bonus coupon for entering prenatal care during the first trimester. The maximum number of earned coupons for a normal pregnancy was 13; high-risk visits yielded up to three more coupons. Women could earn additional coupons by attending childbirth education, baby care, and/or breastfeeding classes. After the baby’s birth, well-baby and immunization visits increased the number of earned coupons. The B.A.B.E. program in Perinatal Region III was an overwhelming success. Within nine months of its initial startup (April 6, 1998–December 31, 1998), the program served 415 women redeeming 2,024 coupons (about $10,000 in merchandise). By the end of 1999, the program served over 800 women.
Despite the success of the region’s B.A.B.E. program, funding for the B.A.B.E. retail store’s inventory became a major concern, which led to changes in the program to serve women who were most at risk and in the greatest need. Initially, the store received items donated by groups ranging from Girl Scout troops to the Retired Teachers Association. By 2000, the store accumulated inventory via community baby showers or used grant monies to purchase items. Due to inventory financing concerns, an income guideline (maximum: $25,000 per year) was established for program participants, including teens under 18 years old. In February 2000, extra coupons earned from well-baby and immunization visits were eliminated, and a membership card was substituted for coupons. Subsequently, funding was noted as an ongoing issue that would affect the survival of the region’s B.A.B.E. program.


Perinatal Region III’s Microsoft® Access database provides a summary of activities during 2001–2003. During this time frame, the region documented a total of 42 FIMR cases (23 fetal, 19 infant). Notification was provided by the hospital ($n = 39$), family members ($n = 2$), and the health department ($n = 1$). All case abstractions were completed. There were 20 completed home maternal interviews, 21 refusals, and 1 listed as pending.  

**Issues:** In multiple cases, Perinatal Region III identified the following issues:

- Late entry to prenatal care.
- Access to care.
- Unplanned pregnancy, including teen pregnancy.
- Lack of preconception health counseling.
- Perinatal smoking and second-hand smoke.
- Substance abuse.
- A need for SIDS risk-reduction education for all infant caregivers, including childcare providers and grandparents.
- Unsafe sleep environment.
- Lack of education regarding fetal kick counts and infant health.
- Gang violence.
- Inadequate EMS equipment for infants.
- Sexually transmitted diseases.
- Failure of employer to comply with restrictions placed on pregnant employee.

**Recommendations:** Based on the issues listed above, Perinatal Region III developed the following recommendations:

- Promote healthy preconception lifestyles.
- Encourage preconception counseling, especially for women with chronic health conditions.
- Provide access to care and early prenatal care.
- Prevent unplanned and/or undesired pregnancies.
- Support perinatal smoking-cessation efforts.
- Identify SIDS risk-reduction factors to all infant caregivers.
• Promote and support community resources and education.
• Support early referral to bereavement consultation with a poor pregnancy outcome diagnosis.
• Support efforts to ensure that all EMS providers are trained in Pediatric Advanced Life Support techniques.
• Increase awareness of the impact of sexually transmitted diseases during pregnancy.
• Educate employers on the risks to pregnant women and the need to modify work conditions.

Accomplishments: Implementation efforts during this time period included the following:
• Promoted preconception care at area health fairs.
• Promoted early and adequate prenatal care through B.A.B.E. and Community Voice programs.
• Adopted the Repeat Adolescent Pregnancy Prevention program.
• Provided fetal kick cards to obstetrical care providers.
• Distributed SIDS t-shirts and risk-reduction information to new mothers in the hospital.
• Presented SIDS risk-reduction information to area childcare providers.
• Sent reminders to health-care providers about available bereavement services.

Findings from the FIMR cases reviewed indicate 42% had late entry (after the first trimester) into prenatal care, and 13% had no prenatal care. Among those who accessed care, 17% had fewer than 5 prenatal care visits. FIMR formed a Prenatal Care Task Force in 1997 and, by April 1998, the B.A.B.E. retail store opened its doors. According to the “Lynchburg Fetal and Infant Mortality Review, Community Report, 1997–2000,” study findings indicate that B.A.B.E. clients are more likely to access care at an earlier gestational age than the general public. Using 1998 date statistics collected for the Virginia Department of Health, the report’s findings indicated an 84% entry into prenatal care during the first trimester. Furthermore, 86% of women in the City of Lynchburg and 89% of the B.A.B.E. clients began their prenatal care during the first trimester. The Centra Health Foundation awarded generous funding to the FIMR program; however, in order to continue to function, Perinatal Region III must secure a sponsor, host fundraisers, and sponsor community awareness activities.
Perinatal Region IV – Skyline Region Perinatal Council

Perinatal Region IV is served by the Skyline Region Perinatal Council and encompasses rural and suburban areas in Northwest Virginia, as well as the City of Charlottesville. Planning District 10 is the Thomas Jefferson Health District, which consists of the counties of Albemarle, Fluvanna, Greene, Louisa, and Nelson, as well as the City of Charlottesville. In 1994, although the district had neonatal death rates and infant mortality rates below the state level (see Table 16 and Table 17), its natural fetal death rate was higher than the state level and the rest of Perinatal Region IV (see Table 18). Due to strong community interest and support, Perinatal Region IV selected the Thomas Jefferson Health District as the pilot FIMR site to review fetal deaths.

Table 16. Perinatal Region IV – 1994 Neonatal* Death Rates (per 1,000 Live Births), by Race

<table>
<thead>
<tr>
<th>Location</th>
<th>Total</th>
<th>White</th>
<th>Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning District 10</td>
<td>2.6</td>
<td>1.6</td>
<td>7.4</td>
</tr>
<tr>
<td>Perinatal Region IV</td>
<td>6.2</td>
<td>4.0</td>
<td>16.3</td>
</tr>
<tr>
<td>State of Virginia</td>
<td>5.9</td>
<td>4.4</td>
<td>10.9</td>
</tr>
</tbody>
</table>

*Neonatal = 0–28 days
Source: Virginia Center for Health Statistics

Table 17. Perinatal Region IV – 1994 Infant Mortality Rates (per 1,000 Live Births), by Race

<table>
<thead>
<tr>
<th>Location</th>
<th>Total</th>
<th>White</th>
<th>Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning District 10</td>
<td>5.7</td>
<td>4.9</td>
<td>9.9</td>
</tr>
<tr>
<td>Perinatal Region IV</td>
<td>8.2</td>
<td>5.7</td>
<td>22.0</td>
</tr>
<tr>
<td>State of Virginia</td>
<td>8.2</td>
<td>6.3</td>
<td>15.1</td>
</tr>
</tbody>
</table>

Source: Virginia Center for Health Statistics

Table 18. Perinatal Region IV – 1994 Natural Fetal Death Rates, by Race

<table>
<thead>
<tr>
<th>Location</th>
<th>Total</th>
<th>White</th>
<th>Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning District 10</td>
<td>11.9</td>
<td>11.6</td>
<td>13.8</td>
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<tr>
<td>Perinatal Region IV</td>
<td>10.4</td>
<td>10.3</td>
<td>12.0</td>
</tr>
<tr>
<td>State of Virginia</td>
<td>7.8</td>
<td>7.7</td>
<td>8.6</td>
</tr>
</tbody>
</table>

Source: Virginia Center for Health Statistics

According to the 1996–1997 state report, Perinatal Region IV’s mission statement and goals were not completed at this time. However, the report states that Perinatal Region IV planned to utilize its FIMR program to answer the following questions:

- Are there gaps in maternal-child services in Health District 10?
- Do mothers have difficulty accessing care?
- Are there enough maternal-child health-care providers?
- Are there adequate bereavement services?

Methodology—Case selection: All fetal deaths 20 weeks or more gestation and infant deaths up to 1 year would be eligible for review. Cases would not be reviewed if a maternal interview was not completed or if the baby was delivered at a facility outside of Health District 10. It was expected that 12–30 deaths per year would be reviewed. The process for death notification was not finalized; however, the plan was to receive death certificates periodically from the VDH Office of Vital Records and Health Statistics located in Richmond.

