



West Virginia Perinatal Partnership Follow-Up Study: Summary

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West Virginia Perinatal Partnership 2013 Follow-Up Study: Summary

Following a 2009 exploratory study, Edvantia conducted a three-phase follow-up study to explore available data and provide evidence-based conclusions about effective education practices with regard to teen pregnancy outcomes and teen pregnancy prevention in West Virginia. In Phase 1, researchers used state health outcome data to identify the counties with the best and worst perinatal outcomes in West Virginia. During Phase 2, researchers collected data about educational practices and services in each identified county. Researchers also estimated the public costs of births to teens in the selected counties as part of the Phase 2 analyses. Phase 3 focused on identifying a set of educational practices and resources associated with pregnant teens' and their babies' health outcomes across the state.

Phase 1

The purpose of Phase 1 of the study was to determine a subset of counties with the best and worst perinatal outcomes. Researchers examined the distribution of county scores for various health indicators to identify key indicators for sorting the 55 counties into groups with similar characteristics. Researchers collaborated with staff from the West Virginia Perinatal Partnership (hereafter referred to as the Partnership) to select the following four indicators, considered most likely to be improved by education efforts: (1) births to teens, (2) babies with low birth weight born to teens, (3) births to teens resulting in a subsequent (second or higher order) child, and (4) teens who smoked during pregnancy. A hierarchical cluster analysis of the data resulted in three groups of counties. The first cluster, consisting of eight counties, had the best (most favorable) outcomes across the identified variables, and the third cluster, consisting of 14 counties, had the worst (least favorable) outcomes. The 22 identified counties falling into the first and third clusters were selected for Phase 2 analyses.

Phase 2

Phase 2 findings provide a description and comparison of the resources, services, and health and wellness education that are available to public high school students in the counties with favorable and unfavorable outcomes.

Program Records and Existing Information

- **Health Education Assessment Project (HEAP) – Growth and Development Scores:** Scores for sixth grade students were comparable in the counties with favorable and unfavorable outcomes; however, counties with favorable outcomes had higher scores on the eighth grade and high school health education assessments covering growth and development topics.

Counties Selected for Phase 2

Counties with Favorable Outcomes

Hardy
Lewis
Monroe
Morgan
Nicholas
Pendleton
Pleasants
Tucker

Counties with Unfavorable Outcomes

Braxton
Doddridge
Lincoln
Logan
McDowell
Mason
Mingo
Pocahontas
Randolph
Ritchie
Summers
Tyler
Wayne
Wyoming

- **Family and Consumer Sciences (FACS) Class Enrollment:** On average, counties with unfavorable outcomes tended to have two to four times more students enrolled in *Life Connections* and *Parenting and Child Development* (a class no longer officially part of the Human Services curriculum, but still being offered by some districts). Enrollment in *Parenting and Strong Families* courses, which replaced the *Parenting and Child Development* course, was similar in both groups.
- **Health Center Access:** Residents in counties with favorable outcomes, on average, tended to have much greater access to school-based, community-based, and satellite health centers per county than residents in counties with unfavorable outcomes.
- **Adolescent Pregnancy Prevention Initiative (APPI) Presentations:** Overall, counties with favorable outcomes had more APPI presentations than counties with unfavorable outcomes.
- **Right from the Start (RFTS):** Counties with favorable outcomes had fewer RFTS enrollees than their unfavorable outcome counterparts, which is to be expected given the high teen birth rates in this group. However, counties with favorable outcomes had a much greater rate of enrollment in RFTS enhanced services than did counties with unfavorable outcomes.
- **West Virginia Prenatal Risk Screening Instrument:** The trimester in which pregnant teens began their prenatal care was similar in favorable and unfavorable outcomes counties, with slightly more than half reporting that they received care beginning in the first trimester. The two most common psychosocial risk factors for both outcome groups were unplanned pregnancy and unemployment or inadequate income. More investigation is needed into the finding that slightly more than one third of pregnant teens in both groups indicated that their pregnancies were not unplanned (i.e., they intended to get pregnant). Teens' reasons for late entry into prenatal care were also similar in both groups, with the most common reasons being financial issues and delayed insurance enrollment. Furthermore, transportation was an issue for pregnant teens in counties with unfavorable outcomes; they also tended to be at higher risk for domestic violence and nutritional concerns.
- **Birth Score Form:** Counties with favorable and unfavorable outcomes were similar across most of the seven factors included in newborns' birth scores. However, fewer teens in the counties with favorable outcomes reported using nicotine while pregnant, and a higher percentage of them reported that they intended to breastfeed exclusively. Additionally, a higher percentage of babies born to teens in counties with unfavorable outcomes received high birth score ratings, and a higher percentage of the babies were transferred to the Neonatal Intensive Care Unit (NICU).

