



## **A Study on Health Education and Teen Perinatal Outcomes to Meet the Requirements of HCR 53**

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October 2009

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## Executive Summary

West Virginia Community Voices, Inc. contracted with Edvantia, Inc., to conduct a two-phase study between August and October 2009. The purpose of this study is to meet the requirements of the House Concurrent Resolution No. 53 (HCR 53). The following excerpt from HCR 53 identifies the Legislature's intent:

It is the Legislature's intent to reduce poor outcomes for women under twenty years of age by conducting a study comparing perinatal outcomes and perinatal and parenting educational opportunities. . . . The study will assist in identifying one or more county school systems that could serve as models of perinatal education for the State, and will allow for the development of recommendations to address the State's poor birth outcomes for this age group. . . . A core curriculum should be developed through an analysis comparing the curriculum to certain perinatal health outcomes such as infant mortality, low birth weight, infant morbidity and other indicators . . .<sup>1</sup>

Researchers conducted a two-part study to meet the requirements of HCR 53. In the first phase of the study, researchers identified the counties with the best perinatal health outcomes. During the second phase of the study, researchers collected and reviewed information regarding teen reproductive and perinatal health curricula from twelve high school health and Family and Consumer Science (FACS) teachers in five target counties.

Hardy, Jefferson, Lewis, Monroe, and Pleasants counties were identified as the West Virginia counties with the most favorable outcome data across a 6-year time period (2003 to 2008) on the following indicators: percentage of births to teenage mothers; babies with low birth weight born to teen mothers; births by teen mothers resulting in second, third, or fourth child; and teen mothers who smoked during pregnancy. For most of these five counties, occurrence of indicators was ranked below the state average.

A cross-county analysis revealed that health curriculum in Favorable Outcome counties most often addresses the following content areas: female/male reproduction; sexually transmitted disease; planning and nutrition for healthy pregnancy; responsibilities of parenting; social pressure and influence; contraception methods; and the effects of alcohol, tobacco, and addictive drugs on developing fetuses. All general health education teachers who were interviewed were certified to teach health and most had several years ( $\geq 20$ ) of experience teaching health in schools. Teachers employed various methods of instruction to teach these topics, including lecture, videos, student presentation, class discussion, projects and research papers, and technology. Most health teachers who were interviewed provided students with general information on content areas and then provided opportunities for students to self-explore and further their own learning. Teachers often reported their use of resources outside the school setting, including student participation in open houses at local health centers and collection of information on current health issues from community agencies. Guest speakers from local and state agencies also presented information in Favorable Outcome county classrooms. The most evident difference across the five Favorable Outcome counties was the definition of a class unit. Some county requirements included 90 minutes of general health every day for one semester while others occurred as a Carnegie unit.

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<sup>1</sup> <http://www.legis.state.wv.us/>

Four Family and Consumer Science (FACS) courses have been offered in Favorable Outcome counties from 2003 to 2008 (data were not available for 2009 school year): Life Connections, Parenting and Strong Families, Parenting and Child Development, and Adolescent Parent Program. Although general health education courses address perinatal education to a certain extent, these FACS courses focus primarily on perinatal content, including the following: readiness for parenting; deciding to become a parent; impacts of heredity and environment on prenatal and early childhood human growth and development; the effects of pre-pregnancy, prenatal, and postnatal nutrition on health and wellness; understanding the roles and responsibilities of parenting; methods of contraception; birthing choices; alternative choices related to conception; and prenatal development and birth. Health and FACS teachers in the five counties believed that the health and FACS curricula's attention to perinatal aspects is a contributor to the county's favorable perinatal outcome data.

## Introduction

West Virginia Community Voices, Inc. contracted with Edvantia to conduct a two-phase study between August and October 2009. The purpose of this study is to meet the requirements of the House Concurrent Resolution No. 53 (HCR 53). The Joint Committee on Government and Finance requested an identification and study of model curricula in perinatal health education for the purpose of planning and making improvements in perinatal and birth outcomes for both parents 20 years of age and under and their newborn infants.

West Virginia Community Voices began as a national demonstration project of the W.K. Kellogg Foundation to give the community a voice in the development of policies and programs to improve health and health care access for uninsured and underserved populations.<sup>2</sup> The West Virginia Perinatal Partnership is a project of the West Virginia Community Voices. Since 2006, the West Virginia Perinatal Partnership has studied and made policy recommendations to improve West Virginia perinatal health. A current goal of the Perinatal Partnership is to study and identify the causes of poor birth outcomes and ways to improve them.<sup>3</sup>

As is the case nationally, West Virginia women under the age of 20 have higher rates of premature births, low birth rates, and infant mortality than older women; this rate in West Virginia has been increasing higher than that of the national average. Additionally, the majority of poor birth outcomes in women under 20 years of age are directly related to a lack of knowledge and misinformation about how to have a healthy pregnancy and a healthy baby. The Legislature suggests access to adequate perinatal health, life skills, and wellness education would improve opportunities for students to make informed decisions about planning for a health pregnancy and parenting. This can also be accomplished through professional development for health educators, along with additional space for the purpose of conducting health classes in the school system.<sup>4</sup> The following excerpt from HCR 53 identifies the Legislature's intent:

It is the Legislature's intent to reduce poor outcomes for women under twenty years of age by conducting a study comparing perinatal outcomes and perinatal and parenting educational opportunities. . . . The study will assist in identifying one or more county school systems that could serve as models of perinatal education for the State, and will allow for the development of recommendations to address the State's poor birth outcomes for this age group. . . . A core curriculum should be developed through an analysis comparing the curriculum to certain perinatal health outcomes such as infant mortality, low birth weight, infant morbidity and other indicators . . .<sup>5</sup>

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<sup>2</sup> <http://www.wvvoices.org/>

<sup>3</sup> <http://www.wvperinatal.org/>

<sup>4</sup> <http://www.legis.state.wv.us/>

<sup>5</sup> <http://www.legis.state.wv.us/>

## Study Design and Methods

Researchers conducted a two-part study to meet the requirements of HCR 53. In the first phase of the study, researchers identified the counties with the best perinatal health outcomes. During the second phase of the study, researchers collected and reviewed information regarding teen reproductive and perinatal health curricula from twelve high school health and Family and Consumer Science (FACS) teachers in five target counties.

### Phase 1

The research team compiled longitudinal data on 26 key perinatal indicators for women up to 20 years of age. For a list of indicators, see Table 1 below. To account for trends and low-incidence measures, 6 years of data (2003 to 2008) were obtained for each county; these data were accessed from the Health Statistics Center at the West Virginia Department of Health and Human Resources (WV DHHR). The measures were culled down to those with the largest variance, then culled again by the West Virginia Perinatal Partnership to those most likely to be affected by good health education and prenatal education.

A subset of four key indicators was identified to sort the 55 counties into groups with similar characteristics. A hierarchical cluster analysis was conducted to identify counties that had the best health outcomes; these Favorable Outcome counties were targeted for phase 2 of the study.

Table 1. Health Indicators

Health Indicators	
Teen Births**	Eclampsia*
Low Birth Weight**	Febrile
Infant Mortality*	Meconium
C-Section*	Premature Rupture of Membrane
Second Child**	Placenta Previa
Smoking During Pregnancy**	Excessive Bleeding*
Complications of Labor and/or Delivery*	Seizures During Labor
Abruptio Placenta	Prolonged Labor*
Infant Transferred After Delivery*	Breech/Misrepresentation
More Than One Delivery (twins, triplets, etc.)	Cephalopelvic Disproportion*
Gestational Diabetes*	Anesthetic Complication
Chronic Hypertension	Fetal Distress*
Pregnancy Associated Hypertension*	Dysfunctional Labor*

\* Indicators selected for review.

\*\* Indicators selected for analysis.

Phase 1 also involved other types of secondary data collection. Researchers gathered and organized county school data on high school enrollments in Family and Consumer Science courses (e.g., Life Connections, Parenting and Child Development, Parenting and Strong Families, and Adolescent Parent) from 2003 to 2009; these data were obtained from the West Virginia Department of Education (WVDE). The numbers of community-based and school-based health centers within each county were also obtained from the WV DHHR and member organizations of the West Virginia Perinatal Partnership.

Additionally, the number of Adolescent Pregnancy Prevention Initiative (APPI) presentations was obtained for each county.

## Phase 2

During phase 2, researchers conducted phone interviews with eight out of fourteen high school health teachers and four out of nine Family and Consumer Science (FACS) teachers to examine curricula related to reproductive and prenatal health education. In order to qualify for high school graduation, students must complete one Health credit as defined by their school.<sup>6</sup> The West Virginia Department of Education identified eight learning standards for high school health education. Four of the eight standards include objectives that address perinatal outcomes. Table 2 presents these standards and objectives. For a full list of health content standards and objectives (CSOs), see Appendix A.

Table 2. Health Content Standards and Objectives (CSOs)

Topic	Standard	Objective
Health Promotion and Disease Prevention	Students will comprehend concepts related to health promotion and disease prevention to enhance health (HE.S.1)	Students will <ul style="list-style-type: none"> <li>differentiate between the causes of communicable (e.g., STDs, HIV/AIDS) and noncommunicable (e.g., heredity, lifestyle) diseases. (HE.HS.1.04)</li> <li>identify and apply skills to prevent communicable and noncommunicable diseases. (HE.HS.1.05)</li> </ul>
Culture, Media, and Technology	Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors (HE.S.2)	Students will <ul style="list-style-type: none"> <li>analyze how peers influence healthy and unhealthy behaviors (e.g., positive and negative peer pressure). (HE.HS.2.05)</li> </ul>
Communication	Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks (HE.S.4)	Students will <ul style="list-style-type: none"> <li>utilize skills for effective communication in discussions concerning ATOD, nutrition, sexuality, and relationships with peers, family and others. (HE.HS.4.01)</li> <li>identify potentially harmful situations (e.g., domestic violence) and devise strategies and develop skills to avoid such situations through refusal, negotiation, and collaborations skills. (HE.HS.4.04)</li> </ul>
Decision Making	Students will demonstrate the ability to use decision-making skills to enhance health (HE.S.5)	Students will <ul style="list-style-type: none"> <li>identify and discuss health concerns that require collaborative decision making (e.g., sexuality, STDs) (HE.HS.5.02)</li> <li>analyze the effects of potentially harmful decisions that impact health and the effect these decisions have on their family, community, and self (ATOD use, STD transmission, pregnancy prevention, teen parenting) (HE.HS.5.03)</li> </ul>

<sup>6</sup> <http://wvde.state.wv.us/institutional/CountyGradRequire.html>

Researchers collaborated with the West Virginia Perinatal Partnership to develop a list of necessary topics in a teen reproductive and perinatal health curriculum to be used as a guide for interview protocol development and document review. For this list, see Table 3.

Table 3. Effective Health Education Curriculum Topics

<b>Necessary Topics in a Teen Reproductive and Perinatal Health Curriculum</b>	
1	Contraception methods
2	Process of ovulation, menstruation, fertilization of human ova, manufacturing sperm
3	Planning and nutrition for a healthy pregnancy
4	Importance of vitamin supplements prior to becoming pregnant
5	Effects of alcohol, tobacco, and or addictive drugs on developing fetus
6	Sexually transmitted diseases
7	Importance of accessing maternity care within the first trimester
8	Nutritional needs of developing fetus
9	Process of lactation and importance of breast milk

Best practices for effective health education, as identified by the U.S. Center for Disease Control and Prevention (CDC), were also used to develop interview questions and guide document review. For a list of best practices to be included in effective health education curricula, see Table 4.

Table 4. Best Practices of an Effective Health Education Curriculum

<b>Best Practices Identified by CDC</b>	
1	Focuses on clear health goals and related behavior outcomes
2	Is research-based and theory-driven
3	Addresses individual values and group norms that support health-enhancing behaviors
4	Focuses on increasing personal perceptions of risk and harmfulness of engaging in specific health risk behaviors and reinforcing protective factors
5	Addresses social pressures and influences
6	Builds personal competence, social competence, and self-efficacy by addressing skills
7	Provides functional health knowledge that is basic, accurate, and directly contributes to health-promoting decisions and behaviors
8	Uses strategies designed to personalize information and engage students
9	Provides age-appropriate and developmentally appropriate information, learning strategies, teaching methods, and materials
10	Incorporates learning strategies, teaching methods, and materials that are culturally inclusive
11	Provides adequate time for learning and instruction
12	Provides opportunities to reinforce skills and positive health behaviors
13	Provides opportunities to make positive connections with influential others
14	Includes teacher information and plans for professional development and training that enhance effectiveness of instruction and student learning

Phone interviews were conducted with high school health teachers and Family and Consumer Science (FACS) teachers in each Favorable Outcome county to gauge the use of best practices and curricular topics, along with qualifications of those who deliver the health curriculum. The interview consent form is included in Appendix B and the interview protocol is included in Appendix C. Contact

information for the health teachers was requested from the county superintendent or obtained from the school directory on the school's Web site. Twelve teachers were interviewed across the Favorable Outcome counties. Documents supporting health education curriculum were also requested from county coordinators and teachers. Teachers also had the opportunity to respond to the questions by e-mail, if time was not available for an interview.

County profiles were created for each of the Favorable Outcome counties by thematically analyzing and summarizing interview transcripts for both general health teachers and FACS teachers. Additionally, a summative analysis was conducted to compare the various practices across all five Favorable Outcomes counties.

## Findings

Study findings are organized by Phase. Phase 1 findings present (a) a description of the process used to identify Favorable Outcome counties, and (b) county-level descriptive statistics of perinatal health indicators. Phase 2 findings provide a description of the health education that is delivered to public high school students in each Favorable Outcome county.

### Phase 1 Findings

For the first part of phase 1, Edvantia researchers examined the distribution of county scores (in percentages) for 26 health indicators in order to identify key indicators to sort the 55 counties into groups with similar characteristics. Because incidence rates among indicators varied considerably, the relative standard deviation was calculated to standardize the variation among indicators. Table 5 presents descriptive statistics and variability (relative standard deviation or RSD) of the health indicators. The following indicators were excluded from further analyses because they were deemed by researchers as least likely to be improved by better health education: Abruptio Placenta, more than one delivery (twins, triplets, etc.), chronic hypertension, Febrile, Meconium, premature rupture of membrane, Placenta Previa, seizures during labor, breech/misrepresentation, and anesthetic complications.

Table 5. Perinatal Health Indicator Incidence Rates (in Percentage of Births to Teen Mothers)

Health Indicator Among Teens	Mean	SD	RSD	Range
Anesthetic Complication	0.03	0.31	1033.33	3.70
Seizures During Labor	0.02	0.19	950.00	2.86
Placenta Previa	0.15	0.85	566.67	10.00
Excessive Bleeding*	0.34	1.38	405.88	14.29
Chronic Hypertension	0.54	1.64	303.70	15.38
Eclampsia*	0.48	1.37	285.42	7.69
Prolonged Labor*	1.04	2.81	270.19	30.77
Abruptio Placenta	0.82	2.13	259.76	16.67
More Than One Delivery (Twins)	1.51	3.72	246.36	28.57
Dysfunctional Labor*	1.63	3.94	241.72	40.00
Infant Mortality*	1.14	2.46	215.79	23.08
Febrile	1.07	2.18	203.74	12.50
Premature Rupture of Membrane	1.66	3.19	192.17	22.22
Gestational Diabetes*	1.39	2.44	175.54	20.00
Infant Transferred After Delivery*	2.02	3.22	159.41	25.00
Cephalopelvic Disproportion*	2.39	3.57	149.37	20.00
Meconium	2.79	3.88	139.07	20.00
Breech/Misrepresentation	3.37	4.26	126.41	27.27
Fetal Distress*	4.15	4.95	119.28	30.00
Pregnancy Associated Hypertension*	5.42	5.55	102.40	37.50

Table 5 (continued).

Health Indicator Among Teens	Mean	SD	RSD	Range
Low Birth Weight**	10.23	7.27	71.07	42.86
Second Child**	15.74	8.09	51.40	66.67
Complications of Labor and/or Delivery*	34.34	14.12	41.12	100.00
C-Section*	26.45	10.82	40.91	65.00
Smoking during Pregnancy**	34.94	12.02	34.40	77.78
Teen Births**	12.65	3.25	25.69	22.29

\* Indicator selected for review.

\*\* Indicator selected for review and included in cluster analysis.

Researchers collaborated with the West Virginia Perinatal Partnership staff to select four<sup>7</sup> indicators for further analysis. This provided a list of indicators that would be most appreciatively influenced by good health education and prenatal education and care. The four indicators selected for analysis included

- Births to teenage mothers
- Babies with low birth weight born to teen mothers
- Births by teen mothers resulting in second, third, or fourth child
- Teen mothers who smoked during pregnancy

A hierarchical cluster analysis was conducted on the four key indicators to determine counties with similar characteristics. See Figure 1 below for the percentages of perinatal outcomes among clusters.

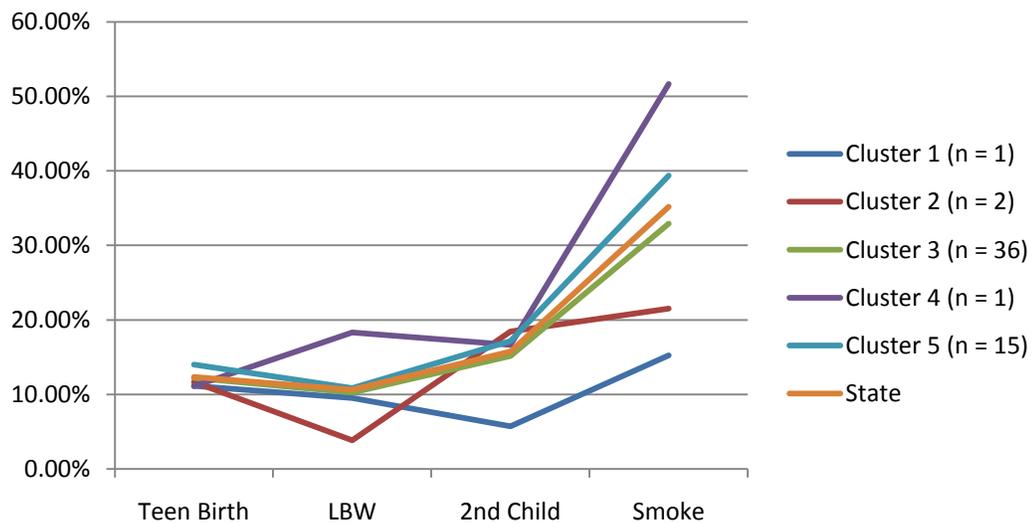


Figure 1. Percentages of perinatal health indicators among clusters, 2003-2008.