Maternal interview: A description of the FIMR program would be included in each family death packet distributed by bereavement teams from each hospital in Perinatal Region IV. Eight weeks after the death, a FIMR-trained nurse or social worker would contact the mother either by telephone or in person to request an interview and, if appropriate, refer the mother to local bereavement services. The region’s FIMR program had four trained interviewers: one child health social worker, one public health nurse, and two hospital-based nurses. The first maternal interview was anticipated for July 1997. The 1998 Perinatal Region IV report states that all protocols were in place and the CRT was formed, conducting reviews and meeting every 6–8 weeks. The CAT formation deferred until sufficient cases were reviewed for recommendations.

Chart review: Three trained abstractors would review records at two hospitals in Charlottesville and at the local public health department.

Review committees—Case review team: Volunteers for the CRT would be sought at a physicians’ meeting in June 1997. In addition, the local public health and social services departments would be asked to appoint CRT members. Reviews were anticipated to begin October 1997. The area’s two RPC co-coordinators served as the acting Perinatal Region IV FIMR co-coordinators.

Community action team: After the CRT had met and reviewed cases at least 4–5 times, the CAT would review data trends every 6 months. Planning for this team was to occur in October 1997, after the first CRT meeting.

Barriers: The Perinatal Region IV FIMR Program named the following barriers to progress:

- Identification of fetal and infant deaths.
- The need to identify appropriate persons to serve on the CAT.
The need for a medical examiner for the case review team.
- Possible community resistance to FIMR data, due to the low number of cases.
- The state FIMR coordinator’s opinion that one person should be designated to lead the region’s FIMR program.

**Recommendations:** The following strategies were developed to overcome identified barriers:
- Develop a system with the VDH Office of Vital Records and Health Statistics in which quarterly reports of infant death certificate information would be sent directly to the region’s FIMR coordinator.
- Review the CAT list of other FIMR programs and send letters to key community leaders, followed by a phone call to determine interest and, then, schedule a personal visit to explain FIMR.
- Have an in-house pediatric pathologist on the CRT who can advise.
- At the suggestion of state FIMR coordinator, present data acknowledging numbers but pointing out quality assurance/improvement benefits of FIMR.
- Hire a Perinatal Region IV FIMR coordinator in July.

**Accomplishments:** Perinatal Region IV’s strengths and accomplishments included the following:
- Excellent support from the local health department director.
- Health department and hospital professionals worked well together.
- Good enthusiasm among the core FIMR planning group, interviewers, and abstractors.
- Bereavement and abuse resource lists were under development, and community bereavement networks were being established.
- Extra FIMR training was provided so volunteers would be well prepared.

**Summary of Activities: 1998–1999**

Perinatal Region IV is listed as a comparison site in the September 1, 1998–August 31, 1999 annual report for the Virginia Healthy Start Initiative FIMR Program. The region’s CRT meeting frequency was varied due to the small number of fetal and infant deaths available for review. During 1998, 22 eligible cases were identified for review. Additionally, the CRT met 5 times and reviewed 10 cases, along with two extra cases from 1997.

As of January 1999, the region’s FIMR process expanded to include residents of Orange and Madison counties. In addition, the CRT reviewed cases without a maternal interview in order to maintain an adequate number of cases to sustain momentum. January 1999 also marked a new tenure for the CRT. Three members resigned, although the vacancies were filled. A strong FIMR presence existed in the community, and participation from community agencies had been sought for the CAT. Approximately 32 cases were identified, 14 cases were abstracted, and 8 cases were pending abstraction. Twelve interviews were completed, 6 refusals were recorded, 3 interviews were pending, and the remaining cases were unable to be located, had moved, or were no-shows. The
CRT met 4 times and reviewed 6 cases in 1999. Ten cases were reviewed through the CRT.

Community issues identified were the lack of referrals to community services and the need for bereavement training. Actions included developing community-wide standards of care for bereavement, insuring that caregivers and patients understand funeral options and resources, developing a visual symbol for patient charts, taking pictures at delivery, and forming a community subcommittee for implementation.

Summary of Activities: 1999–2000

Perinatal Region IV is still listed as a comparison site in the September 1, 1999–August 31, 2000, annual activity report for the Virginia Healthy Start Initiative FIMR Program. However, in December 1999, the region’s FIMR coordinator resigned. The loss of this key position caused the RPC to reevaluate whether the council should continue to use resources to support the region’s FIMR program. Additionally, due the lack of a coordinator and to the paucity of fetal and infant deaths in the area, no case review activity took place.

The annual FIMR report for 2000 states that, with modifications and an expanded geographical area, the RPC decided to continue with the Perinatal Region IV FIMR process. In lieu of examining resident deaths in the Thomas Jefferson Health District, case reviews would include any infant or fetal death within the RPC that occur at the University of Virginia Hospital. It was believed this change would provide a large number and variety of cases for review, easy access to records, and an opportunity to build support and infrastructure.

Hiring a FIMR coordinator proved challenging, which prompted the FIMR steering committee to develop a position description that was not specific to nursing. In June 2000, a new coordinator was hired and trained and began to reestablish the region’s FIMR program. New members were added to the CRT, cases were identified for case review, and volunteers were trained for chart abstractions and home interviews.

Formed in Fiscal Year 02 of the Virginia Healthy Start Initiative, the Perinatal Bereavement Task Force continued its FIMR activity to maintain a standard of care for families who had suffered a loss. During 1999–2000, the task force was in the process of piloting a bereavement care checklist at area hospitals to ensure provision and documentation of comprehensive bereavement. Also, the task force sponsored a workshop, titled “Cultural and Religious Aspects of Death and Grief for Caregivers of Families Who Have Lost a Baby.”

FIMR’s Microsoft® Access database has no more information on Perinatal Region IV until 2004. The region’s FIMR process was not viable in 2002–2003 because a regional coordinator was not in place.
Perinatal Region V – Northern Virginia Perinatal Council

Perinatal Region V encompasses a small geographic area in Northeast Virginia and is served by the Northern Virginia Perinatal Council. In past years, the area’s neonatal death rates and infant mortality rates were consistently below the state’s rates (see appendices G and H). Therefore, the area’s RPC elected to use the FIMR process to review very low birth weight births (see appendix I).

Summary of Activities: 1997–1999

Although a mission statement is not available for Perinatal Region V’s FIMR program, the following goals were identified:

- To provide a model for community-wide review of neonatal and infant mortality, including recommendations for improvement of the health-care system, when applicable.
- To focus on very low birth weight (VLBW) as an indicator of infant mortality and to gather data on which to base recommendations for improving care to high-risk pregnant women.
- Incorporate cultural sensitivity and relevance into the FIMR process.
- Develop a methodology to ensure that data gathered through the FIMR process is used to improve care.

The region also planned to compare its VLBW study results to the Vermont Oxford Network Database statistics on infants weighing less than 1500 grams.

Methodology—Case selection: According to the Statewide Planning Year 1996–1997 progress report, the area’s RPC decided that all babies weighing less than 1500 grams were eligible for the study. Most of the 130 VLBW babies born each year in the region are delivered at Inova Fairfax Hospital. Infants who died at Inova Fairfax Hospital during the calendar year 1998 and a random selection of fetal deaths from the same hospital were included in the FIMR process. Fetal deaths less than 20 weeks gestation and infant deaths less than 450 grams were excluded from the FIMR process. SIDS deaths were referred to the public health nurse for review; however, in 1999, the Perinatal Region V FIMR team began reviewing SIDS cases.

Maternal interview: Because VLBW babies are hospitalized for several weeks, maternal interviews would take place in the neonatal nursery and conducted usually by the co-coordinator of the study, a registered nurse in the neonatal intensive care unit (NICU).

Chart review: During 1996, the newly hired outreach education coordinator oversaw Perinatal Region V’s FIMR program. Graduate students were to assist with chart review. Maternal prenatal records were usually attached to the hospital chart, making it unnecessary for abstractors to travel outside the hospital setting. The region’s FIMR coordinator was hired in 1997.
Review committees—Case review team: During the planning phase, the Northern Virginia RPC/FIMR Committee served as the case review team and met monthly. Data collection began in early 1997. Interim data analysis in April 1997 revealed that 20 mothers and 30 VLBW infant cases were reviewed, with half of the mothers experiencing multiple births. Nine mothers had placental abnormalities with bleeding, which led to the mothers’ antenatal hospitalization. Interestingly, the VLBW newborns had a lower rate of infection than expected.