Payment and Cost Data

- **Payment Source:** For counties both with favorable and unfavorable outcomes, the majority of teen births were covered under Medicaid, a finding that is not surprising given the limitations of many private insurance policies regarding coverage for pregnant dependent minors.
- **Publically Funded Births:** In 2012 alone, the public costs of births to West Virginia teens topped \$20 million, with the state assuming almost \$5.5 million of the expense. Public spending on births to teens in 2012 was, on average, approximately \$148,179 greater in counties with unfavorable outcomes compared to counties with favorable



outcomes. During the past five years, the public has invested nearly \$121 million on births to teens in West Virginia; the state's portion of the bill has been almost \$33 million.

- **Costs of Teen Childbearing:** Based on the number of births in 2012, the long-term costs to the public associated with teen childbearing in West Virginia in that year alone was nearly \$48 million, with an estimated state and local long-term impact of approximately \$26 million. Further, the 2012 birth data suggest that the long-term costs of teen childbearing are approximately \$359,406 more, on average, in counties with unfavorable outcomes compared to counties with favorable outcomes. Births to West Virginia teenage girls during the past five years have resulted in more than \$283 million in additional long-term costs to the public, with an estimated state and local impact of nearly \$153 million.

Educator Practices Survey

Researchers invited health educators and FACS educators in the counties with favorable and unfavorable outcomes to participate in an online survey about education topics and practices in their classrooms and schools. In December 2012, 35 of the 94 teachers contacted in the counties with favorable (11 teachers) and unfavorable (24 teachers) outcomes responded to the survey, and 26 teachers completed all items on the survey.

- **Professional Demographics and General Information:** Teachers in the counties with favorable outcomes had slightly more experience teaching and considerably more experience teaching classes related to health, pregnancy, parenting, or similar topics. They also spent more classroom hours covering content related to sexual health.
- **Health Teacher Certification:** The majority of respondents in both groups reported that they taught health. All of the responding health teachers in the counties with favorable outcomes indicated having a certification for teaching health; additionally, two thirds of the responding FACS teachers in those counties indicated that they had such a certification even though it was not required of them. However, in counties with unfavorable outcomes, three of the responding health teachers explicitly indicated that they did not have a certification for teaching health.
- **Standards and Guidelines:** Health teacher respondents in the counties with favorable outcomes reported higher rates of familiarity (reporting that they were either somewhat or very familiar) with the Next Generation Health Education Content Standards and Objectives than did their peers in the counties with unfavorable outcomes. FACS teacher respondents in the counties with unfavorable outcomes reported higher rates of familiarity overall (reporting that they were either somewhat or very familiar) with the parenting education curriculum than did their peers in the favorable outcomes group. However, FACS teachers in the favorable outcome counties who indicated familiarity with the parenting education curriculum were more likely to say that they were very familiar with those standards.
- **Sexual Health Education Philosophy:** At least half of the teachers in both groups reported that their schools or districts had a comprehensive approach to sexual health education, although teachers from counties with unfavorable outcomes were more likely to do so.
- **Parental Control:** Health teachers in counties with favorable outcomes were most likely to report that parents could choose to remove their children from instruction in



the prevention, transmission, and spread of AIDS and other sexually transmitted diseases (STDs). Teachers in the counties with unfavorable outcomes were more likely than their peers in the other outcomes group to report that parents could choose to remove the child from other sexual/reproductive health education topics.