<sup>7</sup> Based on the sample size available, researchers were limited to including at most four indicators in the cluster analysis. This number of indicators was calculated using the following equation suggested by Formann (1984):  $n = 5 * 2^k$ , where  $n$  is the sample size and  $k$  is the number of variables.

The clusters were reviewed and ranked based on the cluster centers obtained from the cluster analysis. For example, the cluster with the lowest cluster center had the most favorable outcomes. Counties in cluster 1 and 2 (Hardy, Monroe, and Pleasants) had the most favorable outcome data on the four indicators and were targeted for phase 2 of the study. Because a number (36) of counties were included in cluster 3, researchers examined this cluster to identify counties that had low percentages on three of the four indicators *and* were showing steady improvement on the fourth indicator (smoking) over the 6-year period. Two counties—Jefferson and Lewis—from cluster 3 showed steady improvement across the 6-year time period and were selected for Phase 2 analyses. For county rank on key indicators, see Appendix D. See Table 6 for a breakdown of clusters by indicator.

Table 6. Phase 1 Cluster Analysis Results

County	Teen Births Mean	Teen Births SD	LBW Mean	LBW SD	Second Child Mean	Second Child SD	Smoke Mean	Smoke SD
State	12.65	3.25	10.23	7.27	15.74	8.09	34.94	12.02
Cluster 1								
Hardy*	11.13	2.44	9.52	3.51	5.71	6.09	15.24	12.14
Cluster 2								
Monroe*	10.92	2.53	5.75	5.67	19.54	7.63	21.84	12.74
Pleasants*	12.44	4.24	1.92	4.08	17.31	14.78	21.15	7.40
Cluster 3								
Barbour	12.55	1.03	9.09	5.04	15.91	11.96	31.06	9.92
Berkeley	12.46	1.21	10.17	2.89	17.35	2.37	28.81	4.34
Boone	14.45	1.48	10.60	3.84	18.02	4.76	33.22	9.49
Brooke	9.96	2.08	7.75	5.41	13.95	7.17	34.88	11.02
Cabell	13.12	0.85	10.68	2.05	18.38	2.71	36.11	3.38
Calhoun	11.92	3.99	22.22	18.09	16.67	9.28	27.78	12.01
Clay	15.59	3.51	9.38	5.67	14.06	5.31	32.03	21.47
Fayette	12.59	2.56	11.79	1.77	14.06	2.97	36.96	3.79
Gilmer	12.32	4.49	14.00	11.35	14.00	11.48	34.00	11.16
Grant	13.41	3.91	6.80	7.13	18.45	11.20	31.07	11.03
Greenbrier	10.84	1.91	8.84	4.50	14.06	7.19	35.34	7.31
Hampshire	13.75	1.56	3.45	3.22	15.76	3.62	32.51	5.64
Hancock	11.23	2.21	8.74	5.79	18.93	5.27	32.04	9.06
Harrison	12.66	0.58	10.78	2.27	15.69	3.40	30.90	4.32
Jackson	11.01	2.14	7.41	3.42	16.20	4.94	32.87	10.04
Jefferson*	9.17	1.10	9.59	1.49	13.70	6.00	30.41	5.59
Kanawha	11.92	0.27	11.44	2.41	14.58	1.17	37.40	3.23
Lewis*	11.19	1.88	7.46	1.79	13.43	4.45	26.87	11.61
McDowell	20.91	1.70	12.13	5.51	19.68	4.82	47.71	7.01
Marion	10.75	1.71	11.33	3.98	15.02	4.94	37.44	9.35

Table 6 (continued).

County	Teen Births Mean	Teen Births SD	LBW Mean	LBW SD	Second Child Mean	Second Child SD	Smoke Mean	Smoke SD
Mercer	14.93	1.50	13.73	1.43	15.99	3.67	36.35	4.83
Mineral	11.08	2.00	12.87	3.21	11.88	6.12	27.72	5.96
Monongalia	7.20	0.95	12.44	2.18	12.18	3.71	35.28	4.82
Morgan	10.89	2.19	13.33	6.65	15.24	7.42	21.90	10.26
Nicholas	12.18	1.61	11.71	3.81	10.81	7.72	34.68	15.48
Ohio	12.25	1.50	9.40	2.67	15.10	2.39	34.47	8.59
Pendleton	8.99	6.24	7.14	12.93	19.05	24.78	30.95	23.34
Preston	12.82	1.73	9.34	6.06	13.23	2.49	35.80	4.68
Putnam	8.07	0.99	9.65	5.43	14.79	5.67	33.12	5.25
Raleigh	12.11	0.81	9.13	4.62	15.87	2.38	29.94	3.59
Roane	12.87	1.87	6.11	8.12	12.21	8.39	36.64	8.70
Taylor	12.94	1.96	10.66	10.59	14.75	5.37	31.97	6.46
Tucker	12.31	2.60	6.25	10.46	16.67	6.60	27.08	15.26
Upshur	11.30	2.47	5.88	3.73	11.76	4.35	35.29	13.24
Wirt	14.78	3.04	15.69	16.38	11.76	11.22	35.29	15.48
Wood	13.18	1.46	11.34	3.04	16.31	2.68	29.43	4.43
Cluster 4								
Pocahontas	11.11	1.87	18.33	11.89	16.67	7.97	51.67	14.09
Cluster 5								
Braxton	16.12	2.46	7.43	6.69	14.86	7.84	41.22	12.27
Doddridge	12.44	3.37	13.21	15.70	24.53	19.13	43.40	17.38
Lincoln	16.40	2.74	10.39	2.69	15.41	5.40	45.52	8.64
Logan	14.14	1.99	10.93	3.55	15.03	4.23	46.99	7.58
Marshall	12.04	1.71	10.47	3.98	14.84	4.94	33.18	9.35
Mason	11.76	1.63	12.68	4.83	20.49	3.25	40.49	8.33
Mingo	14.55	2.38	11.29	5.75	15.99	8.13	41.07	8.07
Randolph	14.17	0.98	11.11	3.44	15.41	5.35	41.58	8.62
Ritchie	11.13	2.21	8.00	6.59	18.67	16.81	42.67	16.58
Summers	13.36	1.81	9.68	5.09	18.28	9.54	39.78	15.04
Tyler	14.93	1.14	13.92	10.74	16.46	13.23	44.30	15.89
Wayne	13.60	1.67	14.52	5.07	18.01	2.66	40.32	6.04
Webster	12.32	5.86	7.79	5.85	12.99	9.63	42.86	17.08
Wetzel	16.18	3.73	11.96	7.52	14.13	7.05	40.22	9.65
Wyoming	17.10	2.64	9.23	4.67	22.14	4.53	39.85	5.79

\* Counties selected for Phase 2

## Family and Consumer Science Class Enrollment

Phase 1 also involved other types of secondary data collection. Researchers accessed high school enrollments in four Family and Consumer Science (FACS) courses (Life Connections, Parenting and Child Development, Parenting and Strong Families, and Adolescent Parent) from 2003 to 2009; these data were obtained from the West Virginia Department of Education (WVDE). See Table 7 below for FACS class enrollment.

Table 7. FACS Course Enrollment: 2003-04 to 2008-09 School Years

County	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Life Connections						
Hardy	48	54	40	31	21	--
Monroe	25	52	22	17	42	--
Pleasants	11	13	9	--	--	--
Jefferson	32	53	21	16	15	--
Lewis	30	8	7	8	13	10
Parenting and Child Development						
Hardy	24	19	11	10	18	27
Monroe	30	51	25	28	49	90
Pleasants	--	12	--	--	--	--
Jefferson	129	72	121	96	101	93
Lewis	73	85	90	76	102	51
Parenting and Strong Families						
Hardy	19	38	35	40	37	34
Monroe	--	--	--	--	--	--
Pleasants	9	--	10	10	--	--
Jefferson	106	74	95	49	30	15
Lewis	--	--	--	--	--	--
Adolescent Parent Program						
Hardy	--	--	--	--	--	--
Monroe	--	--	--	--	--	--
Pleasants	--	--	--	--	--	--
Jefferson	13	14	11	8	7	--
Lewis	--	--	--	--	--	--

**Life Connections.** Life Connections is designed to enable students to develop skills for assuming their role in society as productive, successful individuals. Specifically, this class addresses the important objective of responsibility of personal wellness. As part of this course students learn about stress management techniques, how to identify and avoid risky behaviors, and how to contribute to a safe and healthy environment.

**Parenting and Child Development.** Parenting and Child Development is designed to help students evaluate readiness for parenting while examining appropriate parenting and child development practices. This class addresses the following important objectives: readiness for parenting; deciding to become a parent; impacts of heredity and environment on prenatal and early childhood human growth

and development; and the effects of pre-pregnancy, prenatal, and postnatal nutrition on health and wellness.

**Parenting and Strong Families.** Parenting and Strong Families is designed to help students evaluate readiness for parenting while examining appropriate parenting and “strong families” practices. As part of this class, students develop understanding of the roles and responsibilities of parenting, methods of contraceptive methods, birthing choices, alternative choices related to conception, and prenatal development and birth.

**Adolescent Parent program.** Adolescent Parent focuses on assisting the pregnant and parenting teen to complete his or her education by balancing responsibilities of parenthood and schoolwork. This class addresses the following important objectives: reducing the risk of pregnancy, birth and postpartum care of mother and infant, roles and responsibilities of becoming a parent, financial and community resources available to pregnant and parenting teens.

### **Community-Based Health Centers**

The number and locations of community-based and school-based health clinics within each county were also obtained from the WV DHHR and member organizations of the West Virginia Perinatal Partnership. Thirty-three comprehensive primary care centers operate throughout the state of West Virginia. Sixteen (48%) of these community health centers have a total of 46 school-based health centers (or satellite sites). Not all sites provide comprehensive services, but they do provide clinical care. See the map in Appendix E for locations of comprehensive care centers throughout the state.

### **School-Based Health Centers**

School-based health centers (SBHCs) are health clinics that bring preventive and immediate care, as well as counseling, health education, and sometimes dental care, to children and adolescents at school. According to the West Virginia School Health Technical Assistance and Evaluation Office, as of the 2009-2010 school year, 48 SBHCs served 60 schools in 24 WV counties, making health services available to a school-aged population of more than 30,000 children (approximately 11% of the state’s total student population in 2008-2009, [WVDE, 2009<sup>8</sup>]). The goal of the school-based health center initiative is to ensure primary and preventive care for youth by eliminating access barriers experienced by children and adolescents. According to the West Virginia School Health Technical Assistance and Evaluation Office, this 14-year statewide initiative provides easily accessible and cost-effective care, and is strongly supported by students, parents, and school staff. See Appendix F for locations of school-based health centers throughout the state.

### **Adolescent Pregnancy Prevention Initiative Presentations**

The number of educational presentations conducted by the Adolescent Pregnancy Prevention Initiative (APPI) for schools and community groups from 2003 to 2007 was also accessed from the West Virginia Family Planning Program. As part of the West Virginia Family Planning Program, the Adolescent Pregnancy Prevention Initiative conducts educational presentations for schools, community groups, faith-based organization, and parents. Presentations are focused on unintended pregnancy/HIV/STD prevention, using Reducing the Risk, a science-based program, as an outline. Reducing the Risk: Building

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<sup>8</sup> State enrollment data was accessed from [http://wveis.k12.wv.us/nclb/pub/enroll/State\\_ET2008.htm](http://wveis.k12.wv.us/nclb/pub/enroll/State_ET2008.htm).

Skills to Prevent Pregnancy, HIV and STD program includes 16 lessons that emphasizes teaching refusal statements, delay statements, and alternative actions students can use to abstain from sexual activity or protect themselves if they decide to engage in sexual activity. Curriculum outcomes include the following:

At the completion of this curriculum, students will be able to

- Evaluate the risks and consequences of becoming an adolescent parent or becoming infected with HIV or another STD
- Recognize that abstaining from sexual activity or using contraception are the only ways to avoid pregnancy, HIV infection, and other STDs
- Conclude that factual information about conception and protection is essential for avoiding teenage pregnancy, HIV infection, and other STDs
- Demonstrate effective communication skills for remaining abstinent and for avoiding unprotected sexual intercourse

APPI presentations are targeted to middle school or high school students, but can be adapted to earlier grades depending on the sexual behaviors of the students. Presentations include considerable role-playing to increase skills and change norms, and give a clear message about remaining abstinent or using condoms or other forms of contraception. For a list of presentations by county, see Appendix G.

### **Phase 2 Findings**

Phase 2 of the study involved the examination of health education and curriculum that are implemented in the high schools in each Favorable Outcome county. Researchers conducted phone interviews with eight out of fourteen general health teachers and four out of nine FACS teachers from each of these counties to examine the content covered in their classrooms. Profiles of each Favorable Outcome county are presented in the following section.

## Hardy County Profile

### Phase 1 Summary

As evidenced in Phase 1 Findings, Hardy County was grouped into the first of five clusters, indicating that the county had the most favorable outcomes across the four perinatal health indicators. From 2003 to 2008, Hardy County had a total of 943 births, 105 (11.1%) of which were born to teenage mothers. The county's percentage of births to teen mothers fell below the state average for 5 of the 6 years (excluding 2003); this indicator remained fairly steady across the 6 years and fluctuated approximately 7 percentage points. Hardy County's percentage of low birth weight (LBW) residents to teen mothers was above the state average during 2003, 2005, and 2007. The percentage of births in Hardy County that resulted in a second child fell below state average for 5 of 6 years (excluding 2006); this indicator increased dramatically in 2006. The county's percentage of births where the teenage mother had smoked during pregnancy was below the state average across all years, except for 2006 when the percentage was equal to the state average; this indicator fluctuated most frequently among all four health outcomes. Figure 2 below depicts the percentage of Hardy County births on each indicator across the 6-year time period.

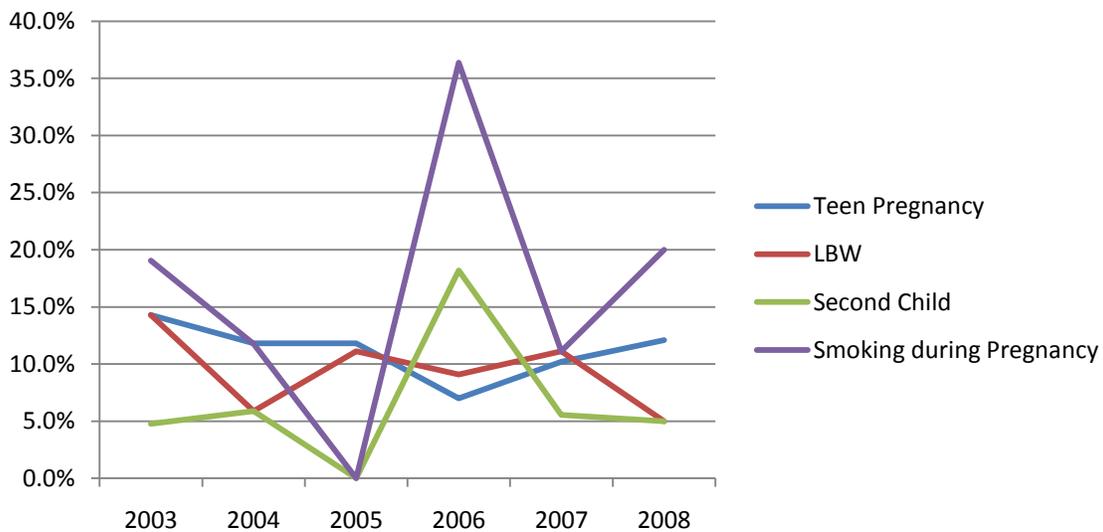


Figure 2. Hardy County: Percentages on perinatal health indicators, 2003-2008.

### County and School District Description

Hardy County is located in the eastern panhandle of the state. In 2000, Hardy County had a total population of 12,669, with 26% of its population 19 years or younger. The median household income was \$31,846 and 70% of the population was at least a high school graduate (U.S. Census Bureau, 2000).

Hardy County Schools has two elementary, two middle, and two high schools. In 2008-2009 school year, 2,353 students were enrolled in Hardy County Schools, 683 (29%) of whom were enrolled in Grades 9-12.

## Health Teacher Background

Two general health teachers in Hardy County were interviewed; FACS teachers could not be reached for interviews. The two general health education teachers who were interviewed had 68 combined years of teaching experience; one teacher had instructed health courses for 35 years and the other had taught health for 33 years. One of the two general health teachers also instructed physical education classes. One teacher had a course load of four health classes per semester and the other had three classes per semester.

## Health Curriculum and Course Descriptions

One general health education class is required for students to graduate from high school. Health curriculum in Hardy County Schools follows state content standards and objectives (CSOs). Adolescent risk behaviors are also integrated into the CSOs. According to teachers, health textbooks are updated every 5 years. The textbook used in 2009-2010 general health education classes in Hardy County high schools is *Glencoe Health*, published by McGraw Hill.

**Required courses.** The general health course in Hardy County Schools occurs on a block schedule (90 minutes every day during a semester). One of the two teachers who were interviewed reported conducting health classes in a computer lab where technology skills were incorporated into health education. Both interviewed teachers described the health curriculum as both theory and research based.

The interviewed teachers were asked to what extent the general health course addresses various perinatal education topics. The topics, along with the teachers' responses are summarized below.