According to the Virginia FIMR Program’s statewide annual report for September 1, 1999–August 31, 2000, the Perinatal Region V CRT met 7 times and reviewed 20 cases. The area’s RPC 1998–2000 report states that the team reviewed 193 cases of fetal and infant deaths selected from Inova Alexandria and Fairfax hospitals. In 2000, the region’s Alexandria FIMR team met 4 times and reviewed 30 cases of fetal and infant deaths.

Community action team: The Northern Virginia RPC Steering Committee served as the community action team. At the time of the initial report, the group did not plan to meet on a regular basis. During 1998–1999, the recommendations and findings from the CRT were used to develop a collaborative plan of action to build on existing partnership programs such as the March of Dime Folic Acid Campaign and/or site-work education programs.

Barriers: The following barriers to Perinatal Region V’s FIMR progress were identified:
- The need for FIMR software.
- A lack of time to coordinate project, as reported by the program’s co-coordinator.
- The need to start an NICU support group for the purpose of referring mothers identified during the maternal interview as needing additional support.

Recommendations: The following strategies were developed to overcome the barriers to the program:
- Ensure receipt of data-collection software provided by the National FIMR Program in July 1997.
- If additional funds become available, hire a FIMR coordinator for the region.
- Continue forming an NICU support group.

Accomplishments: Perinatal Region V identified the following accomplishments of its FIMR program:
- Revised FIMR forms specifically for low birth weight cases.
- Offered a low birth weight review unique to FIMR programs, which could potentially serve as a model for other FIMR sites across the country.
- Received excellent cooperation from medical records staff, data collection staff, and review committees.
- Had good representation on and commitment from review committee.
- Introduced its FIMR/VLBW study to local health professionals through the Perinatal Progress newsletter.
A FIMR report dated 1998–2000 states that cases were selected from the medical records of Inova Alexandria and Inova Fairfax hospitals. Infant deaths and a random selection of fetal deaths more than 20 weeks gestation were included in the FIMR process. The annual state report from 1998–1999 showed an active FIMR process. Since the project began, 74 cases were reviewed, 32 home visits were completed, 22 refused to be interviewed, and 15 could not be located. Because 12 cases occurred in a small geographic area, the Fairfax County Health Department conducted an investigation to determine whether the cases represented a trend or a coincidence. A large percentage of deaths occurred to foreign-born mothers. Most of these families were unavailable to the program because they either moved or returned to their native country after the death to perform a burial. The reviews revealed a higher infant mortality rate among older, working mothers and a pattern of women failing to recognize the signs and symptoms of preterm labor.

A collaborative plan of action was developed, building on existing partnerships with the March of Dimes Folic Acid Campaign and on-site work education programs such as “Babies and You.” Relationships with local funeral homes generated low-cost burials for infants. A home visitation program to counsel postpartum mothers was piloted with Home Health Clinical Services of Northern Virginia. A community report was published and distributed to members of the area’s RPC and potential funders, as well as to other FIMR sites for use as a template.

Summary of Activities – 1999–2000

A future FIMR focus for the region was to examine racial disparities and infant mortality rates in the City of Alexandria, with the Northern Virginia Perinatal Council Steering Committee functioning as the Alexandria CAT until the city’s consortium was formed. According to the Virginia FIMR Program statewide annual report for September 1, 1999–August 31, 2000, this focus became a reality. The Alexandria FIMR program was formed, and the transition was easy due to members who had prior experience from the Fairfax FIMR program. The Northern Virginia Perinatal Council Steering Committee functioned as the CAT until the Alexandria coordinator of the Loving Steps program developed a consortium. The CRT met 3 times in 1999–2000. Table 22 provides a summary of activities for both the Fairfax and Alexandria FIMR programs during this time period.

Barrier:
- FIMR interviews were difficult to obtain. A large percentage of deaths occurred to foreign-born mothers; therefore, cultural beliefs, distrust of the system, and fear of deportation decreased FIMR participation. Follow-up measures for private patients were hindered by the lack of resources to locate them.
Table 22. Perinatal Region V – Summary of Activities from September 1, 1999–August 31, 2000

<table>
<thead>
<tr>
<th>Activity</th>
<th>City of Fairfax</th>
<th>City of Alexandria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases</td>
<td>41</td>
<td>17</td>
</tr>
<tr>
<td>Cases abstracted</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Cases with interviews</td>
<td>26</td>
<td>11</td>
</tr>
<tr>
<td>CRT meetings</td>
<td>5/year</td>
<td>3/year</td>
</tr>
<tr>
<td></td>
<td>2/quarter</td>
<td>2/quarter</td>
</tr>
<tr>
<td>CAT meetings</td>
<td>5/year</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1/quarter</td>
<td></td>
</tr>
<tr>
<td>Number of recommendations</td>
<td>43</td>
<td>14</td>
</tr>
<tr>
<td>Number of actions</td>
<td>11</td>
<td>None listed</td>
</tr>
</tbody>
</table>

Issues: During 1999–2000, Perinatal Region V identified the following issues through its FIMR process:

- The lack of bereavement support at time of discharge.
- The lack of support for adoptive parents.
- Smoking throughout pregnancy.
- The lack of referrals to community services and resources.
- The lack of communication among providers of services.
- The lack of prenatal education.
- Foreign-born mothers being unaware of services available to them.
- A disturbing pattern of pregnant women who suffered from symptoms of preterm labor and did not understand what those signs indicated or whose complaints were not heeded by their provider.
- A lack of awareness of the benefits of folic acid.
- Two unplanned home deliveries that were difficult.
- Extreme obesity with no referral for dietary counseling.
- The need for prenatal laboratory cultures.

Recommendations: During the same time period, the following recommendations were developed:

- Increase outreach awareness that all women of childbearing age must take the recommended amount of folic acid.
- Educate the medical community that twins and other multiples must be treated as high-risk pregnancies.
- Teach the signs and symptoms of preterm labor to all pregnant women and advise all health care providers to take the mother’s concerns seriously.
- In the prenatal period, effectively treat infections such as bacterial vaginosis and Group B strep.
• Increase the awareness of employers and pregnant women about risks and modify work conditions accordingly.
• Promote the Back to Sleep campaign and other preventative messages regarding SIDS and safe-sleep practices (target daycare providers).
• Create outreach education programs regarding the need for prenatal care and the risk of birth defects in the foreign-born population. Ensure education and public awareness efforts take place in appropriate settings and are culturally and linguistically correct.

**Accomplishments:** The Perinatal Region V FIMR program experienced the following successes and challenges during 1999–2000:

• A majority of deaths were from congenital anomalies or preterm birth with infection present. As a result, the region’s FIMR program received a grant from the March of Dimes to purchase 600 bottles of folic acid (an 8-month supply) to distribute to programs working with foreign-born mothers.
• Information on preterm birth was translated into Spanish and other languages to distribute to all physicians’ offices and clinics in the area.
• A multidisciplinary Infant Mortality Roundtable was held in May 2000. As a result, two task forces were formed: one task force to develop a brochure and list of counselors and support groups in the region, which was completed; a second task force charged with developing patient education materials suggested by FIMR action items.
• With the aim to target the Hispanic community and with assistance from the Washington, DC, United Soccer Team, public service announcements related to pregnancy health and baby care were aired. Over 6,000 pieces of literature were distributed at a soccer game attended by 53,000 fans.
• The development of a perinatal loss library began.
• The area’s RPC conducted two trainings, “Optimal Prenatal Care.” The target population included all professionals and paraprofessionals working with pregnant women so they could understand the signs and symptoms of problems in pregnancy and could convey them to pregnant women.
• The Northern Virginia SIDS Alliance targeted educational efforts towards daycare providers, including a pamphlet translated into Spanish. With help from the area’s RPC, a brochure was developed targeting the African American population. Over 5,000 copies were distributed.
• The area’s RPC worked with perinatal loss committees in area hospitals to sponsor bereavement training and promote bereavement support.