- **Comfort Level for Teaching Various Topics:** A greater percentage of health teacher respondents in counties with favorable outcomes reported feeling very comfortable teaching about topics related to general health, sexual health, and perinatal health. However, a greater percentage of health teachers in counties with unfavorable outcomes reported feeling very comfortable teaching about parenting topics. Similar percentages of health teachers in both outcome groups reported feeling uncomfortable teaching about sexual health and perinatal health. All FACS teachers in both groups reported feeling comfortable teaching all topics.
- **Implementation of Centers for Disease Control and Prevention (CDC) Best Practices:** Health teachers in the counties with the most favorable outcomes generally reported greater implementation of 14 of the 16 CDC best practices in health education.
- **Instructional Strategies:** Overall, counties with favorable outcomes reported using a greater variety of instructional strategies (four of the five types of strategies included on the survey) more often than did the respondents in the counties with unfavorable outcomes.
- **Health Topics Content Coverage:** The survey addressed several topics identified by the Partnership as necessary and important for a comprehensive and effective education in perinatal health (e.g., contraception methods, planning and nutrition for a healthy pregnancy, effects of substances on a developing fetus, and the importance of breast milk). Some topics (e.g., waiting to have sex, refusal skills, and decision-making skills) received more coverage than others. Generally, however, most teachers did not indicate a large degree of coverage for the topics identified by the Partnership.
 - **Content Coverage (Health Teachers):** Among the general sexual health education topics assessed on the survey, health teachers were most likely to focus on refusal skills (a topic that teachers in favorable outcome counties tended to focus on to a greater extent), decision-making skills, and strategies to avoid social pressure. Topics relating to reproduction were covered at roughly the same level in both outcome groups, although teachers in counties with favorable outcomes were more likely to report not covering certain topics at all. A plurality of teachers in both groups covered reproduction topics to a small extent. Coverage of contraception methods tended to be moderate or small, when the topics were addressed at all, and teachers in counties with unfavorable outcomes reported a greater degree of coverage. Most health teachers reported covering the majority of topics related to planning and nutrition for a healthy pregnancy at least to a small extent, although coverage did tend to be greater in counties with unfavorable outcomes. The exceptions, however, were for topics related to the effects of various substances on developing fetuses (e.g., tobacco, alcohol, and drugs); health teachers in counties with favorable outcomes tended to indicate a greater focus on those topics. Teachers in counties with unfavorable outcomes, however, were more likely to indicate covering abuse-related topics to a large extent. Teachers in counties with favorable outcomes were more likely to cover the transmission, prevention, symptoms, and consequences of STDs to a large extent.



- **Content Coverage (FACS Teachers):** Although FACS teachers are not directly charged with covering sexual health topics in their courses, most of the survey respondents did indicate covering most of the sexual health education topics at least to some degree. All FACS teachers addressed waiting to have sex; teachers in counties with favorable outcomes were more likely to cover this topic to a large extent. FACS teachers were more likely than health teachers to address the various pregnancy options included on the survey, with a greater focus on parenting. All FACS teachers also addressed decision-making skills to a large extent and strategies to avoid social pressure and influence at least to a moderate extent. In both outcome groups, there was a greater focus on topics related to female reproduction (e.g., ovulation and menstruation) than male reproduction (e.g., anatomy and sperm production). FACS teachers in counties with unfavorable outcomes were more likely to cover contraceptive methods to a greater extent than teachers in the favorable outcomes group; the method receiving the least coverage was emergency contraception. FACS teachers in counties with unfavorable outcomes were also more likely to cover most topics related to planning and nutrition for a healthy pregnancy to a greater extent. The process of lactation tended to receive the least attention in both groups. Topics relating to healthy relationships and abuse were not universally covered by FACS teachers. Likewise, coverage of topics related to STDs tended to vary greatly.
- **Use of School Nurses as Presenters:** The majority of respondents in both groups reported that they never used their school nurses for sexual health education presentations. Such a finding is understandable given school nurses' caseloads and primary focus (i.e., providing health services rather than instruction). However, a higher percentage of teacher respondents in counties with unfavorable outcomes did report using school nurses for presentations on sexual health education.
- **Use of Outside Presenters and Community Resources:** Teachers in counties with favorable outcomes were more likely than their peers in counties with unfavorable outcomes to invite outside presenters to address topics related to pregnancy planning and prevention (two thirds versus one half). Of the types of guest speakers invited to give presentations on those topics or others related to sexual health education, teen pregnancy prevention or sex educators tended to be the most frequently invited guests.
- **Frequency of Professional Development:** Slightly more than two fifths of respondents in both groups reported that they never received professional development on topics related to sexual and perinatal health. Of those who had, respondents in counties with favorable outcomes reported receiving professional development on sexual and perinatal health slightly more frequently than their peers in counties with unfavorable outcomes.
- **Need for Professional Development:** The majority of respondents in both groups felt that they needed additional professional development to be more effective teachers of sexual and perinatal health topics, although the rate was higher among teachers from counties with favorable outcomes.

Phase 3

Multilevel Linear Growth Curve modeling revealed some interesting findings within the statewide data. First, as expected, there were differences between the counties with respect to the prevalence of various health indicators, resources, and services; quite often, rates of change over



time also varied among counties. For instance, certain educational practices (i.e., APPI presentations) seemed to increase over time throughout the state, and some health services seemed to decrease over time (i.e., RFTS enrollment). In both cases, the rates of change varied from county to county.