- **Female/male reproduction:** The textbook used in the health course has a chapter devoted to reproduction. Human growth and development, and sexuality are topics discussed in this chapter.
- **Social pressure and influence:** One teacher stated that a chapter in the course textbook discusses this topic. The other teacher admitted that this topic is a weak area in his or her instruction. Teachers have received training on ways to incorporate character education into their instruction.
- **Sexual abuse:** The topic of sexual abuse is discussed in the "relationship" chapter of the textbook; however, one teacher stated that this topic is addressed more often in Family and Consumer Science courses.
- **Contraception methods:** Contraception methods are discussed in general health education classes, including newer technologies like the vaginal ring or the patch. Guest speakers (e.g., regional teen pregnancy specialist) also visit health classes to discuss contraception methods and demonstrate the application of contraception. A teacher perceived that guest speakers are more successful addressing the topic of contraception because "parents will not call and complain about what you [the teacher] have done in school [when there is a guest speaker]," indicating that guest speakers have more leeway for instructing contraception methods than classroom teachers.
- **Sexually transmitted disease:** One chapter in the textbook is devoted to sexually transmitted diseases (STDs). Teachers reported addressing the prevention and symptoms

for STDs. One teacher commented that this topic area is one of her “specialties.” Teachers access slides of the latest STDs from their local health department to share with students.

- **Planning and nutrition for healthy pregnancy:** One teacher reported that a chapter in the textbook is devoted to this topic. Although the importance of nutrition for a healthy pregnancy (e.g., prenatal vitamins) is not specifically addressed in one teacher’s health class, the effects of drugs (e.g., tobacco) and alcohol on developing fetuses are discussed.
- **Parenting responsibilities:** Teachers agreed that the curriculum addresses the responsibilities of parenting.
- **Self-efficacy for life skills:** One teacher stated that a chapter in the textbook covers life skills; the other teacher remarked that although life skills are not a large part of the curriculum, “we’ve really laid a solid foundation for life skills.”

**Family and Consumer Science (FACS) courses.** From 2003 to 2008, Hardy County has also offered two Family and Consumer Science (FACS) classes related to perinatal education, including (1) Life Connections and (2) Parenting and Child Development. A total of 194 students have enrolled in Life Connections, and 109 students in Parenting and Child Development across the 6-year period. One teacher indicated that students are required to take a FACS class in order to graduate from high school. FACS teachers in Hardy County could not be reached for an interview.

When asked if health courses address building students’ self-efficacy for life skills (e.g., personal and social competence to address skills), teachers reported that a chapter in the textbook addresses life skills. Particularly, one teacher reported that she “gives [students] the basics here for their life skills, such as to be a parent or not to be.”

### **Instructional Strategies**

Health teachers in each of the five Favorable Outcome counties were asked to describe the instructional strategies they employ in their classrooms. One Hardy County teacher reported using class discussion and the textbook and Web sites to support instruction. The other teacher incorporated more technology-based learning into her health curriculum. In this teacher’s class, students type notes on computers and create presentations using PowerPoint to share with the class; the teacher defined this as “peer-to-peer teaching.”

In addition to teacher instruction, high school health courses incorporated presentations from representatives of community organizations and agencies. These presentations occur approximately 1 to 2 times a month. The school nurse and other committee members have also been instrumental in helping coordinate a health exposition at the high school; students are offered information on a variety of health-related topics.

### **Resources Outside the Classroom**

Educational programs outside the school setting in Hardy County include the West Virginia University Extension Office, Family Issues Task Force, and mental health information from Grant Memorial. Hardy County has at least one on-site school-based health center and a community-based health center. Between 2003 and 2007, 31 Adolescent Pregnancy Prevention Initiative presentations were given in the county by the West Virginia Family Planning Program.

Students also participate in health activities outside the school setting. One teacher reported taking students on visits to the local health department to participate in open houses (or health fairs). At the open house, students engaged in blood pressure checks, body mass index calculations, and treadmill operation. Brochures on teen pregnancy were also distributed to female students.

### **Teacher Reactions to Study Findings**

The general health education teachers who were interviewed in Hardy County provided positive reactions when they learned that the county was among five in the state that were identified as having the most favorable perinatal outcomes. One teacher commented that the findings “sound good,” while the other teacher believed that the close attention and support provided to pregnant teens by some health teachers was a contributing factor to the county’s positive perinatal outcomes. In past years, this teacher reported providing such support to multiple pregnant teens, particularly those who were on homebound education. The teacher stated, “I go to encourage them, you know, you need to come back, you need to graduate, . . . encourage them . . . to go to the doctor, and I push the vitamins.”

## Monroe County Profile

### Phase 1 Summary

As evidenced in Phase 1 Findings, Monroe County was grouped into the second of five clusters, indicating that the county had some of the most favorable outcomes across the four perinatal health indicators. From 2003 to 2008, Monroe County had a total of 797 births, 87 (10.9%) of which involved teenage mothers. The county's percentage of births to teen mothers fell below the state average for all 4 of the 6 years (excluding 2003 and 2008); this indicator remained fairly steady across the 6 years and fluctuated approximately 7 percentage points. Monroe County's percentage of low birth weight (LBW) residents to teen mothers was below the state average for 5 of the 6 years (excluding 2006); interestingly, the percentage of teen pregnancies resulting in low birth weight babies has increased in 2006 and has fluctuated around the state average. The percentage of births in Monroe County that resulted in a second child was above the state average for 4 of the 6 years—2003, 2004, 2006, and 2008; this indicator dramatically increased from 2007 to 2008 (approximately 18 percentage points). The county's percentage of births where the teenage mother had smoked during pregnancy was below the state average across 5 of the 6 years. The percentage of teen mothers who smoked during their pregnancy peaked in 2006 above the state average, but has steadily declined from 2006 to 2008. Smoking as an indicator fluctuated most frequently among all four health outcomes. Figure 3 below depicts the percentage of Monroe County births on each indicator across the 6-year time period.

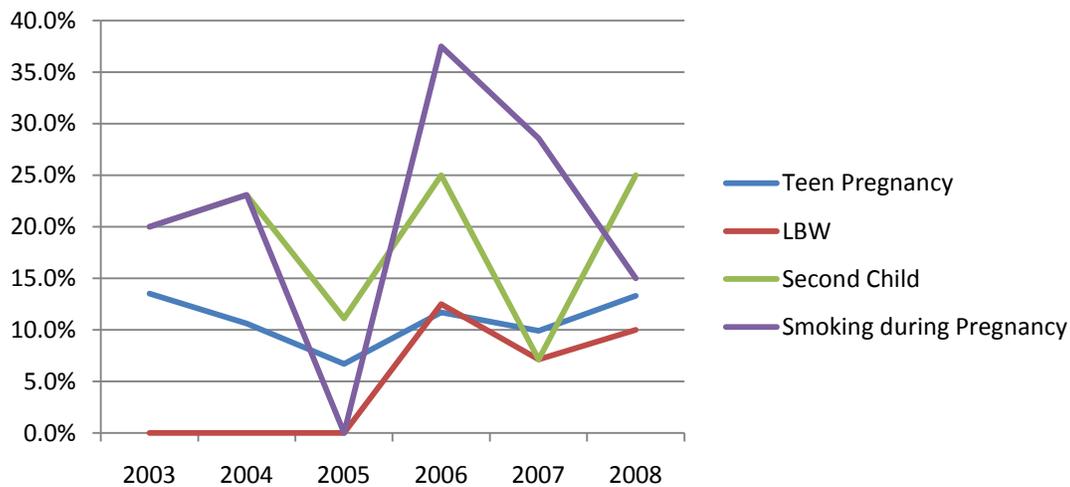


Figure 3. Monroe County: Percentages on perinatal health indicators, 2003-2008.

### County and School District Description

Monroe County is situated in the southern part of the state and borders Virginia. In 2000, Monroe County had a total population of 14,583, with 29% of its population 19 years or younger. The median household income was \$27,575 and almost 74% of the population was at least a high school graduate (U.S. Census Bureau, 2000).

Monroe County Schools has two elementary schools, two middle schools, and one high school (James Monroe). In the 2008-2009 school year, 2,015 students were enrolled in Monroe County Schools, 596 (29.5%) of whom were enrolled in Grades 9-12.

## Health Teacher Background

Two teachers in Monroe County were interviewed, including one of two high school general health teachers and one Family and Consumer Science (FACS) teacher. The general health teacher indicated that this was his first year teaching health; however, he has been a teacher for more than 30 years. The FACS teacher indicated that she has been teaching for 26 years. She teaches courses in Parenting and Strong Families, Parenting and Child Development, ProStart I and II, and Nutrition.

## Health Curriculum and Course Descriptions

One general health education class is required for students to graduate from high school. Health curriculum in Monroe County Schools follows state content standards and objectives (CSOs). Adolescent risk behaviors are also integrated into the CSOs. According to teachers, health textbooks are updated every 6 years, but major changes in materials only occurs about every 10 years. The textbook used in 2009-2010 general health education classes in the James Monroe High School is *Glencoe Health*, published by McGraw Hill.

**Required courses.** The general health course in James Monroe High School occurs as a Carnegie unit, which is 8,100 minutes. Students are required to take 71 minutes of health for 120 days. The interviewed general health education teacher was asked to what extent the general health course addresses various perinatal education topics. The topics, along with the teacher's responses are summarized below.

- **Female/male reproduction:** The textbook used in the health course has a chapter devoted to reproduction. The teacher indicated that he will spend about 6 days covering this topic. Additionally, he noted that he would take a more scientific approach to the topic because of his science background.
- **Social pressure and influence:** The teacher indicated that he covers social pressure with many topics, such as alcohol, drugs, and sexual pressures. He talks about mainstream situations (i.e., ones in the media) and challenges the students to think about what they would do in such situations. He also noted that he tries to incorporate social pressure and influence in all units, not just drugs and pregnancy.
- **Sexual abuse:** The teacher admitted that he does not know if he is going to cover the topic of sexual abuse. He also indicated he might bring a presenter in to cover that topic.
- **Contraception methods:** Contraception methods are covered during lessons on reproduction. The amount of detail will depend on the group of students. The teacher noted, "Sometimes you get a feel from the students that they want more detail . . . sometimes they sort of clam up."
- **Sexually transmitted disease:** The teacher admitted that sexually transmitted disease (STDs) is another topic he mentions every time he gets a chance. He also indicated there are two chapters in the textbook on STDs.<sup>9</sup>
- **Planning and nutrition for healthy pregnancy:** The teacher noted that his coverage of planning and nutrition for a healthy pregnancy depends on the amount of time available for class. He indicated covering the following topics: trimesters; nursing; needs of the baby; vitamins; the need for more calories; and the effects of alcohol, drugs, and tobacco.

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<sup>9</sup> The textbook contains one chapter on STDs and HIV, and another chapter on communicable diseases.

- **Parenting responsibilities:** The teacher indicated that he did not know if the curriculum covered this topic; however, he noted that he would talk about the responsibilities of parenting even if the textbook did not.
- **Self-efficacy for life skills:** The general health teacher noted that he did not know much about this because he is not that far in his coverage of the material.

**Family and Consumer Science (FACS) courses.** From 2003 to 2008, Monroe County has also offered two Family and Consumer Science (FACS) classes related to perinatal education, including (1) Life Connections and (2) Parenting and Child Development. A total of 158 students have enrolled in Life Connections and 273 students in Parenting and Child Development over the 6-year period. In their FACS courses, the interviewed FACS teacher reported teaching a “mini unit” addressing the following content related to perinatal education: female and male reproduction, social pressure and influence, sexual abuse, contraception methods, and sexually transmitted diseases. Additionally, material related to planning and nutrition for a healthy pregnancy is covered in Parenting and Strong Families and Parenting and Child Development courses. When asked if FACS courses address building students’ self-efficacy for life skills (e.g., personal and social competence to address skills), the FACS teacher noted that this is done to a large extent.

### **Instructional Strategies**

Health teachers in each of the five Favorable Outcome counties were asked to describe the instructional strategies they employ in their classrooms. Both of the interviewed teachers reported PowerPoint presentations, class discussion, case study videos, group and partner activities, and games. One of the two interviewed teachers indicated that his students engage in lesson activities outside the classroom related to the current topic at least once a week.

In addition to teacher instruction, high school general health courses incorporated presentations from representatives of community organizations and agencies. The general health teacher noted that he or she has guest speakers when it is believed the individual is an expert on the topic. However, sometimes, this teacher experience difficulties bringing in guest speakers due to the school’s remote location and conflicting schedules.

### **Resources Outside the Classroom**

Both teachers interviewed indicated that they were not aware of health programs outside of the school. However, Monroe County does have school- and community-based health centers. Fourteen Adolescent Pregnancy Prevention Initiative presentations were made by the West Virginia Family Planning Program between 2003 and 2007.

### **Teacher Reactions to Study Findings**

Both interviewed teachers in Monroe County provided mixed reactions when they learned that the county was among five in the state identified as having the most favorable perinatal outcomes. One of the two teachers commented that the findings were surprising, but very good. She added, “We do not receive much follow up on our students.” The other teacher said, “I think it’s good, but I don’t know if it’s as good as it sounds or if other places are in bad shape.” The teacher added, “I’m better than someone else, but how good is that someone else?”

## Pleasants County Profile

### Phase 1 Summary

As evidenced in Phase 1 Findings, Pleasants County was grouped into the second of five clusters, indicating that the county had some of the most favorable outcomes across the four perinatal health indicators. From 2003 to 2008, Pleasants County had a total of 418 births, 52 (12.4%) of which were born to teenage mothers. The county's percentage of births to teen mothers fell below the state average for 4 of the 6 years (excluding 2007 and 2008); this indicator remained somewhat steady across the 6 years and fluctuated approximately 11 percentage points. Pleasants County's percentage of low birth weight (LBW) residents to teen mothers was below the state average for all 6 years; this indicator has begun to increase since 2007. The percentage of births in Pleasants County that resulted in a second child fell below state average for the first 3 of 6 years; this indicator increased dramatically in 2006 and continued to increase throughout 2007 and 2008. The county's percentage of births where the teenage mother had smoked during pregnancy was below the state average across all 6 years; this indicator peaked in 2006, and has since declined 13 percentage points. Figure 4 below depicts the percentages of Pleasants County births on each indicator across the 6-year time period.

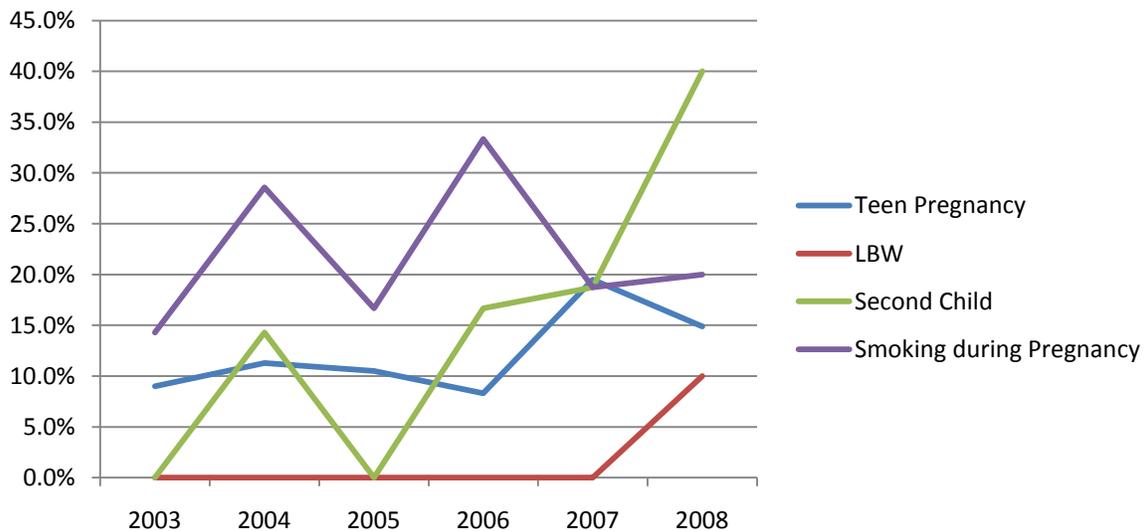


Figure 4. Pleasants County: Percentages on perinatal health indicators, 2003-2008.

### County and School District Description

Pleasants County is located in the northwest section of the state and borders the state of Ohio. In 2000, Pleasants County had a total population of 7,514, with 33% of its population 19 years or younger. The median household income was \$32,736 and 79% of the population was at least a high school graduate (U.S. Census Bureau, 2000).

Pleasants County School District has two elementary schools, one middle school, and one high school (St. Mary's). In the 2008-2009 school year, 1,370 students were enrolled in Pleasants County's public schools, 399 (29%) of whom were enrolled in Grades 9-12.

## Health Teacher Background

Two general health teachers in Pleasants County were interviewed. Currently, there are no Family and Consumer Science (FACS) teachers at St. Mary's High School, therefore, no FACS teachers were interviewed. One teacher indicated that he had been teaching health for 4 years, but has been a teacher for almost 40 years.

## Health Curriculum and Course Descriptions

One general health education class is required for students to graduate from high school. Health curriculum in Pleasants County Schools follows state content standards and objectives (CSOs). Adolescent risk behaviors are also integrated into the CSOs. According to teachers, health textbooks are updated every 7 years. The textbook used in 2009-2010 general health education classes in St. Mary's High School is *Glencoe Health*, published by McGraw Hill.

**Required courses.** The high school general health course occurs on a block schedule (90 minutes every day during a semester). Both general health teachers described the health curriculum as theory and research based. The interviewed general health teachers were asked to what extent the general health course addresses various perinatal education topics. The topics, along with the teachers' responses are summarized below.