The area’s RPC provided a detailed FIMR report from 1998–2000. A total of 193 cases were reviewed. Variables noted in the cases included the following: gestation; multiple births; substance abuse (as reported on the birth certificate or by mother); maternal medical conditions; birth weight; types of maternal infections; psychosocial factors; ethnicity; mother’s age; country of mothers’ birth; number of prenatal care visits; marital status; maternal employment; residence; transports and transfers; causes of death in infants; length lived; and insurance. These statistics are invaluable for program planning and grant applications.

During 2001, the focus for the area’s RPC changed to low birth weight. Cases selected were all babies weighing less than 1500 grams, and maternal interviews were conducted in the NICU. The region’s FIMR coordinator obtained information about infant deaths from the NICU, the labor and delivery department, the pediatric intensive care unit, and the emergency department, as well as from the SIDS Mid-Atlantic program. By 2002, the plan was to add rotating regional reviews to the region’s current process of reviews being conducted at Inova Fairfax Hospital. No data is available from 2001.


The region’s FIMR Microsoft® Access database for 2002–2003 lists 36 cases, all from the Fairfax FIMR site. Of the 36 cases, 34 were infant deaths, one low birth weight, and one was unknown. Of the deaths, 13 were from congenital anomalies; 19 were from low birth weight; one was from sudden, unexplained infant death; one was from SIDS; and one was from renal failure. Nine cases were reviewed, and 2 cases are listed as pending.

Issues:
- Multiple gestation not being referred to a perinatologist
- The mother not taking folic acid
- The mother bleeding in the emergency room for 5 hours, but no maternal record available for review
- Maternal depressive disorder
- Delivery issues (not specified) at an outlying hospital

Recommendations:
- Increase education regarding folic acid and SIDS for home daycare providers and for outlying hospitals
Perinatal Region VI – Central Commonwealth Perinatal Council

Perinatal Region VI encompasses the largest geographic area in the state and includes urban (Richmond City), suburban, and rural settings. It is served by the Central Commonwealth Perinatal Council.

A FIMR program was established in Richmond City in 1995, with funding from Richmond City Healthy Start under the auspices of the area’s RPC. The program’s case review team began meeting to review cases in May 1995. The VDH Healthy Start FIMR process began in 1997, with target sites located in the health districts of Southside, Crater, and Three Rivers.

The 1996–1997 statewide report notes that FIMR was to expand to the Chesterfield Health District or the Southside Health District. Although Chesterfield’s health director and nurse manager were enthusiastic about the FIMR program, a prior commitment to a child health project and nursing staff shortages exhausted their personnel. The ability to start and sustain a FIMR program was to be evaluated in July 1997; however, to date, FIMR has not been instituted in Chesterfield. The director of the Southside Health District was also interested in FIMR. However, plans were made to review the area’s infant mortality and low birth weight rates before initiating a program.

The 1998–1999 statewide report provides information on three target sites: City of Petersburg, Mecklenburg County, and Westmoreland County. The focus was on Petersburg, and the other two sites would begin the FIMR process by the start of Year 02 of the Virginia Healthy Start Initiative. Table 23 (see appendix J) lists the 1994–1998 infant mortality rates for these sites and the state.


Due to the preliminary status of Chesterfield and Southside health districts as potential FIMR sites in Perinatal Region VI, mission goals and objectives were not prepared.

Accomplishments: The region identified the following accomplishments of its FIMR program:

- The established FIMR program in Richmond City would be helpful to a second site. Networks were already in place for case ascertainment, record review, and bereavement services. An established program would be a good source of problem-solving information and support.
- The current bereavement specialist was noted to be an excellent and creative resource for other FIMR programs.
- Several health professionals demonstrated good enthusiasm for the program. A solid commitment was needed from 5–6 persons in either potential site (Chesterfield or Southside) in order for FIMR planning efforts to progress in those areas.

In the Virginia Healthy Start Initiative FIMR Program annual report for September 1, 1998–August 31, 1999, three FIMR sites are identified in Perinatal Region VI: the City of Petersburg and the counties of Mecklenburg and Westmoreland. At that time, the Richmond City Health Department was independent of the state health department and administered the Richmond City Healthy Start Initiative. In turn, the Richmond City Healthy Start Initiative funded the Perinatal Region VI FIMR program and submitted data to the program’s community action team. The FIMR coordinator for Perinatal Region VI did not report the FIMR data because it was considered duplicate-data reporting; consequently, a lapse in data occurred during this time period. Because FIMR was a requirement for the RPC contract, aggregate data reporting to VDH was deemed appropriate and, therefore, required. Data reporting resumed in September 1999.

Perinatal Region VI had one FIMR coordinator who was based at the Petersburg Health Department and responsible for the region’s three sites: City of Petersburg, Mecklenburg County, and Westmoreland County. The varying differences in geography and community resources in these areas created a challenge for the regional coordinator. Thus, local part-time FIMR coordinators were hired in Westmoreland and Mecklenburg counties to assist with linkages. Due to the limitations of the health-care provider base in rural areas and to the proximity of Petersburg to Richmond, the regional care review team in Richmond was utilized for all of the region’s FIMR sites. This combined approach was advantageous because it lent diversity to the review and initiated more expedient case reviews.

Issues: In its 1998–1999 report, Perinatal Region VI identifies the following community issues:

- A lack of awareness among parents and caregivers about the Back to Sleep campaign.
- The lack of referrals from private OB/GYN offices for prenatal resources in the community.
- The lack of follow-up measures with families for genetic evaluation of infants with congenital anomalies.
- The lack of preconceptional health educational and family planning visits.
- The lack of community support services for grieving families.

Accomplishments: In the same report, Perinatal Region VI recounts the following implementations and strategies carried out in 1998–1999:

- Instituted the Back to Sleep campaign in the target community (not named in the report); consequently, door hangers (developed through FIMR in 1998) and campaign brochures were distributed to area hospitals, health departments, and all member agencies of Healthy Families.
- Developed a Prenatal Resource Referral Form for private physicians and visited physician offices to orient staff to the form.
• Developed a genetics assessment tool to be used when abstracting FIMR cases that meet criteria.
• Using funds from a March of Dimes grant, planned to initiate the Preconceptional Awareness Program to begin in fall 1999.
• Suggested plans to establish support services for grieving families. Consequently, a planning committee began exploring resources and interested partners for the development of these support services.

Summary of Activities: 1999–2000

According to the Virginia Healthy Start Initiative FIMR Program’s statewide annual report for September 1, 1999–August 31, 2000, each of the FIMR sites in the City of Petersburg and in Mecklenburg and Westmoreland counties had its own community action team. The Perinatal Region VI case review team (based in Richmond) continued to be successful in reviewing cases for all of the region’s sites. Table 24 outlines a summary of activities conducted in Petersburg and in Mecklenburg and Westmoreland counties during this time period.

Table 24. Perinatal Region VI – Summary of Activities from September 1, 1999–August 31, 2000

<table>
<thead>
<tr>
<th>Activity</th>
<th>City of Petersburg</th>
<th>Mecklenburg County</th>
<th>Westmoreland County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases</td>
<td>18</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Cases abstracted</td>
<td>14</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Cases with interviews</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
</tr>
<tr>
<td>CRT meetings</td>
<td>9/year</td>
<td>9/year</td>
<td>9/year</td>
</tr>
<tr>
<td>CAT meetings</td>
<td>4/year</td>
<td>1/year</td>
<td>4/year</td>
</tr>
<tr>
<td>Number of recommendations</td>
<td>11</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Number of actions</td>
<td>8</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

*Home visits restricted, due to the suspension of new human subjects in research activities at Virginia Commonwealth University in Richmond, VA.