With regard to pregnant teens' and their babies' health outcomes, there was again a great deal of variation among counties. As one might expect, some counties had better perinatal outcomes for mothers and babies than others, both in 2008 (the first year of available data) and in 2011 (the last year of available data). Additionally, from 2008 to 2011, some counties seemed to improve more significantly than others with respect to various outcomes, such as number of teen births, prevalence of smoking among pregnant teens, prevalence of low birth weight babies, and prevalence of referrals for NICU care. Few health indicators remained stable over time.

Relationships Among Educational Practices and Health Indicators

Although there were some unexpected negative relationships across all health outcomes, the relationships of school-based health centers, FACS enrollment, APPI presentations, and RFTS services with health indicators for teen mothers and their babies seemed promising. Additionally, there was some evidence suggesting positive relationships between certain educational resources and services (i.e., community-based health centers and family planning contracts) and positive changes in certain health behaviors and outcomes (i.e., decreased rates of smoking during pregnancy and referrals for NICU care).

Two findings stood out as particularly difficult to explain. Although the presence of family planning contracts in a county seemed to be related to decreased referrals for NICU care after births to teens, the relationship between family planning contracts and other outcomes is complicated. Counties with greater numbers of family planning contracts tended to have more negative results for several health indicators and outcomes (e.g., prevalence of babies at risk and higher rates of smoking during pregnancy). It is possible that counties with negative health outcomes have been more likely to institute family planning contracts as a method for promoting healthier behaviors and better outcomes. Similarly, the relationship between HEAP knowledge and health outcomes (i.e., higher HEAP scores are associated with more negative health indicators) is inconclusive and unexpected, and there is no clear explanation for the unexpected effects.

The data did not fully explain the prevalence of low birth weight babies. Certainly, teens in general are at a greater risk of delivering babies with low birth weights. Other explanations likely relate to the relationship between babies' health, especially with regard to birth weight, and other factors associated with a mother's health status during pregnancy (e.g., nutrition, exercise, and drug or alcohol use). Exploration of these factors is beyond the scope of the current study; however, these are important issues deserving further investigation.

Limitations

Findings of this study were based on data collected from 2008 to 2011; the final 2012 and 2013 data going forward may reveal different findings. It is critical to keep in mind that all effects reported in this study are correlational rather than causal; although some of the relationships examined might make sense as causal relationships, the analyses and conclusions presented here are correlational in nature and should be interpreted as such. Further, some data collected at the county level were proxy measures for variables that could not be examined directly via the data. The small number of survey respondents also limits the generalizability of the teacher survey findings. Regardless of these limitations, this study has value in providing a starting point for



future investigations into which educational services and practices seemed to be promising in supporting healthy pregnancies and healthy babies for West Virginia teens who become pregnant.

Reflections and Recommendations

The outcomes of teen childbearing tend to be negative both for teen mothers and their children, which can translate into negative outcomes for society at large. By working to improve perinatal outcomes for babies of teen mothers, West Virginia can work toward improving long-term outcomes—in health, education, and socioeconomic status—for those babies, their mothers, and the state as a whole.

Prevent or Delay Teen Pregnancy and Childbearing

A first step in improving perinatal outcomes in West Virginia is primary prevention of teenage pregnancy. Helping girls and young women delay pregnancy beyond the teen years may help to reduce some of the health risks infants of younger mothers face. Further, delaying pregnancy until adulthood will give teens a greater chance of completing high school and providing a better educational and economic foundation for their families when they do decide to become parents. Although there is no simple solution for preventing or delaying teen childbearing, it is an important step toward improving perinatal health outcomes.

The current health education standards relative to sexual and reproductive health focus on pregnancy prevention and tend to highlight the potential negative outcomes of risky sexual behavior. A thorough examination of the content standards and enacted curricula throughout the state was outside the bounds of this research; however, such a study should be undertaken to examine how local districts and schools are implementing the state standards and how those standards—both as espoused and as enacted—align with curriculum-based programs recognized as effective in reducing teen pregnancy.

Promoting primary prevention of teen pregnancy may also require the reexamination and revision of some state-level policies. West Virginia lawmakers may want to reexamine portions of state code addressing teens' ability to consent to and receive contraceptive services to determine what, if any, changes might be most beneficial for the state. It is worth noting that the American Congress of Obstetricians and Gynecologists recently released an opinion indicating that long-acting reversible contraception (LARC) (e.g., intrauterine devices and contraceptive implants) was safe for most women, including adolescents, and that adolescents at risk for unintended pregnancies may benefit from increased access to LARC methods. A recent study of the CHOICE project suggests that removing cost barriers to contraceptives, including LARC methods, reduces both the number of unplanned pregnancies and abortions. The safety of these methods for teens and their high effectiveness in preventing pregnancies should be thoroughly examined to determine the merit of allowing teens to consent to LARC methods and ascertain how best to support access to and effective use of contraceptives.