- **Female/male reproduction:** The textbook used in the health course has three chapters devoted to reproduction. One teacher noted that she has guest speakers come in because they can go into more detail since they are considered experts in the field.
- **Social pressure and influence:** The teachers noted that the book covers social pressure and influence throughout the book. It covers abstinence from "not only drugs and risky behaviors, but also sexual activities." Another teacher noted that he likes to bring in guest speakers to help with this content. He indicated that he brings in law enforcement officers and individuals who are currently in halfway houses. He said, "It was really eye opening and these are actual people that kids could identify with because they were only about 19 or 20 then."
- **Sexual abuse:** The topic of sexual abuse is discussed in the Violence Prevention chapter of the textbook. One teacher noted that he has several excellent videos to assist with the topic.
- **Contraception methods:** Contraception methods are discussed in general health education classes, including newer technologies like the vaginal ring or the patch. Guest speakers (e.g., doctor and nurses) also visit health classes to discuss contraception methods and demonstrate the application of contraception.
- **Sexually transmitted disease:** One chapter in the textbook is devoted to sexually transmitted diseases (STDs). Teachers reported addressing the prevention and symptoms for STDs. Both teachers indicated they prefer to have guest speakers on this topic who can provide examples. One teacher noted, "Some of the guest speakers are far better at explaining the situation and getting the children to understand it."
- **Planning and nutrition for healthy pregnancy:** The teachers indicated that the topic of planning and nutrition for healthy pregnancy is covered by the textbook, and they bring in guest speakers to assist in covering the material. One teacher noted that he uses the Lily Series, which covers nutrition during pregnancy.

- **Parenting responsibilities:** The teachers indicated that the responsibilities of parenting is covered in the textbook and the Lily Series, but would prefer to do more with the topic.
- **Self-efficacy for life skills:** Both teachers indicated that they try to teach their students responsibility and consequence. Additionally, one teacher noted that the objective in the book is geared toward creating life skills.

**Family and Consumer Science (FACS) courses.** From 2003 to 2008, Pleasants County has offered three Family and Consumer Science (FACS) classes related to perinatal education, including (1) Life Connections, (2) Parenting and Child Development, and (3) Parenting and Strong Families. A total of 33 students have enrolled in Life Connections, 12 students in Parenting and Child Development, and 29 students in Parenting and Strong Families over the 6-year period. Currently, Pleasants County does not offer FACS classes because they do not have a FACS teacher.

### **Instructional Strategies**

General health teachers in each of the five Favorable Outcome counties were asked to describe the instructional strategies they employ in their classrooms. Both St. Mary's teachers indicated that they used worksheets. One of the teachers noted that he prefers the guided reading and interactive chalkboard, which provides an overview of the lesson. The other teacher said, "I think they learn much more with hands-on activities." She noted using decision-making skits, puzzles, nutrition bingo, and even Play-Doh to help explain various aspects of the chapters.

In addition to teacher instruction, high school health courses incorporated presentations from representatives of community organizations and agencies. As one teacher said, "They are the experts."

### **Resources Outside the Classroom**

Both interviewed teachers indicated that they did know what was available outside of the school setting in their county. One of the teachers did note that students can take optional health classes at the Mid Ohio Valley Technical Institute, but the students who elect to do so are usually going into a nursing field. Pleasants County does have a school-based health center, and the West Virginia Family Planning Program made 11 Adolescent Pregnancy Prevention Initiative presentations in the county between 2003 and 2007.

### **Teacher Reactions to Study Findings**

The interviewed teachers in Pleasants County provided positive reactions when they learned that the county was among five in the state identified as having the most favorable perinatal outcomes. One teacher commented "I am happy but never satisfied. There is always more we can do." The other teacher said, "Well I'm pretty tickled about it. . . . There are all types of statistics kept but very seldom . . . is a classroom teacher included in any of this kind of stuff. You know very seldom does anybody actually want to listen to what I'm doing."

# Jefferson County Profile

## Phase 1 Summary

As evidenced in Phase 1 Findings, Jefferson County was organized into the third of five clusters, indicating that the county had favorable or improving outcomes for the four perinatal health indicators. From 2003 to 2008, Jefferson County had a total of 683 births, 62 (9.1%) of which were born to teenage mothers. The county's percentage of births to teen mothers fell below the state average from 2003 to 2008; this indicator remained fairly steady across the 6 years and fluctuated approximately 3 percentage points. Jefferson County's percentage of low birth weight (LBW) residents to teen mothers was slightly above the state average during 2005 and 2006. The percentage of births in Jefferson County that resulted in a second child fell below state average for 5 of 6 years (excluding 2004); this indicator increased dramatically above the state average in 2006. The county's percentage of births where the teenage mother had smoked during pregnancy was below the state average across all years, except for 2006 when the percentage was equal to the state average. Figure 5 below depicts the percentages of Jefferson County births on each indicator across the 6-year time period.

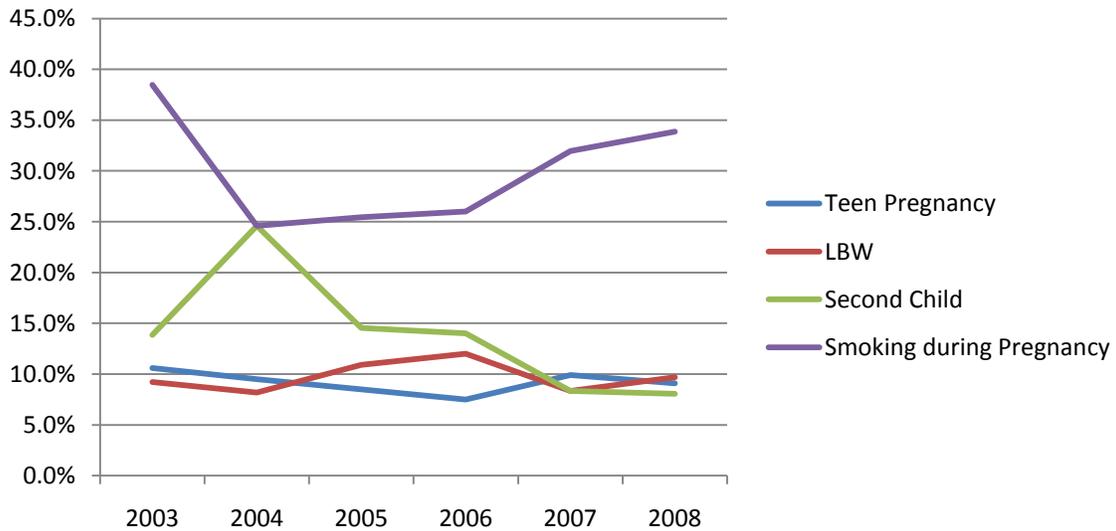


Figure 5. Jefferson County: Percentages on perinatal health indicators, 2003-2008.

## County and School District Description

Jefferson County is located in the eastern panhandle of the state. In 2000, Jefferson County had a total population of 42,190, with 27% of its population 19 years or younger. The median household income was \$44,374 and 79% of the population was at least a high school graduate (U.S. Census Bureau, 2000).

Jefferson County Schools has nine elementary, four middle, and two high schools. During the 2008-2009 school year, 8,398 students were enrolled in Jefferson County Schools, 2,417 (29%) of whom were enrolled in Grades 9-12.

## Health Teacher Background

A total of five teachers from Jefferson County Schools were interviewed, including three general health teachers and two teachers who taught FACS courses (Child Development and Relationships). One general health teacher had been teaching health for 21 years, one had taught health for 7 years, and the third had been a health teacher for 2 years. One FACS teacher had been teaching FACS courses for 28 years; the other FACS teacher had one year experience teaching a FACS course. One FACS teacher reported having an undergraduate degree in family resources and a master's degree in home economics education. Overall, teachers taught 3 to 6 classes per day.

## Health Curriculum and Course Descriptions

All health curricula in Jefferson County Schools follow state content standards and objectives (CSOs). When asked how often the curriculum changes, one general health teacher commented that health textbooks are adopted every 6 years. One general health education class is required for students to graduate from high school. State level data indicate that from 2003 to 2008, students in Jefferson County were offered the following FACS courses: Life Connections, Parenting and Child Development, Adolescent Parent Program, and Parenting and Strong Families. One teacher reported that students at one high school also have the option to enroll in a Child Development Specialist class at the other high school in the district. Refer to Table 6 for student enrollment data in FACS courses.

The textbook used in 2009-2010 general health education classes is *Lifetime Health*, published by Holt. Textbooks used in FACS courses include *The Developing Child* and *Families Today*.

**Required courses.** The one required health course in Jefferson County high schools occurs on a traditional schedule (every day during the regular school year). Teachers were asked to what extent the general health course addresses various perinatal education topics. The topics, along with the teachers' responses are summarized below.

- **Female/male reproduction:** One chapter in the textbook addresses female and male reproduction. Teachers reported that they spend two lessons (or four days) covering this information.
- **Social pressure and influence:** Teachers reported that multiple chapters in the textbook address social pressure and influence. One teacher stated that there is a "big emphasis" on decision making. "Not only do we cover decision making, but also the consequences of their decisions," stated a teacher.
- **Sexual abuse:** Information on sexual abuse is incorporated into instruction on violence. The following topics are covered in relation to sexual abuse: definition, warning signs, domestic abuse by a boyfriend, symptoms, methods to access help, and ways to report abuse. One teacher's study guide further addressed specific aspects of abuse, including date rape, domestic violence, incest, sexual assault, and tolerance.
- **Contraception methods:** Contraception methods are discussed in general health education classes, including newer technologies like the vaginal ring or the patch. One teacher reported that the textbook and curriculum address abstinence as a contraception method.
- **Sexually transmitted disease:** The signs, symptoms, and risk factors of sexually transmitted diseases are addressed in the general health class.

- **Planning and nutrition for healthy pregnancy:** The following aspects of planning for a healthy pregnancy are included in general health instruction: pregnancy trimesters and development; risk factors of premature infants; breastfeeding; importance of seeking health care; health precautions during pregnancy; vitamin supplements and diet; fetal alcohol syndrome, asthma, and drug addiction on developing fetuses.
- **Parenting responsibilities:** Parent responsibilities before and after birth are discussed as part of the curriculum.
- **Self-efficacy for life skills:** Life skills are taught to help students make informed decisions. One teacher reported that every lesson incorporates a life skill and the textbook does a “really good job” addressing these skills.

**FACS courses.** FACS courses are conducted every day for one school year; students earn one credit for these courses. Jefferson County is the only Favorable Outcome county to offer all four FACS courses, and the only county to offer the Adolescent Parent Program as a FACS course. For the 2008-2009 school year, the Adolescent Parent Program was not offered due to lack of student enrollment. In their FACS courses, teachers reported addressing the following content related to perinatal education:

- **Female and male reproduction:** FACS teachers review anatomy of body and incorporate discussions of reproduction on topics of teen pregnancy and parenthood.
- **Social pressure and influence:** Peer pressure and decision-making strategies are topics addressed in FACS courses.
- **Sexual abuse:** FACS teachers reported spending little time on sexual abuse, but discuss it lightly because “it is important.”
- **Contraception methods:** Students in FACS courses complete a research report on different methods of contraception and their benefits and side effects. Reliability of different contraception methods is also discussed.
- **Sexually transmitted disease:** FACS teachers discuss STDs and their implications for infertility. Students are required to complete a report on various viral and bacterial STDs.
- **Planning and nutrition for a healthy pregnancy:** FACS courses address multiple aspects of this content area, including nutritional needs, breastfeeding, pregnancy trimesters, premature births, and the effects of alcohol and drugs on fetuses. In terms of the responsibilities of parenting, FACS courses address changes in life style, relationships, and finances, and effective parenting skills.

When asked if FACS courses address building students’ self-efficacy for life skills (e.g., personal and social competence to address skills), one teacher stated the these skills are taught constantly and the other remarked, “That’s my be-all end-all; I’m not going to teach them things they cannot use sometime.”

### **Instructional Strategies**

**General health class instruction.** General health teachers in each of the five Favorable Outcome counties were asked to describe the instructional strategies they employ in their classrooms. One Jefferson County health teacher reported utilizing lecture, PowerPoint, video, worksheets, computers, visual aids, news articles, and Web sites in classroom instruction. The other health teacher taught his or her health class with another teacher called a “collaborative teacher.” The teacher reported that, although team teaching is a new experience for him or her, it “seems to work real well because while

I'm teaching, he's helping the ones that need the help"; this team teacher is a certified health and physical education teacher. Instructional strategies utilized by the second health teacher include primarily lecture; however, the teacher also incorporates information from the Web and current health magazines into the class. In addition, videos on different health aspects are shown at least twice a week. Teachers reported that guest speakers are not part of their classroom instruction.

**FACS course instruction.** Instructional strategies employed by FACS teachers include videos, class activities, and student presentations. Teachers also utilize magazines and newspaper material into their instruction. In the Child Development course, students are assigned a Real Care baby; students act as parent to a simulated baby for 3 days. One teacher reported that a midwife nurse and a child care provider also present information in their courses.

### **Resources Outside the Classroom**

Both general health education teachers and FACS teachers were unaware of any health education programs that might exist outside the school setting in Jefferson County. The county does not have community- or school-based health centers. Twenty-six presentations were made by the West Virginia Family Planning Program in Jefferson County schools between 2003 and 2007 as part of the Adolescent Pregnancy Prevention Initiative.

### **Teacher Reactions to Study Findings**

Interviewed teachers in Jefferson County provided their reactions to learning that the county was among five in the state identified as having the most favorable perinatal outcomes. In reaction to the findings, one teacher was "surprised, but not shocked." One teacher was shocked at the findings, but believed that Adolescent Parent Program for pregnant and parenting teens that was offered to students in past years may be a contributing factor. Another teacher was pleased with the findings and also agreed that the school's work with pregnant teens was a contributor; this teacher commented, "We did a lot of work with pregnancy, . . . [communicating] and getting to kids in a way they can listen." And the final teacher believed that Jefferson County is doing a "good job providing our students with accurate and preventative information."

## Lewis County Profile

### Phase 1 Summary

As evidenced in Phase 1 Findings, Lewis County was grouped into the third of five clusters, indicating that the county had average outcomes across the four perinatal health indicators. Due to the large number of counties in Cluster 3, researchers elected to examine the indicators and include counties with low percentages of three of the four indicators, and were showing steady improvement on the fourth indicator (smoking); this was the case for Lewis County. From 2003 to 2008, Lewis County had a total of 1,197 births, 134 (11.2%) of which were born to teenage mothers. The county's percentage of births to teen mothers fell below the state average for all 6 years; this indicator remained fairly steady across the 6 years and fluctuated approximately 5 percentage points. Lewis County's percentage of low birth weight (LBW) residents to teen mothers was also below state average for all 6 years; this indicator also remained fairly steady across the 6 years and fluctuated approximately 5 percentage points. The percentage of births in Lewis County that resulted in a second child fell below state average for 5 of 6 years (excluding 2006); this indicator increased dramatically in 2006. The county's percentage of births where the teenage mother had smoked during pregnancy was below the state average across 4 of the 6 years (excluding 2004 and 2005); this indicator fluctuated most frequently among all four health outcomes. Figure 6 below depicts the percentage of Lewis County births on each indicator across the 6-year time period.

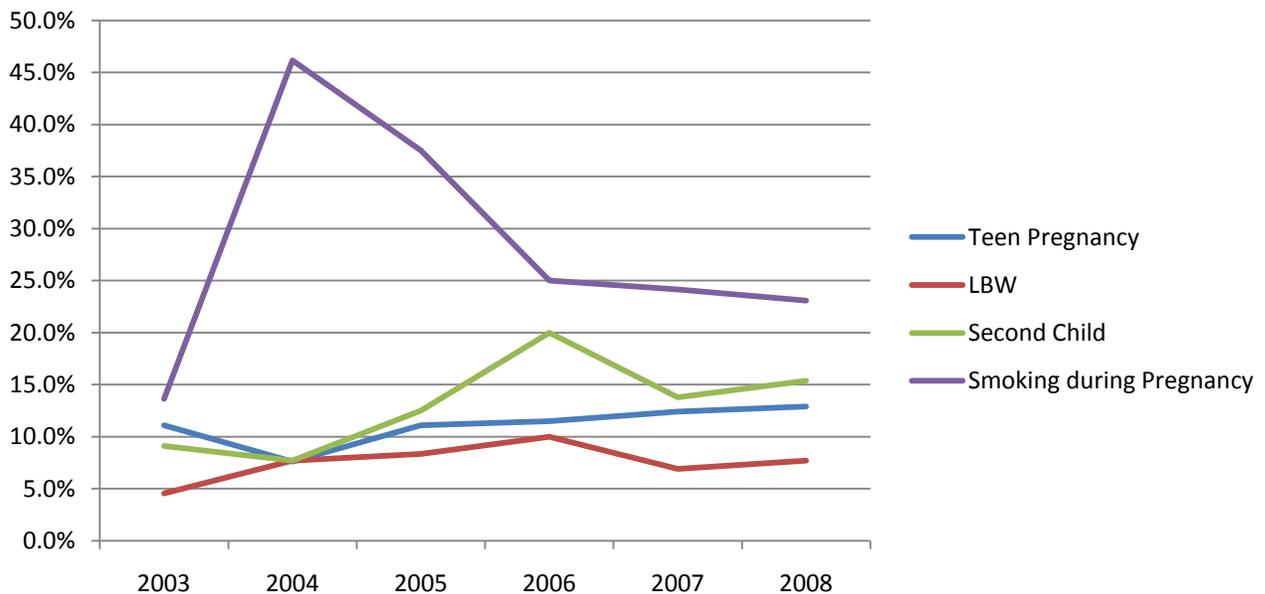


Figure 6. Lewis County: Percentages on perinatal health indicators, 2003-2008.

### County and School District Description

Lewis County is located in the central part of the state. In 2000, Lewis County had a total population of 16,919, with 29% of its population 19 years or younger. The median household income was \$27,066 and 74% of the population was at least a high school graduate (U.S. Census Bureau, 2000).

Lewis County Schools has four elementary schools, one middle school, and one high school. In 2008-2009 school year, 2,720 students were enrolled in Lewis County Schools, 829 (30%) of which were enrolled in Grades 9-12.