Issues: The report also lists the following issues identified through the region’s FIMR process during this time period:
• The continued need for preconceptional education and care, including the need for folic acid in all women of childbearing age.
• The lack of pregnancy education classes.
• Late entry and inadequate prenatal care.
• The need for ongoing psychosocial support for women undergoing prenatal stress or suffering from an infant/fetal loss.
• The need for educating consumers and providers about the benefits of genetic counseling and pathology exams to help identify the causes of infant mortality.
• The need for providing community-wide SIDS education and, especially, targeting the next SIDS campaign to grandparents.
• The need for reducing the incidence of smoking during the perinatal period.
• A lack of bereavement support at the time of hospital discharge.
• A lack of provider and community awareness about services available in community.
• The presence of extreme obesity during pregnancy, with no referral for dietary counseling.
• A lack of communication among providers.
• The continued occurrence of a delay in the time when pregnant women identify changes in fetal movement and notify their health-care provider or arrive at the hospital’s labor/delivery department.
• A lack of documenting fetal-movement education among providers.
• The presence of work hazards for pregnant women and mothers employed in local factories.
• The lack of options for teens to receive pregnancy testing without fees or the obligation to attend religious education.
• The lack of low-literacy materials for pregnant women.

Recommendations: In the same 1999–2000 statewide report, recommendations for Perinatal Region VI include the following:
• Initiate a community-wide media campaign addressing the benefits of preconceptional and early-entry care practices.
• Encourage health-care providers to provide preterm labor education for all pregnant women.
• Educate providers about community resources.
• Continue to investigate new ways to disseminate prenatal and infant care to clients.
• Explore the feasibility of a hospital-based bereavement program in Mecklenburg County.
• Broaden the Back to Sleep campaign and information regarding SIDS and creating a safe-sleep environment for infants to include minority populations and grandparents.
• Assess whether a “Teen Hotline” is operational.
• Formalize the appointment system for the Healthy Start Initiative nutrition services program.
• Research health-education materials that are appropriate for low-literacy clients and supply these materials to area providers.

Accomplishments: The 1999–2000 statewide annual FIMR report also lists the following community actions accomplished by Perinatal Region VI during this time period:
• Planned a “Train the Trainer” event for Petersburg-area physician office nurses, hospital emergency room nurses, and public health nurses. The goal was to provide health-care professionals with information and resources they could use not only to educate pregnant women and new mothers but also to direct them with appropriate referrals. A resource file kit was also developed and delivered to area providers.

• Received a grant from the March of Dimes to support two preconception and early-entry-into-care initiatives for Petersburg.

• Developed eight, new, public-information flyers displaying different information/education messages that advocated preconception care and early entry into prenatal care and promoted related, upcoming community activities. The flyers were distributed throughout the year at health fairs and at a women’s health conference.

• Initiated efforts for the region’s CAT to explore the possibility of providing preconception and prenatal educational services through area employers in the City of Petersburg and Westmoreland County.

• Developed a plan to contact local publications and request an article that would help educate parents and caregivers of infants about SIDS, the Back to Sleep campaign, and safe-sleep environments for infants. Other area groups (e.g., the local United Way “Success by 6” program and the Virginia Cooperative Extension) would be approached to assist in SIDS and shaken-baby-syndrome awareness efforts (Petersburg).

• Made plans for a physician-visitation subcommittee to review low-literacy materials developed by the March of Dimes and other recommended materials.

• Provided a feasibility study—conducted by the Mecklenburg FIMR—of developing a service for bereaved families. Consequently, hospital administration staff and three area funeral directors agreed to help develop a perinatal-loss program. Also, one funeral director joined the region’s CAT.

• Developed alternative advertising measures (not specified in the report) to counteract poor attendance rates at childbirth classes that were developed in response to the lack of available educational opportunities in Westmoreland County. Obtained incentives for distribution at certain times during the pregnancy and at prenatal visits.

• In collaboration with Westmoreland County area groups (e.g., the Resource Mothers program and Family Matters), initiated the development of classes titled “Preconception,” “Early Pregnancy,” “New Baby,” and “Baby Safety.”
Summary of Activities: Number of Cases Reviewed 1998–2003

Table 25 displays the number of FIMR cases abstracted and reviewed, by year, in all sites of Perinatal Region VI during 1998–2003.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>39</td>
</tr>
<tr>
<td>1999</td>
<td>43</td>
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<tr>
<td>2000</td>
<td>44</td>
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<tr>
<td>2001</td>
<td>60</td>
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<tr>
<td>2002</td>
<td>53</td>
</tr>
<tr>
<td>2003</td>
<td>57</td>
</tr>
</tbody>
</table>
Perinatal Region VII – Eastern Virginia Perinatal Council

Located in the southeastern corner of the state, Perinatal Region VII contains several large urban areas and a strong military presence. The area is served by the Eastern Virginia Perinatal Council. Historically, Perinatal Region VII has had the highest rates of infant mortality in Virginia.

The Norfolk FIMR was established as a demonstration project in 1992–1993, which involved the review of 40 cases of fetal and infant deaths in Norfolk. In 1993, Norfolk received funding for two years as a National FIMR Program model. During the statewide 1996 planning year, Norfolk’s FIMR program underwent several transitions. National funding that ended in early 1996 forced the program to locate volunteer staff to replace funded positions. A new coordinator was named, and both review committees were reorganized. Essentially, the program had to repeat many of the activities required for the establishment of a new site (see the “Norfolk FIMR Summary of Activities: 1997–1998” section, below).

In 1996, the City of Chesapeake was identified as the second FIMR site in Perinatal Region VII. Consequently, in 1997, the area’s RPC began efforts to create a FIMR program in Chesapeake. However, as described below in this document, the program was not successfully established.

During Fiscal Year 1999, a FIMR program was developed in the City of Portsmouth in collaboration with the Virginia Healthy Start Initiative. Norfolk and Portsmouth were identified as target sites in 1999–2000 and again in 2001. Also, the March of Dimes awarded the area’s RPC a grant in 2003 to conduct low birth weight reviews in Norfolk.

Chesapeake FIMR Summary of Activities: 1997–1998

According to the Virginia Healthy Start Initiative Report for July 1997, the Chesapeake FIMR Program in Perinatal Region VII would seek to better understand the pattern and occurrence of fetal and infant deaths in the Chesapeake community (see appendix K) and would implement appropriate preventable intervention strategies. Despite identifying a mission statement, methodologies, review committee requirements, and strengths, a FIMR project was never fully implemented in Chesapeake, due to the lack of staffing resources.

Methodology—Case selection: All fetal deaths 20 weeks and more and infant deaths to 1 year of age would be reviewed. Case ascertainment would take place from infant death certificates located at the Chesapeake Health Department.

Maternal interview: Mothers would be contacted by letter. This initial contact would be followed by a telephone call or home visit by a FIMR-trained home health nurse to determine the mother’s interest in participating in an interview.
Chart review: A team of three health professionals would be responsible for reviewing all maternal and infant records. All local hospitals were contacted and agreed to permit access to their maternal and infant records for the purpose of FIMR abstractions.

Review committees—Case review team: CRT members were oriented to FIMR and reviewed their first case in early May 1997. Meetings would be held monthly at the Chesapeake Health Department, and approximately 3 cases would be reviewed at each meeting.

Community action team: The team would meet every 3 months. The member of this group would serve on either the CRT or CAT committees.

Accomplishments: The Virginia Healthy Start Initiative Report for July 1997 identifies the following accomplishments of the Chesapeake FIMR Program:

- Excellent commitment from the Chesapeake Health Department director.
- A motivated core FIMR group.
- Developed maternal interview consent form.
- Developed a list of bereavement resources.

Although there was interest in the proposed Chesapeake FIMR Program, the site did not continue and the program was never established.


As noted earlier, Perinatal Region VII has historically had the highest rates of infant mortality in Virginia (see appendix L).

In its mission statement, the Norfolk FIMR Program in Perinatal Region VII resolves to illuminate preventable factors in perinatal morbidity and mortality that, utilized by the area’s community, would effect changes to improve the outcomes of childbearing families in the city of Norfolk. Additionally, the program would develop a process of fetal infant mortality review that can serve as a flexible model for implementation in other communities in the Eastern Virginia Perinatal Region.