Study the Curricula

As mentioned above, a study of West Virginia's sexual health education curriculum could help to identify alignment between West Virginia's curriculum and those curriculum-based programs identified as effective in preventing teen pregnancy. Also, because districts and schools have some control over how the curriculum is enacted locally, there may be important differences in lessons, focus, or instructional strategies that contribute to positive or negative outcomes. Therefore, a thorough study of sexual health curricula across West Virginia districts could examine



the extent to which sexual health education is enacted as intended and whether local variations are more or less effective in promoting healthy outcomes. Variations most effective in promoting positive outcomes could then be recommended across the state as evidence-based practices shown to be effective with West Virginia teens.

In addition to studying the sexual health education curriculum, it would be worthwhile to study the curricula enacted for different FACS foci. Although FACS courses do not provide health education *per se*, they do aim to help students develop the knowledge and skills they need for making good decisions and ensuring overall well-being in their lives. Such a focus on wellness and positive decision making can be built upon to promote good decision making with respect to all aspects of students' lives, including such perinatal health decisions as delaying pregnancy until adulthood, following proper nutrition recommendations before and during pregnancy, choosing to breastfeed following birth, and so on. Although the primary focus of FACS courses might not be perinatal health in and of itself, providing a solid foundation of general perinatal knowledge during the teenage years could lead to positive decision making and behaviors and improved outcomes when those teens do become parents (preferably, as adults).

Stop Smoking

In Phase 1 of the study, the variable that most substantially differentiated between the county clusters was the rate at which pregnant teens smoked during their pregnancies. When Phase 2 data were examined, nicotine use during pregnancy also emerged as a major contributor to the high birth scores babies born to teen mothers received. Tobacco use, then, is clearly a substantial issue for pregnant West Virginia teens. Through the West Virginia Department of Health and Human Services, RFTS program, and the state's Women, Infants, and Children (WIC) program, West Virginia provides support, counseling, and education for tobacco cessation. West Virginia clearly recognizes the problem of tobacco use in the state—particularly among women and girls who are pregnant—and is investing substantial resources in programs designed to reduce tobacco use.

This research revealed that there was a positive impact of community- and school-based health centers in that a greater number of centers were associated with a greater decline in smoking rates among pregnant teens. Therefore, those health centers may be good resources to prevent or reduce rates of teen smoking, particularly among pregnant teens. Resources at local health centers could be combined with other state resources to ensure that accurate and comprehensive information about smoking and other tobacco use is provided to children and teens from an early age.

Encourage Breastfeeding

This study found that the primary contributors to high birth scores among babies born to teen mothers were nicotine use during pregnancy, feeding intention, and the mother's education and age. As long as teens give birth, the factors of mother's age and education level will continue to negatively affect their babies' birth scores. However, use of tobacco during pregnancy and feeding intention can more directly be influenced by educational efforts. The WIC program promotes and provides support for breastfeeding through the provision of information, educational materials, and support to pregnant women and new mothers and by providing informational materials and updates to other stakeholders (e.g., health care providers, neighborhoods, and churches). Developing a culture of support for breastfeeding within the state can eventually influence teens' perceptions of breastfeeding and its importance in infant development. Further, ensuring that

classes that teach nutrition and human development address the importance of breast milk for infants can help provide a strong base of knowledge for the benefits of breastfeeding for babies.

Continue Improving Access to Prenatal Health Care

During the 2013 regular session, the West Virginia Legislature passed Senate Bill 22, requiring insurers to pay for maternity services for women and girls enrolled as dependents on health insurance policies that otherwise include coverage for those services (e.g., routine prenatal care and testing). In doing so, West Virginia's political leaders have worked to remove one of the primary barriers to teens' access to timely prenatal health care—delayed insurance enrollment. Other primary barriers to timely prenatal care among pregnant teens may be a lack of awareness about the importance of prenatal care and limited transportation options for getting to their healthcare providers' offices to receive services. Raising awareness among teens about the importance of adequate prenatal health care could be achieved through general or targeted public awareness campaigns and through appropriate inclusion of the content in school courses that discuss and explore sexual health education or human development. Such information will be necessary for all people who may go on to experience pregnancy, regardless of the timing or intention (i.e., planned or unplanned).