### Health Teacher Background

There are two general health teachers and two FACS teachers at Lewis County High School. Both of the general health teachers declined participation in this study; however, one of the two Family and Consumer Science (FACS) teachers was interviewed. The FACS teacher indicated that she has been teaching Parent Education/Child Development for more than 30 years. It is important to note that all information provided below came from the one FACS teacher.

### Health Curriculum and Course Descriptions

According to the FACS teacher, parent education is mandated by the state to be available at every school. She also noted that the state content standards and objectives (CSOs) were “pretty inclusive” and there were no requirements at the county level. The teacher indicated that the basic material for the class stays the same, even when textbooks change. Currently, the teacher uses the book *Parents and Their Children*, published by Goodheart-Willcox Publishers.

**Required courses.** As part of the state graduation requirements, all high schools students must have one unit of health; however “unit” is defined by the county. Specific information about the required health class was not obtained due to sample representation (i.e., both general health teachers declined participation).

**Family and Consumer Science (FACS) courses.** From 2003 to 2008, Lewis County has also offered 2 Family and Consumer Science (FACS) classes related to perinatal education, including (1) Life Connections and (2) Parenting and Child Development. A total of 76 students have enrolled in Life Connections and 477 students in Parenting and Child Development over the 6-year period.

The Parenting and Child Development FACS course in Lewis County Schools occurs on a period schedule (45 minutes every day during a semester). Limited information was provided by the FACS teacher when asked to what extent the Parenting and Child Development course addresses various perinatal education topics. The topics, along with teachers’ responses are summarized below.

- **Female/male reproduction:** The FACS teacher indicated that she covered female and male reproduction in her Parenting and Child Development class.
- **Sexual abuse:** The teacher said, “Yes, I cover abuse in general: physical, emotional, and mental.”
- **Contraception methods:** The FACS teacher indicated, “I don’t do much with that.” She noted that the general health teachers cover that material in their classes.
- **Sexually transmitted disease:** The teacher indicated that she covers sexually transmitted diseases, and she noted that this topic is also covered in the general health classes.
- **Planning and nutrition for healthy pregnancy:** The teacher noted that she covers the following: trimesters and the importance of accessing maternity care within the first trimester; nutritional needs of the developing fetus and the importance of vitamin supplements prior to pregnancy; and the effects of alcohol, tobacco, and addictive drugs on the developing fetus.

- **Parenting responsibilities:** The FACS teacher indicated that, in her class, she addresses becoming a parent and the responsibilities of parenting.
- **Self-efficacy for life skills:** The teacher indicated that teaching life skills was not a focus in the Parenting and Child Development class. She added, “That is something I do more in human resources.”

### **Instructional Strategies**

The teacher interviewed was asked to describe the instructional strategies they employ in his or her classroom. The Lewis County FACS teacher said, “[I] try to do a number of things. I do lecture, PowerPoint presentations, activities, overheads.” She added, “[Students] do computer work in class. I send them out with an expense sheet, they talk with people who just had a baby to find out how much formula is, how much prenatal care is. I have a project for every unit. . . . Every term has a project and they have to present that project.”

In addition to teacher instruction, she noted that FACS courses had previously incorporated presentations from school nurses. These presentations are no longer possible due to increased demands on the school nurses; two nurses are available to students at the six schools.

### **Resources Outside the Classroom**

The FACS teacher indicated that she was not aware of any health education programs outside of the school setting. Additionally, she did not mention the use of off-site resources. Lewis County does not have community- or school-based health centers. The West Virginia Family Planning Program made eight Adolescent Pregnancy Prevention Initiative presentations between 2003 and 2007.

### **Teacher Reactions to Study Findings**

The teacher in Lewis County provided positive reactions when she learned that the county was among five in the state identified as having the most favorable perinatal outcomes. She said, “I’m not too surprised. We were in a crisis a few years ago, like the rest of the state, so we built a county task force and strived to work toward improving [teen pregnancy]. We’ve tried to . . . educate, and tried to zero in on some of the problems that exist.” She added, “I think it’s a generational thing. . . . I’m having students whose mothers were teen moms, and I don’t know how you break that.”

## Cross-County Analysis

Favorable Outcome counties identified during Phase 1 of the study included the following: Hardy, Jefferson, Lewis, Monroe, and Pleasants. These counties had the “most favorable” data across the following four selected health indicators: teen pregnancy, low birth weight, smoking during pregnancy, and second child. Researchers conducted a cross-county analysis to compare perinatal education in schools across the five Favorable Outcome counties.

### County Demographic Data

The five counties selected for Phase 2 of this study ranged in population from 7,514 (Pleasants) to 42,190 (Jefferson). Two (Hardy and Jefferson) of the five counties are located in the eastern panhandle of the state; Jefferson County borders the states of Maryland and Virginia and Hardy County shares a border with Virginia. Pleasants County is located in the northwest section of the state and borders the state of Ohio; Lewis County is located in the central part of the state; and Monroe County is situated in the southern part of the state and borders Virginia. Please see the map below for county locations.

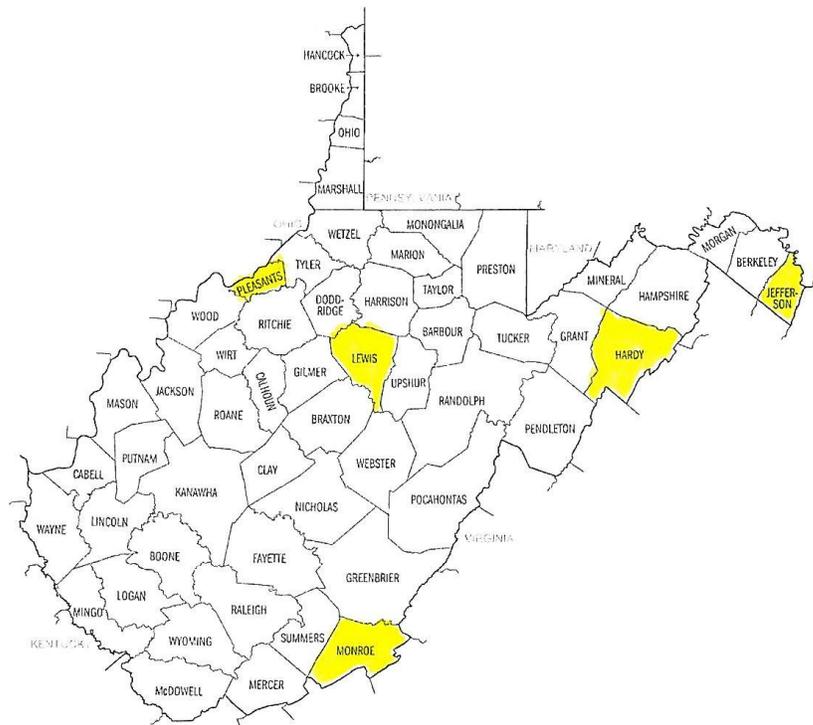


Figure 7: Location of the Favorable Outcome counties.

According to the U.S. Census Bureau (2000), percent of the population up to 19 years ranged from 22.3% to 27.2% across the five counties. The majority of the population in each county was White. Median household income ranged from \$27,066 to \$44,374. At least 70% of the population in each county was at least a high school graduate. Table 8 displays select demographics by county.

Table 8. Favorable Outcome County Demographics

County	Total Population	Population ≤ 19 Years	White	Median Household Income	High School Graduate
Hardy	12,669	25.7%	96.9%	\$31,846	70.3%
Jefferson	42,190	27.2%	91.0%	\$44,374	79.0%
Lewis	16,919	24.5%	98.6%	\$27,066	73.7%
Monroe	14,583	22.3%	92.7%	\$27,575	73.7%
Pleasants	7,514	26.0%	98.3%	\$32,736	79.4%
State	1,808,344	25.1%	95.0%	\$29,696	75.2%

When comparing percentages of teen births in the Favorable Outcome counties to the state average, all five counties fell below the state average, with Jefferson County having the lowest teen birth rate and Pleasants County having the highest teen birth rate of the five counties. Additionally, all five counties had low birth weight averages below the state average. Pleasants County had the lowest percent of teen mothers with low birth weight babies, while Jefferson County had the highest rate of teen mothers with low birth weight babies. Monroe and Pleasants counties were above the state average on births resulting in multiple children. Hardy County had the lowest rate of births resulting in a second child to a teen mother. Overall, all counties were below the state average of mothers who smoked during their pregnancy. Of the five counties, Jefferson County had the highest percentage of mothers who smoked during their pregnancy, and Hardy County had the lowest percentage of mothers who smoked during their pregnancy. See Figure 8 for a pictorial representation of the data.

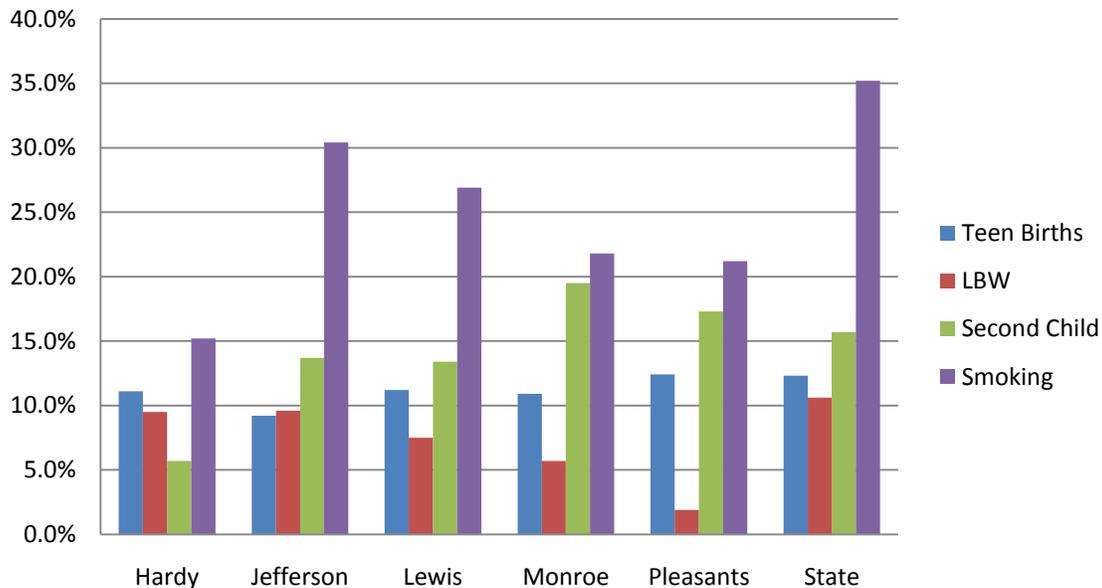


Figure 8. Perinatal indicators percentage rates in Favorable Outcome counties.

By order of ranking, the first health indicator used to determine counties with the most favorable outcomes was percentage of teen births. Between 2003 and 2008, the average percentages of teen births ranged from 7% (Hardy County) to 20% (Pleasants County). Overall, the five counties were at or below the state average on teen birth rate. However, there were a few instances throughout the 6

years in which county percentages were above the state average. They are as follows: 2003, Hardy County; and 2007 and 2008, Pleasants County. See Figure 9 for a pictorial representation of the data.

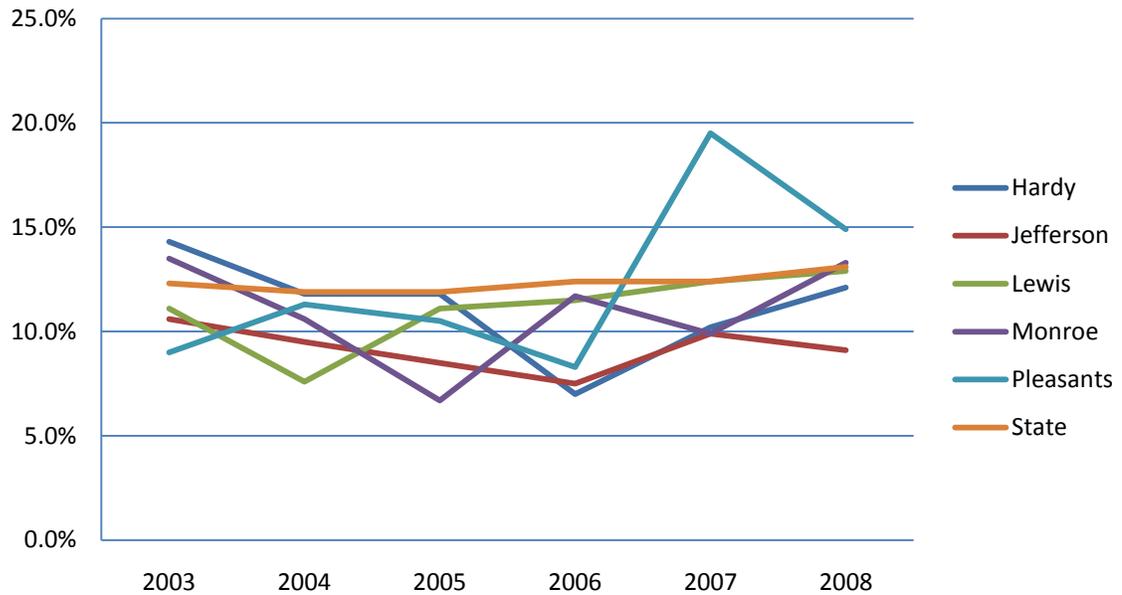


Figure 9. Percentages of births in each county that were to teens.

Figure 10 shows the comparison of the Favorable Outcome counties on percentages of teen mothers who had babies born with low birth weight. Between 2003 and 2008, the average percentages of teen mothers who had babies born with low birth weight ranged from 0% (Pleasants and Monroe counties) to 14% (Hardy County). Overall, the five counties were below the state average on teen mothers who had babies with low birth weight. However, there were a few instances throughout the 6 years in which county percentages were above the state average. They are as follows: 2003, 2005, and 2007, Hardy County; 2005 and 2006, Jefferson County; and 2006, Monroe County.

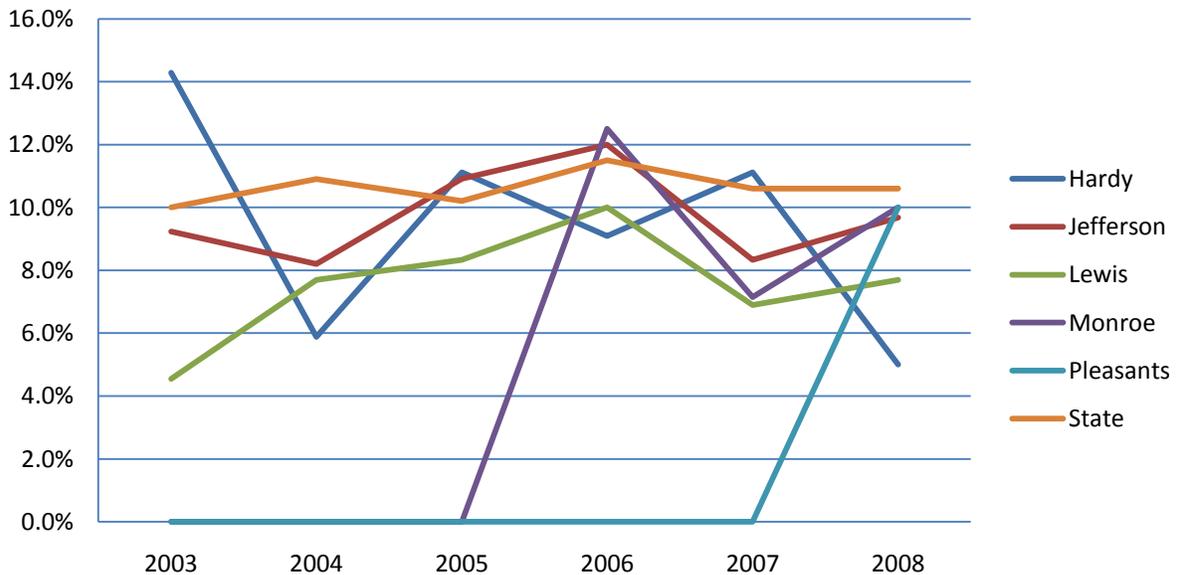


Figure 10. Percentages of teen births to low birth weight babies, by county.

By order of ranking, the third health indicator used to determine counties with the most favorable outcomes was percentage of births that result in multiple children (i.e., a second or third birth to a teen mother). Between 2003 and 2008, the average percentages of teen births resulting in multiple children ranged from 0% (Hardy and Pleasants counties) to 40% (Pleasants County). For most of the 6 years, four of the five counties were below the state average on births resulting in multiple children. Monroe County, on average, was above the state average on this indicator. See Figure 11 for more detail.

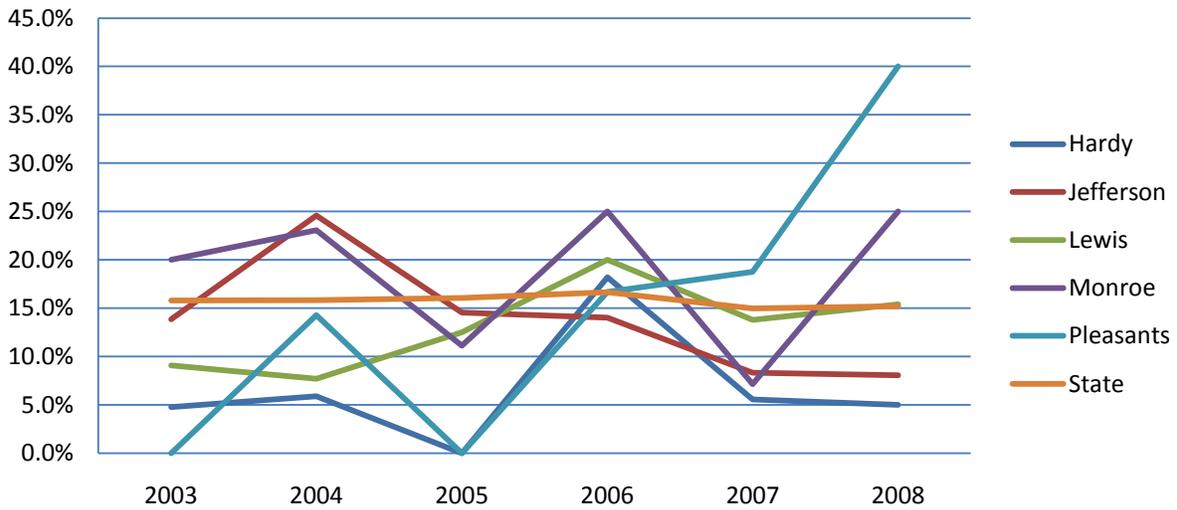


Figure 11. Percentages of births to teen mothers resulting in multiple children, by county.