The Norfolk FIMR Program also established the following goals:

- Identify true at-risk populations and contributing factors for fetal infant mortality using a combination of birth and death certificate information, home interviews with families experiencing a perinatal loss, comprehensive multi-institutional medical record abstraction, and geomapping.
- Along with representatives from the community, make recommendations, based upon case reviews, for changes within the community that will result in a reduction of fetal infant mortality.
- Interface with current established programs (e.g., the March of Dimes in Norfolk, the Eastern Virginia Perinatal Region, and State of Virginia efforts) that are dedicated to improving perinatal outcomes.
In addition, the Norfolk FIMR Program created the following objectives:

- Collect and analyze perinatal data that is specific to Norfolk and assembled by the multidisciplinary case review team, which includes key individuals in Norfolk and the Eastern Virginia Perinatal Region (roles of individuals not noted).
- With technical assistance from the National FIMR Program, develop and refine a plan to improve data collection for ongoing reviews.
- With assistance from the National FIMR Program, develop a systematic plan for the evaluation of fetal deaths more than 20 weeks gestation in the City of Norfolk.
- Based on case review findings, make recommendations to Norfolk community members and policy makers through the community review board.
- Present the review program methodology and effectiveness to other communities in the Eastern Virginia Perinatal Region, to the Virginia Department of Health, and to the National FIMR Program.

Methodology—Case selection: Two methods would be used. The first method was the random selection of fetal deaths at 20 weeks or more gestation and infants up to 1 year of age. Identification of cases would be from death certificates at the Norfolk Health Department. Mothers who qualify would receive letters explaining the FIMR program, followed by a telephone call or home visit by a FIMR-trained interviewer.

The second method was the self-selection of Norfolk mothers who met the above criteria and were known to local bereavement counselors. At an appropriate time, the counselors would offer the mother the opportunity to complete the FIMR maternal interview, which the counselor would be trained to conduct. FIMR data would be compiled so that a comparison could be made between random and nonrandom cases.

Maternal interviews: No one was identified to consistently fill the role of interviewer. Cases would not be reviewed unless a maternal interview was completed. These factors significantly impeded the overall progress of Norfolk’s FIMR program.

Chart review: A retired volunteer neonatologist abstracted all fetal and infant death cases through June 1997.

Review committees—Case review team: A new CRT was assembled and scheduled to meet for the first time in June 1997. Meetings were planned for every other month, with approximately 4 reviews to be completed at every meeting. Each CRT member was asked to send a substitute if he/she was unable to attend a meeting.

Community action team: The CAT roster was completed, with plans to meet every 3–6 months, beginning late fall 1997.

Barriers: The Norfolk FIMR Program in Perinatal Region VII faced the following barriers:

- The need for more time.
• Difficulty in recruiting home interviewers.
• The need for a pathologist to join the CRT.
• The need to provide the community with periodic updates about the program.

Recommendations: The Norfolk FIMR Program developed the following strategies to overcome the above barriers:
• If funds become available, recruit additional volunteers and hire a coordinator for Norfolk’s FIMR program.
• Request assistance from Norfolk Health Department nurses and members of the local bereavement council.
• Ask the local medical examiner to serve on the CRT.
• Develop a 1-page fact sheet outlining Norfolk statistics and information about the FIMR program.
• Follow the statewide FIMR coordinator’s suggestion to develop biannual mailings in the form of a simple newsletter for community members who are interested in Norfolk’s FIMR program. Use Florida’s 1-page FIMR community newsletter as an example and consider enlisting a graduate nursing student or journalism student to assist with the project.

Accomplishments: The Norfolk FIMR Program listed the following accomplishments:
• Excellent community interest in and support for FIMR.
• A well-established system of case ascertainment, record review, and meetings.
• A FIMR bereavement task group actively addressed gaps in region-wide services.
• The program’s coordinator reorganized review teams and began efforts to revise goals.
• Norfolk health care professionals expressed interest in the FIMR program, and neonatal/pediatric transport meetings routinely included discussions on the program.


According to the Healthy Start Initiative FIMR Program’s annual statewide report for September 1, 1998–August 31, 1999, both Portsmouth and Norfolk are listed as FIMR sites.

Barriers: The report describes the following barriers to the Perinatal Region VII FIMR process:
• Delayed identification of death certificates, from 2–4 months after the death, which affected the window of opportunity to secure a home interview.
• Difficulty in contacting people in such a mobile and transient community.
• The presence of a large percentage of economically depressed families, many of whom do not have a telephone and move from one relative’s home to another.
• The apparent tendency of many families of teen mothers to cluster around the teen mother and not allow her to speak to anyone outside of the family about the death event.
• Impediments created by military personnel and changes in delivery services. Beginning June 1999, all pregnant military dependents and active-duty military personnel delivered at a military facility, whereas care was previously given by local providers; consequently, the difficulty to access records at the military facility posed a problem.
• Due to confidentiality issues, an unwillingness among area hospitals to assist with case identification, which impeded case identification and the ability to secure a timely interview.
• The need for additional home interviewers in both the Norfolk and Portsmouth sites.

Issues: The 1998–1999 annual statewide report also identifies the following community issues in Perinatal Region VII:
• A continued increase in the rate of fetal and infant deaths among African Americans.
• A limited supportive network for U.S. Navy personnel, especially entry-level personnel and noncommissioned officers.
• The lack of information provided to older caregivers (e.g., grandparents) about the Back to Sleep campaign and safe-sleep environments for infants.
• The lack of preterm labor information provided in an appropriate time frame.
• The lack of prepregnancy health information.

Accomplishments: The same 1998–1999 report outlines the following actions taken to overcome the above barriers to Perinatal Region VII’s FIMR process:
• Sought alternative sources for case identification. State and local vital statistics data served as a quality assurance mechanism and facilitated in the identification of hospitals with delayed reporting for death certificate information.
• With local input and in an effort to increase the number of maternal interviews, refined the FIMR Information for Families pamphlet and included it in the bereavement folder at some of the area hospitals. Also, initiated plans to create a sympathy card to replace the FIMR letter.
• Attempted to contact teen mothers during the evening hours, which provided some success.
• Formalized a strategic plan—developed by the local and state FIMR coordinators—to work with the military hospital community.
• Increased participation of the region’s FIMR and RPC coordinators on a variety of community committees in order to increase the visibility of FIMR and the infant mortality risk-reduction activities of the area’s RPC. Also, began the development of a local newsletter and RPC Web site to disseminate information on the program’s function and successes.
The same report does not include recommendations and actions for Perinatal Region VII during this time period.

**Summary of Activities: 1999–2000**

In the Virginia Healthy Start Initiative FIMR Program’s annual activity report for September 1, 1999–August 31, 2000, Norfolk and Portsmouth are again listed as active FIMR sites for Perinatal Region VII. Table 28 outlines a summary of activities for each of these two sites.

<table>
<thead>
<tr>
<th>Activity</th>
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<th>City of Portsmouth</th>
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</thead>
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<tr>
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</tr>
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<td>Cases abstracted</td>
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</tr>
<tr>
<td>Cases with interviews</td>
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<td>7</td>
</tr>
<tr>
<td>CRT meetings</td>
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<td>CAT Meetings</td>
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<td>0/year</td>
</tr>
<tr>
<td>Number of recommendations</td>
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<td>9</td>
</tr>
<tr>
<td>Number of actions</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Issues:** The 1999–2000 report also lists the following issues that were identified through Perinatal Region VII’s FIMR process:

- The need for SIDS risk-reduction strategies at the community level, particularly daycare providers and minority populations.
- The need to provide older caregivers—particularly grandparents—with information about the Back to Sleep campaign and safe-sleep environments for infants.
- Late-entry and inadequate prenatal care.
- A continued delay in the time when women identify changes in fetal movement and notify their health-care provider or arrive at the hospital’s labor/delivery department.
- The lack of documenting fetal-movement education among health-care providers.
- A lack of awareness among health-care providers and the community about available, local services.
- The need for prevention programs addressing unplanned and unwanted pregnancies.
- The need for ongoing psychosocial support for women undergoing perinatal-loss stress or suffering from a fetal/infant loss.
- The lack of awareness about the benefits of folic acid.
• The lack of prenatal education.
• Little or no family support for U.S. Navy personnel, especially for low-ranking military personnel and their dependents.
• An ongoing racial disparity in infant mortality rates.
• The lack of communication among providers of care.
• A documented obesity factor (excess of 250–320 pounds) in cases with no referrals for nutritional services.
• The need to explore issues of hospice care for terminally ill infants.
• The lack of referrals for high-risk pregnancies.
• A need for prenatal cultures.
• The lack of referrals for mothers with substance-abuse tendencies and behaviors.