Working to address pregnant teens' struggles with adequate transportation for attending prenatal appointments will likely be an ongoing challenge for West Virginia. Limited transportation combined with limited local access are likely important contributors to the unfavorable perinatal outcomes observed in the counties that fell into the bottom cluster in this study. Increasing locally available access to health care (e.g., through starting and supporting school- or community-based health centers in counties that currently do not have access) could be a crucial first step in helping pregnant teens overcome the problems presented by their lack of transportation.

Collaborate for Success

Addressing the problems of teen pregnancy and childbearing and their associated causes and outcomes should be a collaborative endeavor involving multiple stakeholders and perspectives from across the state. West Virginia has a history of successfully bringing together different agencies to work toward addressing issues and impacts related to teen pregnancy and childbearing. The Mountain State can build on this history of successful interagency and interorganizational collaboration to focus efforts to prevent or delay teen childbearing and to improve perinatal outcomes for all West Virginia mothers and babies—particularly those most in need of support.

Collaboration may involve forming new partnerships or task forces to address specific issues and recommend new policies, programs, or procedures. However, collaboration may also take the form of working together to remove barriers that pregnant and parenting teens might face. A simple way for organizations and agencies to collaborate may take the form of ensuring that all agencies are aware of programs that may be relevant to the populations they serve. Further, agencies may be able to work together to reexamine or consolidate applications for services, where appropriate, to minimize administrative burdens. State entities can then work together to coordinate services and ensure that pregnant and parenting teens and their babies receive comprehensive health and social services.

In addition to collaboration among agencies at the same level (e.g., state or county), collaboration among entities at different levels is important. Entities likely to come into early contact with pregnant teens (e.g., schools) should ensure that a knowledgeable and trusted representative can meet with them to provide information about local and state programs to promote and support a healthy pregnancy and childbirth.



Agencies may also want to examine the possibility of collaborating more frequently to examine disparate sources of data related to teen pregnancy, childbearing, and perinatal outcomes in West Virginia. Instituting a practice of regularly bringing together different data sources across departments or agencies could help state agencies and officials monitor perinatal outcomes more effectively and recognize when changes may be needed for improvements (or when changes have led to improvements). This kind of regular data monitoring using multiple sources, experts, and perspectives can also lead to a thorough and holistic understanding of factors affecting perinatal outcomes in West Virginia.

In whatever form such collaborations take, it is important for all participants to share costs. Some collaborative practices do not necessarily incur costs beyond those associated with routine operations. Other practices that do require additional funding should be supported by all collaborators, both to share costs in an era of fiscal austerity and to ensure commitment and buy-in among collaborators. Just as all levels—local, state, and federal—share the costs associated with teen pregnancy and childbearing, so too should all levels collaborate on and invest in finding actionable solutions to these challenges.

Expand Research

Using disparate data sources to study a small number of topics can lead to findings that are not easy to explain. Therefore, it would be worthwhile to invest more resources into investigating those issues to explore the data and findings and work toward finding evidence-based solutions.

Glossary of Terms and Programs

Abstinence Only/Abstinence until Marriage Sexual Health Education: Philosophy of or approach to sexual health education that emphasizes abstinence from all sexual behaviors (or all sexual behaviors outside of marriage) and may present sexual activity outside of marriage as harmful. This philosophy toward sexual health education does not include information about contraception or disease-prevention methods (i.e., condoms). If these are discussed, it is to emphasize failure rates.

Abstinence Plus Sexual Health Education: Philosophy of or approach to sexual health education that emphasizes the benefits of waiting to have sex, and includes medically accurate information about contraception and disease-prevention methods.

Adolescent Pregnancy Prevention Initiative (APPI): The APPI conducts educational presentations for schools, community groups, faith-based organizations, and parents. Presentations are focused on preventing unintended pregnancy, HIV, and sexually transmitted infections and diseases. 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.

Babies with low birth weight born to teen mothers: A percentage calculated by dividing the number of babies born to teen mothers with low birth weight by the total number of babies born to teen mothers.

Birth Score: The West Virginia Birth Score form is used to identify newborns who are at the greatest risk for poor health outcomes and to link these infants with primary pediatric services and case management for close follow-up during the first year of life. This form must be completed for all births. For this study, birth score data were obtained for all births to women and girls 19 years of age and younger during the specified years.

Community-Based Health Center: Community-based health centers provide low-cost health services to individuals in a community. Not all sites provide comprehensive services, but they all provide clinical care.