As Figure 12 shows, between 2003 and 2008, the average percentages of teenage mothers who smoked during their pregnancy ranged from 0% (Jefferson and Monroe counties) to 46% (Lewis County). Overall, the five counties were below the state average on teen mothers who smoked during their pregnancy. However, there were a few instances throughout the 6 years in which county percentages were above the state average. They are as follows: 2003 and 2008, Jefferson County; 2004 and 2005, Lewis County; and 2006, Monroe County.

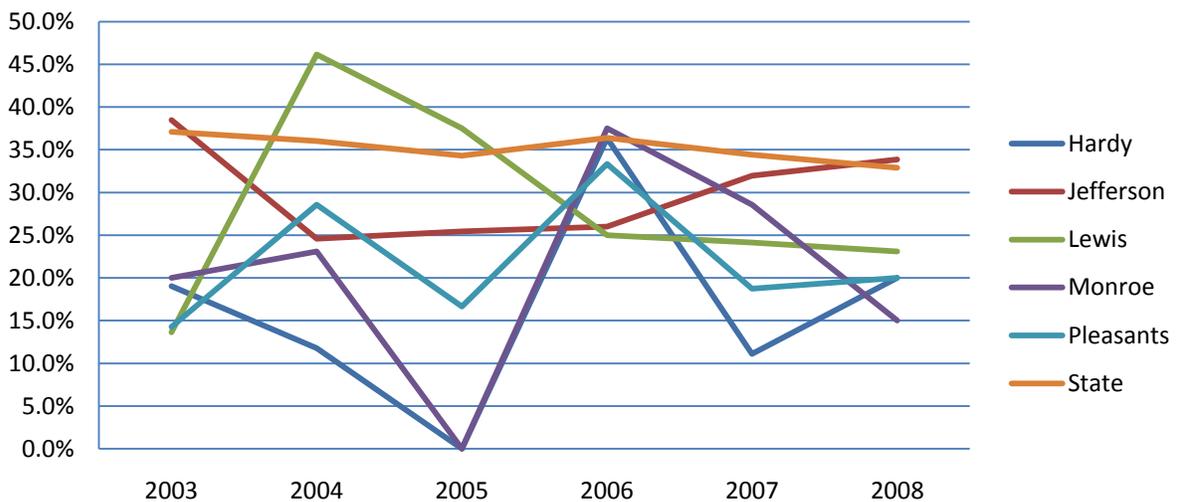


Figure 12. Percentages of births to teen mothers who smoked during pregnancy, by county.

## School Background

In 2008, student populations in each county ranged from 1,955 to 8,398; approximately 30% of this population was high school students (WVDE, 2008<sup>10</sup>). Table 9 presents high school student population by county.

Table 9. Favorable Outcome County School Characteristics

County	Total Student Population	High School Population	Number of High Schools
Hardy	2,353	29.0%	2
Jefferson	8,398	28.8%	2
Lewis	2,686	31.8%	1
Monroe	1,955	30.9%	1
Pleasants	1,346	31.3%	1

## Health and FACS Courses

In all five Favorable Outcome counties, high schools students are required to earn one health credit, as stipulated by the state. Students can take this course at any time during their 4-year high school career. Four FACS courses related to perinatal education were offered in Favorable Outcome counties from 2003 to 2008; however, not every county offered each course. Jefferson County offered all four FACS courses; Hardy and Pleasants counties offered three of the FACS courses; and Lewis and Monroe counties offered two FACS courses. All five counties offered Life Connections during the 6-year period; only Lewis County offered the course in 2008. Similarly, all five counties offered Parenting and Child Development course over the 6-year period; four of the five counties offered the course all 6 years and Pleasants County offered the course only in 2004. The Adolescent Parent Program was offered in only Jefferson County from 2003 to 2007. The Parenting and Strong Families course was offered in three (Hardy, Jefferson, and Pleasants) of the five counties from 2003 to 2008. Student enrollment in courses fluctuated over the six-year period; enrollment was highest in the Parenting and Child Development course ( $N = 1,483$ ), followed by 601 students in the Parenting and Strong Families course; a total of 588 students were enrolled in Life Connections across the 6 years.

## Perinatal Education

Health and FACS teachers in all Favorable Outcome counties indicated that their curriculum addressed perinatal education topics at least to some extent. Table 10 outlines the topics addressed in general health classes in each county, according to teacher interviewees. All five counties address the following content areas: female/male reproduction, sexually transmitted disease, planning and nutrition for healthy pregnancy, and responsibilities of parenting. Four of the five counties offered content in the following topic areas: social pressure and influence, contraception methods, and the effects of alcohol, tobacco, and addictive drugs on developing fetus. Researchers were unable to collect general health education information from Lewis County, therefore, the county is not represented in Table 10.

<sup>10</sup> <http://wveis.k12.wv.us/nclb/pub/>

Table 10. Matrix of Perinatal Education Topics Addressed by General Health Courses

Topic	Hardy County	Jefferson County	Monroe County	Pleasants County
Female/male reproduction	✓	✓	✓	✓
Social pressure/influence	✓	✓	✓	✓
Sexual abuse	✓	✓		✓
Contraception methods	✓	✓	✓	✓
Sexually transmitted disease	✓	✓	✓	✓
Planning and nutrition for healthy pregnancy	✓	✓	✓	✓
Pregnancy trimesters			✓	
Importance of term delivery		✓		
Process of lactation		✓	✓	
Preconception health provider		✓		
Diabetes, high blood pressure, other health problems		✓		
Nutritional needs of developing fetus		✓	✓	
Effect of alcohol, tobacco, and addictive drugs on developing fetus	✓	✓	✓	
Responsibilities of parenting	✓	✓	✓	✓
Self-efficacy for life skills	✓	✓		✓

Information collected on Favorable Outcome counties revealed some similarities across the five counties. Common characteristics included teacher credentials and experience, school and community-based health centers, and teacher use of resources outside the school setting. All general health education teachers in Favorable Outcome counties must possess a state certified license to teach health in their respective districts. Further, most general health teachers who were interviewed had many years ( $\geq 20$ ) of experience teaching health in schools.

Teachers often reported their use of resources outside the school setting. Interestingly, three of the five Favorable Outcome counties had a community-and/or school-based health center. Students in general health classes in these counties visited open houses at local health centers where they were able to engage in various activities (e.g., blood pressure checks). General health teachers also solicited information from centers and other community agencies to include in their classroom discussion. Guest speakers also frequented health education classrooms to present content specific to the speaker's profession; teachers acknowledged that speakers' knowledge of certain content areas allows them to better communicate information to their students.

Three (Hardy, Monroe, and Pleasants) of the five counties adopted the *Glencoe Health* textbook for use in their classrooms; further, these three counties were included in clusters one and two, indicating they had the best cluster of perinatal outcomes among the 55 counties. Teachers reported that several chapters in the *Glencoe Health* textbook addressed perinatal topics, including the reproductive system, STDs, and prenatal development and birth. Jefferson County used a different textbook (*Lifetime Health*); the textbook adopted in Lewis County was not determined.

Cross-county analyses of data revealed few differences among the health curriculum presented in each county. The most evident difference was the definition of a class unit. In two of the three most Favorable Outcome counties, general health classes were 90 minutes every day for one semester; the third most Favorable Outcome county occurs as a Carnegie unit, requiring 8,100 minutes of the course. In Lewis County, the definition of unit is defined by the district office.

## Conclusions

The purpose of phase 1 of the study was to determine a subset of counties with the best perinatal outcomes. Researchers examined the distribution of county scores for 26 health indicators in order to identify key indicators to sort the 55 counties into groups with similar characteristics. Variables deemed by researchers to be least likely to be improved by better health education were excluded from further analysis. Researchers collaborated with West Virginia Perinatal Partnership staff to select the following four indicators: births to teenage mothers; babies with low birth weight born to teen mothers; births by teen mothers resulting in second, third, or fourth child; and teen mothers who smoked during pregnancy.

A hierarchical cluster analysis was conducted on the four key indicators to determine counties with similar characteristics. Counties in cluster 1 and 2 (Hardy, Monroe, and Pleasants) had the most favorable outcome data on the four indicators and were targeted for phase 2 of the study. Because a number (36) of counties were included in cluster 3, researchers examined this cluster to identify counties that had low percentages on three of the four indicators *and* were showing steady improvement on the fourth indicator (smoking) over the 6-year period. Two additional counties—Jefferson and Lewis—were selected for Phase 2 analyses.

Hardy County was grouped into the first of five clusters, indicating that the county had the most favorable outcomes across the four perinatal health indicators. Hardy County was below the state average for 5 of the 6 years (from 2003 to 2008) on the following indicators: percentage of births to teen mothers (excluding 2006); births results in a second child (excluding 2006); and smoking during pregnancy (excluding 2006). Hardy County's percentage of low birth weight (LBW) babies to teen mothers was above the state average for 3 of the 6 years.

Monroe and Pleasants counties were grouped into the second of five clusters. Monroe County was below the state average for 5 of the 6 years (2003 to 2008) on the following indicators: low birth weight (excluding 2006) and smoking during pregnancy (excluding 2006). Pleasants County was below the state average for all six of the years on these two indicators. Additionally, Monroe and Pleasants counties' percentages of births to teen mothers fell below the state average for 4 of the 6 years (excluding 2003 and 2008 and excluding 2007 and 2008, respectively). The percentages of births in Monroe County that resulted in a second child was above the state average for 4 of the 6 years—2003, 2004, 2007, and 2008, while Pleasants County was above state average from 2006 to 2008.

Jefferson and Lewis counties were organized into the third of five clusters, which included most of the counties in the state. However, these two counties had improving rates on the one indicator that was higher than those in clusters 1 or 2. The percentage of births to teen mothers in both Jefferson and Lewis counties fell below the state average for all 6 years (from 2003 to 2008). Lewis County's percentage of low birth weight (LBW) residents to teen mothers was also below state average for all 6 years; however, Jefferson County was slightly above this state average during 2005 and 2006. Both Jefferson and Lewis counties fell below the state average for 5 of the 6 years in births that resulted in a second (or more) child (2004 and 2006, respectively). Jefferson County fell at (2006) or below (2003-2005, 2007-2008) the state average for teenage mothers who smoked during their pregnancy for all 6 years, and Lewis County was below the state average on this indicator across 4 of the 6 years (excluding 2004 and 2005).

Resources external to the school curriculum may have an effect on the incidence rates of the four pregnancy and perinatal indicators.<sup>11</sup> Community-based health centers are located in two of the five counties. School-based health centers are located in three of the five counties. Monroe and Hardy counties have both types of health centers. Interestingly, Hardy County had the best outcomes on the indicators. Monroe County was in cluster 2, which included the two counties with the most favorable set of indicator rates. Pleasants County was also in cluster 2, and has a school-based health center. The two counties without community- or school-based health centers included Jefferson and Lewis, both of which were in cluster 3 with most other West Virginia counties; they were included only because they had relatively low incidence rates on 3 indicators and showed improving rates on the smoking indicator. The number of presentations made as part of the Adolescent Pregnancy Prevention Initiative varied widely across counties in general, and across these Favorable Outcome counties.

A cross-county analysis revealed that health curriculum in Favorable Outcome counties most often addresses the following content areas: female/male reproduction; sexually transmitted disease; planning and nutrition for healthy pregnancy; responsibilities of parenting; social pressure and influence; contraception methods; and the effects of alcohol, tobacco, and addictive drugs on developing fetuses. Teachers employed various methods of instruction to teach these topics, including lecture, videos, student presentation, class discussion, projects and research papers, and technology. Most health teachers who were interviewed provided students with general information of content areas and then provided opportunities for students to self-explore and further their own learning. All general health education teachers were certified to teach health and most had several years ( $\geq 20$ ) of experience teaching health in schools. Teachers often reported their use of resources outside the school setting. Students in general health classes visited open houses at local health centers and teachers solicited information from community agencies to support classroom instruction. Teachers in Favorable Outcome counties also asked guest speakers from local and state agencies to present information in their classrooms. Most Favorable Outcome counties adopted the *Glencoe Health* textbook for use in their classrooms. The most evident difference across the five Favorable Outcome counties was the definition of a class unit. Some county requirements included 90 minutes of general health every day for one semester while others occurred as a Carnegie unit.

Four Family and Consumer Science (FACS) courses have been offered in Favorable Outcome counties from 2003 to 2008 (data were not available for 2009-2010 school year): Life Connections, Parenting and Strong Families, Parenting and Child Development, and Adolescent Parent Program, with Parenting and Child Development and Parenting and Strong Families. Although general health education courses address perinatal education to a certain extent, these FACS courses focus primarily on perinatal content, including the following: readiness for parenting; deciding to become a parent; impacts of heredity and environment on prenatal and early childhood human growth and development; the effects of pre-pregnancy, prenatal, and postnatal nutrition on health and wellness; understanding the roles and responsibilities of parenting, contraceptive methods; birthing choices; alternative choices related to conception; and prenatal development and birth. Health and FACS teachers in the five counties believed that the health and FACS curricula's attention to perinatal aspects is a contributor to their county's favorable perinatal outcome data.

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<sup>11</sup> Although not within the scope of this study, it is interesting to note the percentage of counties in each cluster that had community- and/or school-based health clinics. With the clusters arranged from 1 = best indicator rates to 5 = worst indicator rates, 100% of cluster 1 and 2 counties had at least one health center (school and/or community based), 78% of cluster 3 counties had at least one health center, 0% of cluster 4 had a health center, and only 47% of cluster 5 counties had at least one community- or school-based health center.

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## APPENDIXES

## APPENDIX A

### High School Health Content Standards and Objectives

### ***High School Health Content Standards and Objectives***

This program of study builds on the foundation established in the K-8 health education curriculum and prepares students to become wise health care consumers and responsible, productive citizens. The relationships among personal, community and world health and economic, cultural, sociological, biological, and environmental factors are examined in interdisciplinary discussions, debates, and class projects. Students examine personal health choices and the connection to the world of work and assumption of adult roles. In-depth analysis of current health issues and concepts coupled with school-wide opportunities that promote and reinforce the importance of good health and positive choices need to be coordinated to have the greatest impact on adolescent behavior. Instruction continues to focus on prevention of all risk behaviors, however, instruction must also emphasize limiting the negative consequences of high-risk behavior and promote values and norms that are age-appropriate and realistic. Students should have a personal perception of risk, the ability to recognize and resist social pressures and the skills to build positive social relationships. The West Virginia Standards for 21st Century Learning include the following components: 21st Century Content Standards and Objectives and 21st Century Learning Skills and Technology Tools. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology and objectives.

Note: In accordance with West Virginia Code §18-2-9, the West Virginia Department of Education shall provide a standardized health education assessment to be administered in high school health education classes in order to measure student health knowledge and program effectiveness.

<b>Grade HS</b>	<b>Health Education</b>			
<b>Standard:1</b>	<b>Health Promotion and Disease Prevention Objectives (HE.S.1)</b>			
(HE.S.1)	Students will comprehend concepts related to health promotion and disease prevention to enhance health.			
<b>Performance Descriptors HE.S.1</b>				
<b>Distinguished</b>	<b>Above Mastery</b>	<b>Mastery</b>	<b>Partial Mastery</b>	<b>Novice</b>
High school students performing at the distinguished level will: apply and evaluate the components of total wellness; explore positive and potentially negative effects of environmental health issues; explain the causes of and the prevention skills for communicable and non-communicable diseases; self-assess one's family history impact on personal health; and illustrate how public health and social policies, along with government regulations, influence healthy lifestyles.	High school students performing at the above mastery level will: compare and contrast the components of total wellness; identify and discriminate between positive and potentially negative effects of environmental health issues; differentiate between the causes of and the prevention skills for communicable and non-communicable diseases; analyze how family history impacts personal health; and explain how public health and social policies, along with government regulations, influence healthy lifestyles.	High school students performing at the mastery level will: list the components of total wellness; identify positive and potentially negative effects of environmental health issues; recognize the causes of and the prevention skills for communicable and non-communicable diseases; recognize how family history impacts personal health; and list public health and social policies that influence healthy lifestyles.	High school students performing at the partial mastery level will with encouragement: list the components of total wellness; identify positive and potentially negative effects of environmental health issues; recognize the causes of and the prevention skills for communicable and non-communicable diseases; relate how family history impacts personal health; and list public health and social policies that influence healthy lifestyles.	High school students performing at the novice level will with guidance and assistance: list the components of total wellness; identify positive and potentially negative effects of environmental health issues; recognize the causes of and the prevention skills for communicable and non-communicable diseases; describe how family history impacts personal health; and list public health and social policies that influence healthy lifestyles.
<b>Objectives</b>	<b>Students will</b>			
HE.HS.1.01	compare and contrast the components of total wellness (i.e., social, physical, mental, emotional, spiritual).			
HE.HS.1.02	differentiate between the positive and potentially negative effects of local and global environmental health problems (e.g., pollution air, land, water, noise, exposure to sun, pesticides, food production).			

HE.HS.1.03	analyze and interpret how public health and social policies, along with government regulations (e.g., local, state, federal, world health organizations), influence health promotion and disease prevention.
HE.HS.1.04	differentiate between the causes of communicable (e.g., STDs, HIV/AIDS, bacterial/viral infections) and noncommunicable (e.g., heredity, lifestyle, environment) diseases.
HE.HS.1.05	identify and apply skills to prevent communicable (e.g., STDs, HIV/AIDS, bacterial/viral infections) and noncommunicable (e.g., heredity, lifestyle, environment) diseases.
HE.HS.1.06	analyze how genetics and family history can impact personal health (e.g., DNA, genetic diseases, genetic counseling).