Recommendations: The same 1999–2000 report presents the following recommendations for Perinatal Region VII’s FIMR program:

• Develop creative ways to educate the public about the Back to Sleep campaign. Distribute the information in areas where the target population (not noted) gathers (e.g., health spas, family practice offices, and churches).
• Encourage timely prenatal care visits.
• Educate the public about the importance of prenatal care.
• Alert obstetric providers that the region’s FIMR clients reported their provider either did not offer any preterm labor instruction or supplied untimely information.
• Advise insurance companies that mothers often receive pertinent information too late in their pregnancies.
• Supply all providers with printed information regarding community services.
• Advise health-care providers that, many times, patients are not referred to needed services.
• Advise community members of available resources.
• Encourage improved communication and relationships between the client and her OB/GYN physician and office staff.
• Develop a “buddy” system or an improved one-on-one support network for bereaved parents.
• Increase awareness about health complications related to obesity, especially during pregnancy.

Accomplishments: The same statewide FIMR report for September 1, 1999–August 31, 2000, also lists the following community actions carried out by Perinatal Region VII:

• Initiated plans to develop a Back to Sleep task force made up of members from the region’s CAT. Also, planned to include other group leaders (not specified) to share ideas about developing written information and address how and where to distribute information to reach the target population (not specified).
• Collaborated with the Consortium for Infant and Child Health to create billboards, flyers, and wallet cards that encourage mothers to learn the symptoms of preterm labor and obtain good prenatal care.

• Planned to meet with religious leaders and with counselors from middle/high schools and teen pregnancy centers to develop a list of ways to encourage pregnant teens to seek and maintain good prenatal care. The information would be presented at Perinatal Region VII’s CAT meetings in order to develop strategies.

• Hosted two Eastern Virginia Perinatal Council Low Birth Weight Action Committee conferences (1998 and 1999), which featured guest speakers addressing issues related to preterm delivery, low birth weight, and poor prenatal care.

• Resolved to develop a plan that would use funds to survey obstetrical offices about their preterm-labor educational practices and to offer preterm-labor instruction to a pilot group of offices. A quiz would be administered before and after the instruction and used as an evaluation tool.

• The region’s FIMR coordinator distributed pamphlets, door hangers, and stickers developed by the American Academy of Pediatrics (topic of information not specified) to area physicians, including mammogram providers.

• Worked with case managers from several insurance companies to develop ways to shorten the time frame between when a mother registers with an obstetrical provider and when notification is sent to her insurance company.

• Created a task force to address the lack of provider and community awareness about available local resources.

• Met with two bereavement support group leaders regarding the development of a “buddy” list for bereaved parents and planned to meet with other support group leaders for ideas to enhance this project.

• The region’s FIMR coordinator contacted several area providers regarding obesity and nutrition and planned to share the resulting information at the region’s CAT meeting.

• Resolved to develop a Racial Disparity Task Force for Perinatal Region VII. Also, the region’s FIMR coordinator discussed racial-disparity issues with local religious leaders and invited them to join the CAT meeting (scheduled for January 2001). Additionally, the region’s FIMR coordinator continued to gather information from other areas regarding how they increased public awareness about racial disparity and what measures they introduced to reduce the disparity.

• Due to prolonged efforts initiated by the region’s FIMR coordinator, secured a solid foundation of support and representation from the Portsmouth Naval Hospital. The military representation was critical to attain because many of the fetal and infant deaths in the Norfolk and Portsmouth areas occur in military families.

• Created a FIMR sympathy card (designed by the region’s FIMR coordinator) to be used as an introduction to the home visit. The card was positively
received by the parents and increased their willingness to participate with FIMR.

- Maintained ongoing efforts to overcome barriers restricting the case-identification process in both the Norfolk and the Portsmouth FIMR programs. Due to concerns about patient confidentiality, some hospitals and private health-care providers refused to share infant-death information. Meetings with hospital administrators were futile. However, one-on-one meetings between the region’s FIMR coordinator and representatives from area care-provider offices to explain the FIMR process and provide an informational packet proved successful with some, but not all, offices.
- Continued to experience delays – from 2-3 months after the death – in locating the death certificate.
- Continued to experience limited access with such a mobile and transient community that often included people who did not have telephones. Because the regional FIMR coordinator was the only maternal interviewer for both sites, considerable time was expended in trying to locate families for participation in the region’s FIMR program.
- Due to staffing problems at the Norfolk and Portsmouth health departments, did not receive their assistance in locating families or arranging maternal interviews.


No reports were located for 2001.


For 2002–2003, the state’s FIMR Microsoft® Access database lists 52 cases for Perinatal Region VII’s FIMR programs in Norfolk and Portsmouth. Of these 52 cases, 34 were infant deaths, 17 were fetal deaths, and 1 was classified as morbidity (low birth weight). All cases were abstracted. Twenty-three home interviews were completed, 22 were refused, and 7 were pending. Among the 45 cases reviewed by the CRT, 6 were pending, and the status of one case was unknown.

Issues: During this time period, the following issues were identified in Perinatal Region VII:

- Late entry to prenatal care and/or missed appointments for various reasons (e.g., unaware of pregnancy, delay of Medicaid card).
- Teen pregnancy; missed Depo-Provera shot (a long-acting progestin form of birth control).
- Morbid obesity with few, if any, nutritional consults.
- No referral to perinatologist for high-risk pregnancy.
- The lack of education regarding kick counts and fetal movement.
- The lack of education about signs and symptoms of preterm labor.
- Substance abuse (illicit drugs and tobacco).
- Poverty.
• Homelessness.
• Unsafe sleep environment (cobedding and use of pillow).
• Questionable compliance of mentally challenged mother with prescribed medications.
• The lack of education regarding signs and symptoms of preeclampsia.
• Unsafe work environment (pregnant mother on feet for long periods of time).
• Mothers new to the community and unfamiliar with available services.
• The lack of family support.
• The lack of education regarding when to call obstetrician (signs and symptoms of infection).
• The lack of referrals to programs such as Resource Mothers.
• Mothers not aware of the importance of folic acid.

Recommendations: Perinatal Region VII developed the following recommendations for its FIMR program:
• Increase awareness of the importance of early and timely prenatal care.
• Increase awareness of parenting classes in the area.
• Through the Access to Care Committee, improve the Medicaid application process.
• Improve community awareness about insurance options.
• Meet with school nurses and administration (agenda not noted).
• Increase awareness of the risks of obesity.
• Develop ways to improve public awareness about hypertension prevention and nutritional support in obstetrical offices.
• Encourage obstetrical offices to provide education about fetal movement and kick counts.
• Continue educational campaign on preterm labor signs and symptoms.
• Increase awareness about the risks of substance abuse during pregnancy; contact local community services boards.
• Develop community awareness about choices and identifying high-risk behaviors.
• Increase awareness of the effects of sexually-transmitted diseases during pregnancy.
• Continue to promote the Back to Sleep campaign and information about safe-sleep environments for infants.
• Have a special-education-trained person accompany the mentally challenged mother to physician visits.
• Develop ways to identify new members of the community in order to provide them with support and assistance.
• Provide obstetrical offices with brochures about the Resource Mothers program.
• Continue implementing the folic acid campaign.