Comprehensive Sexual Health Education: Philosophy or approach to sexual health education that includes age appropriate, medically accurate information on a broad set of topics related to sexuality. Information about both abstinence and contraception, including condom usage, is discussed to prevent pregnancy and the spread of sexually transmitted infections and diseases.

Family and Consumer Sciences (FACS): FACS is an area of study designed to help students develop the knowledge and skills necessary for leading productive lives. The American Association of FACS defines the area as “the comprehensive body of skills, research, and knowledge that helps people make informed decisions about their well-being, relationships, and resources to achieve optimal quality of life” (<http://www.aafcs.org/AboutUs/FCS.asp>). The FACS field includes several different areas, including human development and nutrition and wellness, and it is considered an applied science. National standards for FACS content include areas of study related to human development across the lifespan, parenting roles and responsibilities, nutrition and wellness, and family systems (see <http://www.nasafacs.org/national-standards--competencies.html> for more details). In West Virginia, FACS courses fall within the West Virginia Department of Education’s Career and Technical Education Human Services career cluster (for more information, visit <http://careertech.k12.wv.us/human.html>).

Health Education Assessment Project (HEAP): HEAP is a standardized health education assessment designed to measure student health knowledge. According to descriptions of the



assessment available from the West Virginia Department of Education (WVDE) Office of Healthy Schools, HEAP questions are taken from the State Collaborative on Assessment and Student Standards HEAP. The questions on the assessment were selected based on their alignment with the West Virginia K-4 Wellness and 5-12 Health Education Content Standards and Objectives. The HEAP assessments are administered at Grade 6, Grade 8, and at the high school level. Students in all grade levels are asked health education questions in five specific content areas: growth and development (the content area of interest for this study), nutrition, physical activity, alcohol and other drugs, and tobacco. HEAP assessments at Grade 6 also include questions about injury prevention, and assessments at the Grade 8 and high school levels include questions about mental health topics. For more information and a description of statewide findings, refer to the 2011-2012 HEAP executive summary available from the WVDE at <http://wvde.state.wv.us/healthyschools/documents/HEAPExecutiveSummary2012.docx>

Life Connections: Life Connections is a Family and Consumer Sciences course offered in the counties of interest in this study. According to the course description available on the West Virginia Department of Education website: “Life Connections will enable students to develop skills for assuming their role in society as productive, successful individuals. Through integrated, project-based learning founded on real-life situations and issues, by utilizing basic skills and higher order thinking skills, the student will learn management problem techniques, resource management, communication skills, and skills in relationships. The course helps students develop competence in setting and achieving personal goals, in examining career options, in handling their current and future jobs and careers, in meeting basic needs, and in managing finances. They will learn to use skills in critical and creative thinking, management, communication, and leadership to solve problems and make decisions. Students will utilize problem-solving techniques, and teachers should provide each student with real world learning opportunities and instruction. Students will participate in a local student organization.” For more information about this course, please see <http://careertech.k12.wv.us/cte-draft-csos/HU Human Services Cluster/0901 Life Connections.doc>

Parenting and Child Development: Parent and Child Development is a former Family and Consumer Sciences (FACS) course offered in the counties of interest in this study. The course was formally phased out of the official FACS curriculum in 2009, although some districts still choose to offer the course as an option for their students. According to the archived course description available on the West Virginia Department of Education website: “This course is designed to help students evaluate readiness for parenting while examining appropriate parenting and child development practices. Students will develop an awareness of societal issues affecting families and explore support systems. Students will use reasoning processes, individually and collaboratively, to take responsible action in families, workplaces, and communities. Students will utilize problem-solving techniques and participate in hands-on activities. Teachers should provide each student with real world learning opportunities and instruction related to education careers. Students will participate in a local student organization, such as FCCLA [Family, Careers, and Community Leaders of America].” For more information, please see the archived description: <http://careertech.k12.wv.us/cte-draft-csos/HU Human Services Cluster/0902 Parenting and Child Development.doc>

Parenting and Strong Families: Parenting and Strong Families is a Family and Consumer Sciences course offered in the counties of interest in this study. The course was designed to replace the former Parenting and Child Development course. According to the archived course description available on the West Virginia Department of Education website: “This course is designed to help students evaluate readiness for parenting while examining appropriate Parenting and Strong Families practices. Students will develop an awareness of societal issues affecting families and explore support systems. Students will use reasoning processes, individually and



collaboratively, to take responsible action in families, workplaces, and communities. Students will utilize problem-solving techniques and participate in hands-on activities. Teachers should provide each student with real world learning opportunities and instruction related to education careers. Students will participate in a local student organization.” For more information about this course, see the course description at <http://careertech.k12.wv.us/cte-draft-csos/HU Human Services Cluster/0903 Parenting and Strong Families.doc>

Perinatal: Refers to the time just before and just after birth. The perinatal period is defined differently by different sources. However, it is typically understood to encompass the time period from weeks 20-28 of pregnancy (middle to late second trimester) through weeks 1-4 after birth.