<b>Grade HS</b>	<b>Health Education</b>			
<b>Standard:2</b>	<b>Culture, Media, and Technology (HE.S.2)</b>			
(HE.S.2)	Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.			
<b>Performance Descriptors HE.S.2</b>				
<b>Distinguished</b>	<b>Above Mastery</b>	<b>Mastery</b>	<b>Partial Mastery</b>	<b>Novice</b>
High school students performing at the distinguished level will: compare and contrast the influences of culture on health behaviors; evaluate the motives/causes of media impact on health behaviors; compare and contrast the positive and negative impacts of technology; and evaluate how peers influence healthy and unhealthy behaviors.	High school students performing at the above mastery level will: analyze the influences of culture on health behaviors; identify the motives/causes of media impact on health behaviors, differentiate between positive and negative impacts of technology; and analyze how peers influence healthy and unhealthy behaviors.	High school students performing at the mastery level will: identify the influences of culture on health behaviors; identify motives of media impact on health behavior, list positive and negatives of technology; and recognize how peers influence healthy and unhealthy behaviors.	High school students performing at the partial mastery level will with encouragement: identify the influences of culture on health behaviors; identify motives of media impact on health behavior; list positive and negatives of technology; and recognize positive and negative peer pressure.	High school students performing at the novice level will with guidance and assistance: identify the influences of culture on health behaviors; identify motives of media impact on health behavior; list positive and negatives of technology; and identify positive and negative peer pressure.
<b>Objectives</b>	<b>Students will</b>			
HE.HS.2.01	recognize cultural diversities and their influences on health behaviors (e.g., ATOD, life expectancy, risky behaviors).			
HE.HS.2.02	evaluate how media perspectives of health impact on personal, family and community health (e.g., books, magazines, newspaper, radio, TV, internet).			

HE.HS.2.03	explore technology (e.g., exercise equipment, virtual reality, computers, computerized equipment) and its influence on personal, family, and community health.
HE.HS.2.04	identify factors in the community that influence health (e.g., schools, religion, traditions, socio-economic, geography, values).
HE.HS.2.05	analyze how peers influence healthy and unhealthy behaviors (e.g., positive and negative peer pressure).

<b>Grade HS</b>	<b>Health Education</b>			
Standard: 3	Health Information and Services (HE.S.3)			
(HE.S.3)	Students will demonstrate the ability to access valid information and products and services to enhance health.			
<b>Performance Descriptors HE.S.3</b>				
<b>Distinguished</b>	<b>Above Mastery</b>	<b>Mastery</b>	<b>Partial Mastery</b>	<b>Novice</b>
High school students performing at the distinguished level will: locate, utilize and evaluate health services; and analyze factors that influence personal choices on health promotion products and services.	High school students performing at the above mastery level will: locate and utilize health services; and identify factors that influence personal choices on health promotion products and services.	High school students performing at the mastery level will: locate health services; and list factors that influence personal choices on health promotion products and services.	High school students performing at the partial mastery level will with encouragement: locate health services; and list factors that influence personal choices on health promotion products and services.	High school students performing at the novice level will with guidance and assistance: locate health services; and list factors that influence personal choices on health promotion products and services.
<b>Objectives</b>	<b>Students will</b>			
HE.HS.3.01	identify and evaluate the validity of health information, products and service (e.g., books, magazine advertisements, infomercials/TV, internet, newspaper advertisements, billboards, radio).			
HE.HS.3.02	identify the factors (that influence personal choices on health promoting products based on current information (e.g., quackery, food labels, media, peers, family).			
HE.HS.3.03	locate and utilize resources to identify health care services advantageous for optimal health care (e.g., speakers, hotlines, internet, yellow pages).			

<b>Grade HS</b>	<b>Health Education</b>
Standard:4	Communication (HE.S.4)

(HE.S.4)	Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.
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<b>Performance Descriptors HE.S.4</b>				
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Distinguished	Above Mastery	Mastery	Partial Mastery	Novice
High school students performing at the distinguished level will: implement the skills outlined in the peer mediation/ conflict resolution models; and demonstrate appropriate ways to express feelings in a variety of situations.	High school students performing at the above mastery level will: employ the skills outlined in the peer mediation/conflict resolution models; and describe and exhibit appropriate ways to express feelings in a variety of situations.	High school students performing at the mastery level will: recall the skills outlined in the peer mediation/conflict resolution models; and describe appropriate ways to express feelings in a variety of situations.	High school students performing at the partial mastery level will with encouragement: recall the skills outlined in the peer mediation/conflict resolution models; and describe appropriate ways to express feelings in a variety of situations.	High school students performing at the novice level will with guidance and assistance: recall the skills outlined in the peer mediation/conflict resolution models; and describe appropriate ways to express feelings in a variety of situations.

<b>Objectives</b>	<b>Students will</b>
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HE.HS.4.01	utilize skills for effective communication in discussions concerning ATOD, nutrition, sexuality, and relationships with peers, family and others.
HE.HS.4.02	exhibit healthy ways to express feelings, needs and desires in different situations (e.g., good sportsmanship, ending relationships, death and dying, stages of grief).
HE.HS.4.03	demonstrate a variety of communication skills (e.g., verbal, non-verbal, listening, writing, technology, workplace).
HE.HS.4.04	identify potentially harmful situations (e.g., domestic violence, dating violence) and devise strategies and develop skills to avoid such situations through refusal, negotiation and collaboration skills (e.g., peer mediation, conflict resolution, support groups, constructive “I” statements).

<b>Grade HS</b>	<b>Health Education</b>
Standard: 5	Decision-Making (HE.S.5)

(HE.S.5)	Students will demonstrate the ability to use decision-making skills to enhance health.
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**Performance Descriptors HE.S.5**

Distinguished	Above Mastery	Mastery	Partial Mastery	Novice
High school students performing at the distinguished level will: implement the skills outlined in the peer mediation/ conflict resolution models; and demonstrate appropriate ways to express feelings in a variety of life situations; and self-assess the effectiveness of one’s health-related decisions.	High school students performing at the above mastery level will: employ the skills outlined in the peer mediation/conflict resolution models; describe and exhibit appropriate ways to express feelings in a variety of life situations; and analyze health-related decisions.	High school students performing at the mastery level will: recall the skills outlined in the peer mediation/conflict resolution models; describe appropriate ways to express feelings in a variety of life situations; and evaluate health-related decisions.	High school students performing at the partial mastery level will with encouragement: recall the skills outlined in the peer mediation/conflict resolution models; describe appropriate ways to express feelings in a variety of life situations; and describe the effect of health-related decisions.	High school students performing at the novice level will with guidance and assistance: recall the skills outlined in the peer mediation/conflict resolution models; and describe appropriate ways to express feelings in a variety of life situations; and describe the effect of health-related decisions.

Objectives	Students will
HE.HS.5.01	apply a decision-making process for various life situations (e.g., ATOD, food choices, weight control, relationships, health care providers, making purchases, education and career options).
HE.HS.5.02	identify and discuss health concerns that require collaborative decision-making (e.g., sexuality, STDs, HIV/AIDS transmission/prevention, refusal skills).
HE.HS.5.03	analyze the effects of potentially harmful decisions that impact health and the effect these decisions have on their family, community and self (ATOD use, STD transmission, pregnancy prevention, teen parenting).
HE.HS.5.04	formulate alternatives to health-related issues or problems (e.g., defense/coping mechanisms).
HE.HS.5.05	evaluate the effectiveness of health-related decisions (e.g., personal assessments).

<b>Grade HS</b>	<b>Health Education</b>
Standard:6	Goal Setting (HE.S.6)

(HE.S.6)	Students will demonstrate the ability to use goal-setting skills to enhance health.				
<b>Performance Descriptors HE.S.6</b>					
	<b>Distinguished</b>	<b>Above Mastery</b>	<b>Mastery</b>	<b>Partial Mastery</b>	<b>Novice</b>
	High school students performing at the distinguished level will: prioritize personal health practices, implement a personal-health plan, and implement strategies to achieve a personal health goal.	High school students performing at the above mastery level will: examine personal health practices, develop a personal-health plan, and compare and contrast strategies to achieve a personal health goal.	High school students performing at the mastery level will: assess personal health practices, list a personal-health plan, and identify strategies to achieve a personal health goal.	High school students performing at the partial mastery level will with encouragement: recognize personal health practices, discuss a personal-health plan, and list strategies to achieve a personal health goal.	High school students performing at the novice level will with guidance and assistance: recognize personal health practices, discuss a personal-health plan, and list strategies to achieve a personal health goal.
<b>Objectives</b>	<b>Students will</b>				
HE.HS.6.01	assess personal health practices and overall health status (e.g., personal assessments, medical screenings, health-fair).				
HE.HS.6.02	develop a plan to attain a personal health goal that addresses strengths, needs, and risks (e.g., short-term/long-term goals).				
HE.HS.6.03	implement strategies and monitor progress in achieving a personal health goal (e.g., periodic assessment).				
HE.HS.6.04	design an effective long-term personal health plan (e.g., individualized/group projects).				

<b>Grade HS</b>	<b>Health Education</b>				
<b>Standard:7</b>	<b>Health Behaviors (HE.S.7)</b>				
(HE.S.7)	Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.				
<b>Performance Descriptors HE.S.7</b>					
	<b>Distinguished</b>	<b>Above Mastery</b>	<b>Mastery</b>	<b>Partial Mastery</b>	<b>Novice</b>
	High school students performing at the distinguished level will: relate safe and risky health behaviors to their consequences; evaluate the	High school students performing at the above mastery level will: compare and contrast safe and risky health behaviors; recognize and demonstrate positive	High school students performing at the mastery level will: list safe and risky health behaviors; recognize positive effects of nutrition/physical on	High school students performing at the partial mastery level will with encouragement: list safe and risky health behaviors; list effects of nutrition/	High school students performing at the novice level will with guidance and assistance: list safe and risky health behaviors; list effects of nutrition/

effects of nutrition/physical activity on health; analyze and predict the impact of short-term/long-term health decisions; analyze, use, and apply appropriate methods of managing stress in a variety of stressful situations; evaluate signs of depression/suicide and recommend prevention strategies; differentiate and employ ways to develop good character to improve self-esteem; and incorporate prevention strategies to create a safe and healthy environment.	effects of nutrition/physical activity on health; analyze the impact of short-term/long-term health decisions; apply and use appropriate methods of managing stress in a variety of stressful situations; identify and distinguish signs of depression/suicide; differentiate ways to develop good character to improve self-esteem; and identify and develop ways to ensure a safe and healthy environment.	health; explain the impact of short-term/long-term health decisions; recognize appropriate methods of managing stress in a variety of stressful situations; identify signs of depression/suicide; identify how character impacts self-esteem; and identify aspects of a safe and healthy environment.	physical on health; list the impact of short-term/long-term health decisions; recognize appropriate methods of managing stress in a variety of stressful situations; list signs of depression/suicide; describe character impacts self-esteem; and list aspects of a safe and healthy environment.	physical on health; list the impact of short-term/long-term health decisions; recognize appropriate methods of managing stress in a variety of stressful situations; list signs of depression/suicide; describe character impacts self-esteem; and list aspects of a safe and healthy environment.
<b>Objectives</b>	<b>Students will</b>			
HE.HS.7.01	complete a personal health assessment and detail behavioral changes and strategies needed to enhance health and reduce risk (e.g., personal risk assessment, wellness inventory).			
HE.HS.7.02	recognize and demonstrate the positive effects of nutrition and physical activity on health (e.g., <a href="http://www.mypyramid.org">www.mypyramid.org</a> ).			
HE.HS.7.03	list examples and explain short and long term impacts of health decisions (e.g., smoking, good diet, wearing seat belts) on the individual, family and community (e.g., lung cancer, heart disease, STDs).			
HE.HS.7.04	identify signs of stress (e.g., physical, mental/emotional, social) and common stressors (e.g., personal, environmental) and develop effective stress management.			
HE.HS.7.05	identify causes, warning signs (e.g., physical, mental/emotional) and prevention strategies of depression and suicide (e.g., counselors, hotlines, outreach programs).			
HE.HS.7.06	identify ways to develop good character and improve self-esteem (e.g., self-efficacy, role playing).			

HE.HS.7.07	identify causes (e.g., accidents, natural disasters), preventions (e.g., CPR, first aid, in-school emergency plan) and treatments for injuries and list responsible actions to create a safe and healthy environment (e.g., ATVs, helmets, boating, bicycling, firearms, seatbelts, fire safety).
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<b>Grade HS</b>	<b>Health Education</b>			
<b>Standard:8</b>	<b>Advocacy (HE.S.8)</b>			
(HE.S.8)	Students will demonstrate the ability to advocate for personal, family and community.			
<b>Performance Descriptors HE.S.8</b>				
<b>Distinguished</b>	<b>Above Mastery</b>	<b>Mastery</b>	<b>Partial Mastery</b>	<b>Novice</b>
High school students performing at the distinguished level will: analyze and compare community resources that promote health information and ideas; and create and assess a health advocacy plan for personal/family/community that employs the use of positive health messages and school/community support services; and analyze health messages and communication techniques for a specific audience.	High school students performing at the above mastery level will: identify and evaluate community resources that promote health information and ideas; create a health advocacy plan for personal/family/community that employs the use of positive health messages and school/community support services; and utilize and explain health messages and communication techniques for a specific audience.	High school students performing at the mastery level will: locate community resources that promote health information and ideas; compile positive health messages; list school/community support services; and utilize health messages and communication techniques for a specific audience.	High school students performing at the partial mastery level will with encouragement: locate community resources that promote health information and ideas; compile positive health messages; list school/community support services; and state health messages and communication techniques for a specific audience.	High school students performing at the novice level will with guidance and assistance: locate community resources that promote health information and ideas; compile positive health messages; and list school/community support services; and state health messages and communication techniques for a specific audience.
<b>Objectives</b>	<b>Students will</b>			
HE.HS.8.01	use written, audio and visual communication methods to express health messages (e.g., posters, reports, role playing).			
HE.HS.8.02	demonstrate the ability to adapt health messages to characteristics of a particular audience (e.g., peer educators, role playing).			

HE.HS.8.03	promote the use of personal, family and community resources in health care situations (e.g., family practitioners, community medical facilities, yellow pages).
HE.HS.8.04	identify school support staff (e.g., counselors, nurses, professionals) and community health services (e.g., Big Brothers, mental health facilities, ministerial counseling) and describe the impact this service has on individual school and community health.
HE.HS.8.05	demonstrate that he/she is a responsible and a productive citizen who helps ensure the health, safety and security of the community (e.g., community service, school organizations, community organizations).
HE.HS.8.06	adapt health messages and communication techniques to a specific target audience (e.g., peer educators, peer mediators).

## APPENDIX B

### Interview Consent Form

**INFORMED CONSENT**  
**Health Education and Teen Perinatal Outcomes Study**  
**High School Health Teacher Interview**

**SHIPPING ADDRESS**  
1031 Quarrier Street  
Charleston, WV 25301-2314

Edvantia, a nonprofit research firm in Charleston (WV), has been contracted to conduct a study to meet the requirements of the House Concurrent Resolution No. 53 (HCR 53). Kristine Chadwick at Edvantia is the lead project manager and Chandra O'Connor and Jessica Gore are the researchers for the project.

In order to examine county school systems with good perinatal health education, we need to gather information from high school health teachers. Health educators just like you will be asked to participate in a phone interview, which should take approximately 40 minutes to complete and will be recorded so that we adequately capture the experiences of teachers. As soon as the recording is transcribed and/or summarized, it will be destroyed. All participants will be selected purposefully by researchers, with assistance from the West Virginia Perinatal Partnership. Data from these interviews will help us understand the health education implemented in your county.

Names and titles will not be associated with the responses you provide, however, as one of a few health educators selected, your responses cannot be guaranteed confidentiality. If you wish to make "off the record" comments that are not traceable to you, let me know and I will code your responses appropriately. Data from interviews will be stored in secure electronic files accessible only by appropriate Edvantia staff.<sup>12</sup>

While there may be no direct benefits to individuals for participating in these data collection activities and no direct compensation for doing so, these data are critical for fully documenting good perinatal health education for the purpose of planning to make improvements in perinatal and birth outcomes. Please note that participation is voluntary and you may cease participation at any time without reprisal or penalty. There are no known risks associated with this project that are greater than those ordinarily encountered in daily life.

If you have any questions about this evaluation effort, please contact Dr. Chadwick by phone (800.624.9120, ext. 5429) or e-mail ([kristine.chadwick@edvantia.org](mailto:kristine.chadwick@edvantia.org)). For information on protection of research participants' rights, contact Karen Bradley (800.624.9120, ext. 5841, [karen.bradley@edvantia.org](mailto:karen.bradley@edvantia.org)).

**I understand and consent to participate in the described interview:**

**Participant signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Edvantia researcher signature:** *Chandra O'Connor*

**Date:** 100109

<sup>12</sup> Data collected for research purposes are stored in compliance with International Standards Organization (ISO) 17799 requirements for access, security, and redundancy. Data are stored in an encrypted format in a centralized, electronically and physically secure server at Edvantia for a period not to exceed five years. All electronic data of a personal nature are safeguarded and available only to those project leaders, staff, and technologists having a need to know within the specific criteria as set forth in the approved project plan. Furthermore, data will be summarized in aggregate. Your name will not be associated with any of the findings. Also, the Edvantia IRB has the authority to inspect consent records and data files only to assure compliance with approved procedures. If, during the process of collecting data, a threat of violence against an individual or entity is uncovered, Edvantia cannot guarantee anonymity or confidentiality to any party involved.