Conclusion
The original intent of this paper was to document, in detail, the first two years of the FIMR program in Virginia, by perinatal region (1996–1998), and then summarize the following five years. However, a variety of circumstances—such as differences in data collection by region; staff turnover at the local and state levels, at times due to budget constraints; lack of consistent and timely reporting, in some circumstances due to a lack of personnel; and missing reports—led to a different format.

Despite population and geographic differences among the state’s perinatal regions, many issues identified by region are actually statewide concerns. The issues include late entry to prenatal care; the lack of timely visits; the lack of referrals to a perinatologist for high-risk pregnancies; and the lack of education about folic acid, the signs and symptoms of preterm labor, fetal movement, kick counts, when to call the obstetrician, the signs and symptoms of preeclampsia, and the Back to Sleep campaign and safe-sleep environments for infants. Additionally, a need exists for nutritional counseling and prevention of obesity, physician awareness, and referrals to community resources.

Implementing recommendations requires an enormous amount of time, energy, and personnel. Furthermore, due to the lack of outcome data, evaluating the effectiveness of the implementations is difficult. Perhaps on subsequent regional FIMR reports, data can be more specific and include factors such as start and stop dates, the number of individuals invited to events, the number of actual participants, and evaluation data from the participants. Use of the same evaluation tool by all FIMR regional coordinators will assist in the evaluation process.

Documentation needs to be more consistent. Regional FIMR reports often note that an interview or case review is pending, although the case is several years old. One perinatal region records all reported FIMR cases, even if the case is not followed up on due to gestation or the mother living out of state. Other perinatal regions record only cases that are followed up on through the FIMR process. One perinatal region has a secondary FIMR site, but documentation involves only the primary site, making it unclear how often the second site’s CRT meets and how cases are chosen for review.

Likewise, it is unclear who actually serves on regional FIMR case review teams. CRT members need to be committed and must attend the reviews. Busy personnel may indicate an interest, but they should not be listed as CRT members unless they consistently attend reviews and provide feedback based on their expertise.

The report presented here identifies not only the accomplishments but also the process issues related to managing Virginia’s FIMR program. Since 1997, the VDH Office of Family Health Services–Division of Women’s and Infants’ Health has contracted with lead agencies in the state’s regional perinatal councils to implement a FIMR program in each region. During 1988, the Statewide Perinatal Services Plan was revised; however, the updated plan did not specifically evaluate or recommend changes to the original regional boundaries that were adopted in 1983. The plan has not been revised since 1988. Additionally, the Statewide Perinatal Services Advisory Board was
dissolved in 1992 and replaced by the state’s Maternal and Child Health Council, which was appointed by the governor and did not relate to the perinatal councils. During 2002, Virginia’s Boards and Commissions recommended that the Maternal and Child Health Council be eliminated. The Office of Family Health Services–Division of Women’s and Infants’ Health continued to support the concept of regional perinatal councils and the FIMR process.

Statewide and local agencies, as well as individual professionals and community members in each perinatal region, remain committed to the FIMR process in Virginia. Their passion for continuing the Virginia FIMR Program and improving statewide health care for mothers and their families is especially evident in ongoing efforts to help perinatal regions struggling to overcome barriers related to funding needs and the lack of personnel. For the FIMR program to truly succeed in Virginia, consistent funding, commitment, and leadership are essential.
References


State Perinatal Services Advisory Board. (1988). *Statewide Perinatal Services Plan.* Richmond, VA


**Other References**


Virginia Healthy Start Initiative Briefing Book, Site Visit July 1997

Virginia Healthy Start Initiative Continuation Grant, May 1998
Appendices
Appendix A

Perinatal Regions:
Component Counties and Independent Cities
Commonwealth of Virginia, 1999
Appendix B

Table 3. Natural Fetal Deaths at 20 Weeks or More Gestation (per 1,000 Live Births + Fetal Deaths) in State of Virginia and the United States 1990–2002

<table>
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<th>Year</th>
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Sources: Virginia Center for Health Statistics and National Center for Health Statistics
Appendix C

Perinatal Region I – Percent of Births with Congenital Anomalies, by County, City of Norton, and State of Virginia

Appendix D
Perinatal Region II – Infant Deaths by Maternal Residence, 1999-1995

Appendix E

<table>
<thead>
<tr>
<th>Year</th>
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Source: Virginia Center for Health Statistics

Appendix F
Table 11. Perinatal Region II – Number of Fetal Deaths (> 20 Weeks Gestation), by Maternal Residence 1989–1995

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Source: Virginia Center for Health Statistics

Note: Fetal death rate not available

Appendix G
### Table 19. Perinatal Region V – Neonatal* Death Rates (per 1,000 Live Births), by Race 1991–1995

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<thead>
<tr>
<th>Year</th>
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*Neonatal = 0–28 days  
Source: Virginia Center for Health Statistics

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**Appendix H**
Table 20. Perinatal Region V – Infant Mortality Rates (per 1,000 Live Births), by Race 1991–1995

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<th>Year</th>
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Source: Virginia Center for Health Statistics
Table 21. Perinatal Region V – 1996 Neonatal* Deaths, by Birth Weight (in Grams)

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<tr>
<th>Birth weight</th>
<th>&lt; 500</th>
<th>500–1000</th>
<th>1000–1500</th>
<th>1500–2500</th>
<th>2500–3500</th>
<th>&gt; 3500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of deaths</td>
<td>4</td>
<td>18</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>1</td>
</tr>
</tbody>
</table>

*Neonatal = 0–28 days

Appendix J
Table 23. Perinatal Region VI – Infant Mortality Rates (per 1,000 Live Births), by State of Virginia, City of Petersburg, and Mecklenburg and Westmoreland Counties 1994–1998

<table>
<thead>
<tr>
<th>Year</th>
<th>State of Virginia</th>
<th>City of Petersburg</th>
<th>Mecklenburg County</th>
<th>Westmoreland County</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>8.2</td>
<td>9.9</td>
<td>8.5</td>
<td>10.0</td>
</tr>
<tr>
<td>1995</td>
<td>7.7</td>
<td>27.0</td>
<td>10.6</td>
<td>5.7</td>
</tr>
<tr>
<td>1996</td>
<td>7.6</td>
<td>18.1</td>
<td>0</td>
<td>30.3</td>
</tr>
<tr>
<td>1997</td>
<td>7.8</td>
<td>9.5</td>
<td>5.3</td>
<td>10.6</td>
</tr>
<tr>
<td>1998</td>
<td>7.4</td>
<td>15.7</td>
<td>16.1</td>
<td>0</td>
</tr>
<tr>
<td>5-year average</td>
<td>7.7</td>
<td>16.0</td>
<td>8.1</td>
<td>11.3</td>
</tr>
</tbody>
</table>

Source: Virginia Center for Health Statistics

Appendix K
Table 26. Perinatal Region VII – Number of Fetal Deaths (≥ 20 Weeks Gestation) in Chesapeake, by Race 1994–1995

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>White</th>
<th>Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>14</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>1995</td>
<td>17</td>
<td>11</td>
<td>6</td>
</tr>
</tbody>
</table>

Appendix L
Table 27. Perinatal Region VII – Infant Mortality Rates (per 1,000 Live Births), by State of Virginia, Eastern Virginia Perinatal Region, and City of Norfolk 1989–1994

<table>
<thead>
<tr>
<th>Year</th>
<th>State of Virginia</th>
<th>Eastern Virginia Perinatal Region</th>
<th>City of Norfolk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>Not noted</td>
<td>Not noted</td>
<td>16.2</td>
</tr>
<tr>
<td>1990</td>
<td>10.2</td>
<td>Not noted</td>
<td>19.6</td>
</tr>
<tr>
<td>1991</td>
<td>10.0</td>
<td>Not noted</td>
<td>13.0</td>
</tr>
<tr>
<td>1992</td>
<td>9.3</td>
<td>Not noted</td>
<td>17.9</td>
</tr>
<tr>
<td>1993</td>
<td>8.6</td>
<td>Not noted</td>
<td>13.1</td>
</tr>
<tr>
<td>1994</td>
<td>8.2</td>
<td>9.6</td>
<td>12.8</td>
</tr>
</tbody>
</table>

Source: Virginia Center for Health Statistics