Prenatal Risk Screening Instrument (PRSI): The PRSI is a standardized tool designed to alert obstetric providers to the need for further evaluation and assessment of high-risk pregnant women. The PRSI was first implemented in 2011 and is intended to provide a comprehensive and uniform approach to maternal risk screening.

Right from the Start (RFTS): RFTS is a home visitation program that provides comprehensive services for pregnant women and infants on Medicaid, including care coordination and prenatal care services. To be eligible for RFTS services, the pregnant woman must be a West Virginia resident, have a valid Medicaid card or RFTS Maternity Services card (medical coverage for non-Medicaid eligible pregnant uninsured or underinsured aliens, pregnant women whose income is less than 185% of the federal poverty level, and pregnant teens age 19 and under regardless of family income offered through the West Virginia Office of Maternal, Child, and Family Health), and have a referral form (Alternate Entry R019).

Right from the Start (RFTS) Enhanced Services: This is a component of the RFTS program that includes face-to-face client/Designated Care Coordinator sessions related to parenting, childbirth, preventive self-care, and nutrition education. A pregnant woman is eligible for enhanced prenatal care services if she has a valid Medicaid card or RFTS Maternity Services card for a current pregnancy. All RFTS clients are eligible for enhanced prenatal care services, even if they choose not to participate in care coordination.

Right from the Start (RFTS) Enhanced Services Only: This is an option within the RFTS program. Clients who refuse or do not participate in care coordination services but do receive the additional enhanced services are considered enhanced services only clients.

Right from the Start (RFTS) Enrollee: A RFTS enrollee is any woman who has given consent for RFTS services and who has a completed an Initial Assessment form. An initial assessment is the Designated Care Coordinator’s review and evaluation of the client’s needs to identify necessary services for management of the client's care.

School-Based Health Centers: School-based health centers are health clinics that bring preventive and immediate care, as well as counseling, health education, and sometimes dental care, to children and adolescents at their schools. 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.

Sexual Health Education: For the purposes of this study, sexual health education includes any and all instruction students receive in topics related to human sexuality, sexual activity, anatomy and processes of reproduction, contraception, consequences of sexual activity, and related topics. In West Virginia, the standards for sexual health education are outlined in Policy 2520.5, the Next Generation Health Education 5-12 Content Standards and Objectives for West Virginia Schools, available from the West Virginia Department of Education at <http://wvde.state.wv.us/policies/policy.php?p=2520.5>



Smoking During Pregnancy: For this study, researchers determined the prevalence of teens who smoked during their pregnancies by calculating a percentage, dividing the number of teens who indicated smoking while they were pregnant (using Birth Score data) by the total number of teen births.

Subsequent Births: Births to teens that result in a second or higher order (e.g., third or fourth child); the percentage in this study is calculated by dividing the number of births to teens resulting in a second or higher order child by the total number of births to teens.

Teen Births (Phase 1 and 3): In Phase 1 of this study, the rate of births to teenage girls and women was calculated by dividing the number of babies born to teens by the total number of babies born to girls and women of all ages. That proportion was also used in Phase 3 modeling to examine relationships among indicators and outcome variables. Elsewhere in this report, “teen births” or “births to teens” may be understood to mean the number of births to teenage girls and women.

West Virginia Perinatal Partnership: The West Virginia Perinatal Partnership (referred to throughout this report as the Partnership) is a statewide partnership of health care professionals and public and private organizations whose goal is to improve perinatal health in West Virginia. The Partnership is a project of the West Virginia Higher Education Policy Commission, Office of the Vice Chancellor for Health Sciences, and is managed by West Virginia Community Voices, Inc. Many organizations throughout West Virginia participate in or contribute to several projects and initiatives sponsored by the Partnership. A Central Advisory Committee and its subcommittees provide the general direction for the Partnership, and various working groups provide specific guidance or information as needed. For more information, please visit <http://www.wvperinatal.org/default.htm>

The West Virginia Perinatal Partnership sponsored this research. Several member and partnering organizations and stakeholders provided data or advice in the development of the study instruments and final report. However, the content of the report does not necessarily reflect the opinions or positions of those organizations, and you should not assume their endorsement of the findings or recommendations presented.