## APPENDIX C

### Health Teacher Interview Protocol

## High School Health Teacher Interview

### Perinatal Study

To meet the requirements of House Committee Resolution (HCR) 53, the West Virginia Perinatal Network has contracted with Edvantia to conduct a study of county school systems with good perinatal health education for the purpose of planning to make improvements in perinatal and birth outcomes for both parents twenty years of age and under and their newborn infants. The purpose of this interview is to understand the health education provided to students in your county.

1. Please describe your role as a high school health teacher (experience, duration of role, responsibilities).
2. How is the health curriculum decided in your county?
  - A. What textbook do you use?
  - B. Other than state content standards and objectives (CSOs), are there any guidelines or standards that you have to follow (i.e., county-based)?
  - C. Is curriculum theory or research-based?
  - D. How often does the health curriculum change? AND/OR What types of changes have been made?
4. What health courses are required for students in your county? (Probe for: course name, number of courses offered, grade level taught, length of course, general course description) Are students (or their parents) allowed to “opt out”? And if so, what percentage opts out?
5. What health courses are offered as electives to students in your county? (Probe for: course name, number of courses offered, grade level taught, length of course, general course description) What types of students typically enroll in these classes?
6. To what extent does the curriculum address the following content areas related to perinatal education?
  - a. Female and male reproduction (Probe: Discussion of ovulation, menstruation, fertilization of human ova, manufacturing of sperm)
  - b. Strategies to avoid social pressure and influence (e.g., drugs, pregnancy)
  - c. Sexual abuse- Definition, warning signs and dealing with it; domestic abuse by a boyfriend- signs, symptoms and ways to get help, how to report it etc
  - d. Contraception methods (Probe: full range—not just condoms but also newer technology like the vaginal ring, or patch, or female condom, etc.—and is it full information on contraceptives and not just failure rates)
  - e. Sexually transmitted disease (Probe: Discussion of prevention and symptoms)
  - f. Planning and nutrition for a healthy pregnancy: Probe for the following:

- Pregnancy trimesters and importance of accessing maternity care within first trimester
- Importance of term delivery and specific risks to the infant if born prematurely
- Process of lactation and importance of breast milk to an infant
- Preconception health involves working with your health provider now to have a healthy pregnancy in the future
- Ask what you need to know about diabetes, high blood pressure, infections and other health problems; medicines and home remedies; achieving a healthy weight; unsafe chemicals to avoid; pregnancy spacing; and family history, including premature births
- Discussion of nutritional needs of developing fetus and importance of vitamin supplements with folic acid prior to pregnancy
- Effect of alcohol, tobacco, and addictive drugs on developing fetuses
- Caring for self; healthy ways to cope with stress, etc.

g. Does the curriculum include discussion about becoming a parent and the responsibilities of parenting?

7. To what extent does the curriculum focus on building students' self-efficacy for life skills (e.g., personal and social competence to address skills)?
8. What types of instructional strategies are employed in the health curriculum? (Probe for: methods to engage students, materials used)
9. How often do school health nurses conduct informational presentations on health education to students? To what audiences (grade levels)? What has been the content of their presentations?
  - a. Do you bring in outside presenters on the topic of pregnancy planning? If so, what are their credentials, and what is the content of the presentations?
10. What types of health education programs exist outside the school setting in your county?
12. What is your reaction to [County] being identified as one of the counties with the most favorable perinatal outcomes?
13. Request documentation (lesson plans, CSOs, etc.)

## APPENDIX D

### County Ranking on Key Indicators

County Ranking on Key Indicators

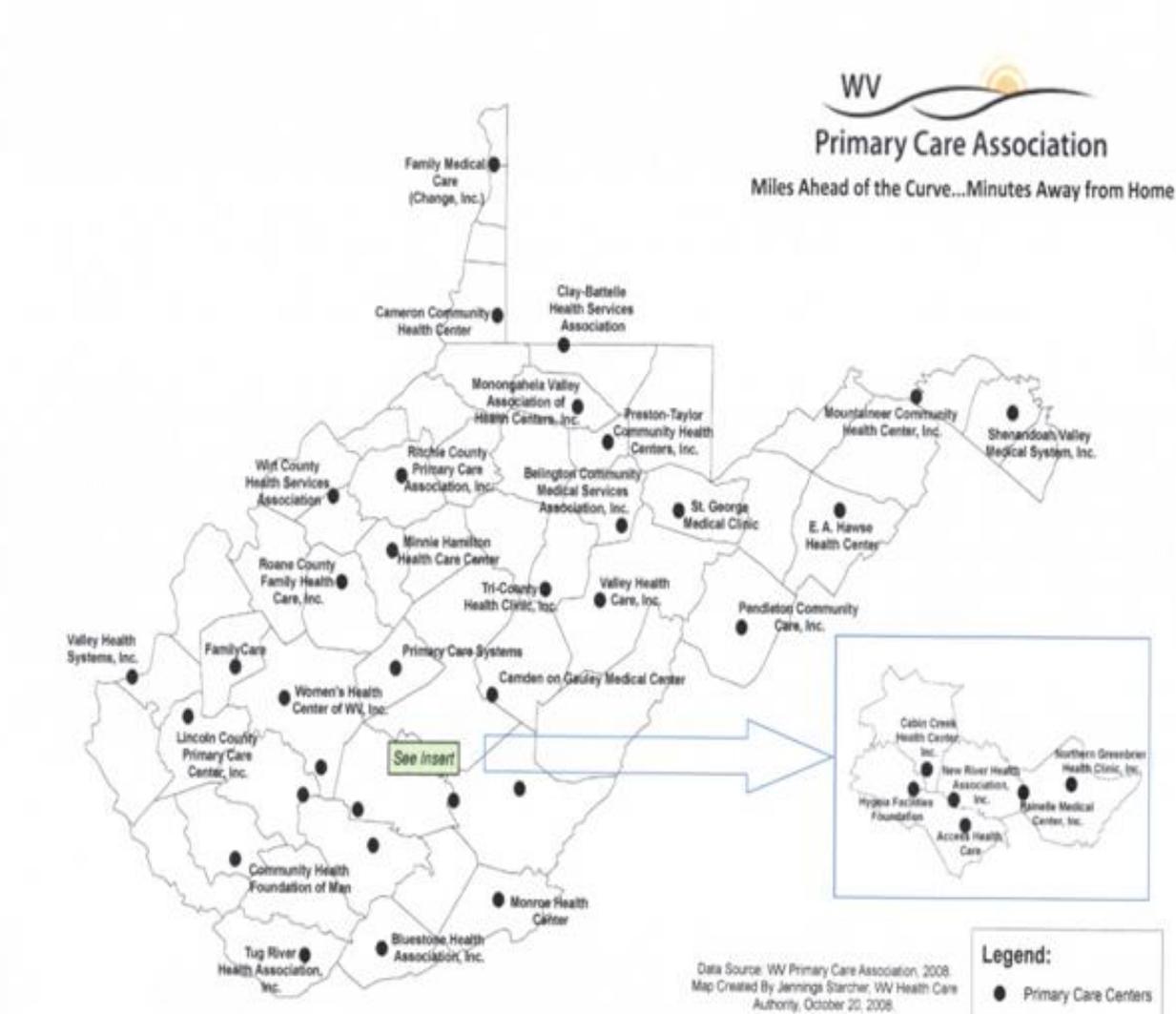
County Rank	Teen Births	LBW	Second Child	Smoking
1	Monongalia	Pleasants*	Hardy*	Hardy*
2	Putnam	Hampshire	Nicholas	Pleasants*
3	Pendleton	Monroe*	Upshur	Monroe*
4	Jefferson*	Upshur	Wirt	Morgan
5	Brooke	Roane	Mineral	Lewis*
6	Marion	Tucker	Monongalia	Tucker
7	Greenbrier	Grant	Roane	Mineral
8	Morgan	Pendleton	Webster	Calhoun
9	Monroe*	Jackson	Preston	Berkeley
10	Jackson	Braxton	Lewis*	Wood
11	Mineral	Lewis*	Jefferson*	Raleigh
12	Pocahontas	Brooke	Brooke	Jefferson*
13	Hardy*	Webster	Gilmer	Harrison
14	Ritchie	Ritchie	Greenbrier	Pendleton
15	Lewis*	Hancock	Clay	Barbour
16	Hancock	Greenbrier	Fayette	Grant
17	Upshur	Barbour	Wetzel	Taylor
18	Mason	Raleigh	Kanawha	Clay
19	Calhoun	Wyoming	Taylor	Hancock
20	Kanawha	Preston	Putnam	Hampshire
21	Marshall	Clay	Marshall	Jackson
22	Raleigh	Ohio	Braxton	Putnam
23	Nicholas	Hardy*	Marion	Boone
24	Ohio	Jefferson*	Logan	Gilmer
25	Tucker	Putnam	Ohio	Ohio
26	Gilmer	Summers	Morgan	Nicholas
27	Webster	Berkeley	Lincoln	Brooke
28	Pleasants*	Lincoln	Randolph	Monongalia
29	Doddridge	Marshall	Harrison	Upshur
30	Berkeley	Boone	Hampshire	Wirt
31	Barbour	Taylor	Raleigh	Greenbrier
32	Fayette	Cabell	Barbour	Preston
33	Harrison	Harrison	Mingo	Cabell
34	Preston	Logan	Mercer	Mercer
35	Roane	Randolph	Jackson	Roane
36	Taylor	Mingo	Wood	Fayette
37	Cabell	Marion	Tyler	Kanawha

38	Wood	Wood	Tucker	Marion
39	Summers	Kanawha	Pocahontas	Summers
40	Grant	Nicholas	Calhoun	Wyoming
41	Wayne	Fayette	Pleasants*	Wetzel
42	Hampshire	Wetzel	Berkeley	Wayne
43	Logan	McDowell	Wayne	Mason
44	Randolph	Monongalia	Boone	Mingo
45	Boone	Mason	Summers	Braxton
46	Mingo	Mineral	Cabell	Randolph
47	Wirt	Doddridge	Grant	Ritchie
48	Mercer	Morgan	Ritchie	Webster
49	Tyler	Mercer	Hancock	Doddridge
50	Clay	Tyler	Pendleton	Tyler
51	Braxton	Gilmer	Monroe*	Lincoln
52	Wetzel	Wayne	McDowell	Logan
53	Lincoln	Wirt	Mason	McDowell
54	Wyoming	Pocahontas	Wyoming	Pocahontas
55	McDowell	Calhoun	Doddridge	Marshall

## APPENDIX E

### Community-Based Health Centers

# Community-Based Health Clinics



## APPENDIX F

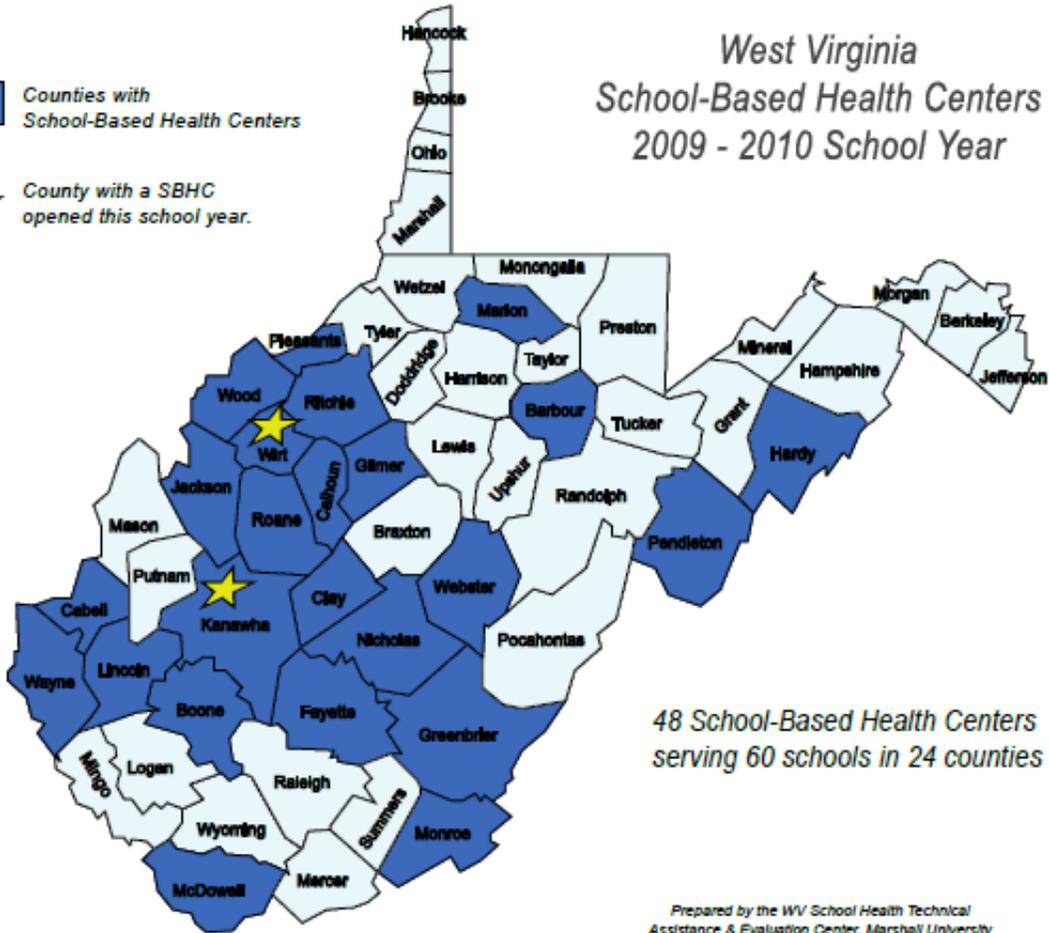
### School-Based Health Centers

School-Based Health Clinics

 Counties with School-Based Health Centers

 County with a SBHC opened this school year.

West Virginia  
School-Based Health Centers  
2009 - 2010 School Year



48 School-Based Health Centers  
serving 60 schools in 24 counties

Prepared by the WV School Health Technical Assistance & Evaluation Center, Marshall University  
June 2009

## APPENDIX G

### Adolescent Pregnancy Prevention Initiative Presentations

Adolescent Pregnancy Prevention Initiative Presentations by County

County	APPI Presentations					2003-2007 Total Visits	Population*	APPI Presentation per Resident
	2003	2004	2005	2006	2007			
	Visits	Visits	Visits	Visits	Visits			
Pendleton	0	13	1	5	5	24	7,896	0.304
McDowell	10	30	4	10	13	67	25,348	0.264
Hardy	4	10	4	4	9	31	12,990	0.239
Grant	2	8	2	6	4	22	11,434	0.192
Gilmer	0	7	2	3	0	12	7,037	0.171
Tucker	0	5	0	0	7	12	7,162	0.168
Doddridge	3	9	0	0	0	12	7,491	0.160
Pleasants	2	4	2	1	2	11	7,521	0.146
Wetzel	0	15	3	2	5	25	17,160	0.146
Marion	12	29	12	8	16	77	56,484	0.136
Morgan	3	7	2	5	3	20	15,514	0.129
Pocahontas	0	9	2	0	0	11	8,944	0.123
Clay	2	2	0	3	5	12	10,352	0.116
Summers	4	5	2	4	1	16	13,917	0.115
Hampshire	0	13	3	3	4	23	21,247	0.108
Monroe	2	2	3	4	3	14	13,503	0.104
Mineral	4	9	3	5	7	28	27,147	0.103
Greenbrier	2	8	7	8	10	35	34,656	0.101
Wyoming	5	8	2	3	2	20	24,830	0.081
Brooke	2	12	2	2	2	20	24,939	0.080
Lincoln	2	1	3	5	5	16	22,251	0.072
Calhoun	2	2	0	1	0	5	7,294	0.069
Wirt	0	3	1	0	0	4	5,790	0.069
Logan	1	7	6	6	5	25	36,745	0.068
Taylor	0	9	0	2	0	11	16,127	0.068
Fayette	4	5	7	8	7	31	47,270	0.066
Monongalia	10	17	9	11	6	53	84,370	0.063
Mingo	2	10	4	0	1	17	27,585	0.062
Webster	0	2	0	0	4	6	9,790	0.061
Jefferson	4	15	2	1	5	27	46,270	0.058
Wayne	3	2	2	4	10	21	42,418	0.050
Hancock	3	3	2	4	3	15	31,742	0.047
Lewis	1	3	0	3	1	8	17,148	0.047
Harrison	9	7	6	6	3	31	68,032	0.046
Raleigh	3	8	0	11	14	36	79,254	0.045
Mercer	3	3	3	10	7	26	62,113	0.042
Tyler	0	2	0	2	0	4	9,439	0.042

<b>Ritchie</b>	0	4	0	0	0	4	10,515	0.038
<b>Boone</b>	2	2	0	3	2	9	25,785	0.035
<b>Cabell</b>	2	7	5	9	8	31	95,043	0.033
<b>Barbour</b>	2	2	0	1	0	5	15,653	0.032
<b>Marshall</b>	3	0	3	2	3	11	34,897	0.032
<b>Preston</b>	0	4	1	1	3	9	29,705	0.030
<b>Kanawha</b>	8	14	14	0	20	56	195,413	0.029
<b>Putnam</b>	4	1	3	0	6	14	53,035	0.026
<b>Berkeley</b>	3	2	3	6	7	21	85,272	0.025
<b>Mason</b>	0	0	4	1	1	6	26,079	0.023
<b>Nicholas</b>	0	0	1	2	3	6	26,243	0.023
<b>Wood</b>	2	6	1	3	6	18	87,336	0.021
<b>Braxton</b>	0	2	0	1	0	3	14,771	0.020
<b>Ohio</b>	0	4	1	3	1	9	45,828	0.020
<b>Roane</b>	0	0	0	1	1	2	15,362	0.013
<b>Randolph</b>	0	0	0	0	3	3	28,254	0.011
<b>Jackson</b>	0	1	0	1	0	2	28,285	0.007
<b>Upshur</b>	1	0	0	0	0	1	23,668	0.004
<b>Total</b>	131	353	137	184	233	1038	1,810,354	

\*2003 estimates from the U.S. Census Bureau