

Access to Prenatal Care in Rockbridge
County: A Community-Based Research
Project

Women's and Gender Studies Capstone

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As a Politics major, with minors in Poverty and Human Capability Studies and Women's and Gender Studies, I have spent a major portion of my academic education exploring specific issues affecting low-income women, particularly the issue of intimate partner violence. This work has coincided with my volunteer and internship experiences, where I have worked with low-income domestic violence victims and their children both domestically and abroad. In the summer of 2010, I worked at a shelter for domestic violence survivors in Guatemala. During this summer I began to realize how closely issues of domestic violence are linked to larger public health issues, particularly access to family planning services and women's health care. Upon my return to the United States, I sought to further explore these connections in a community-based research project focusing on women's health issues in Rockbridge County. I chose a topic that was both relevant to my interests and the community's needs and found that Rockbridge County's most recent challenge in the area of women's health was the result of the closing of the birthing center in spring of last year. In April 2010, the maternity ward of Carillion Stonewall Jackson Hospital closed, leaving many community members fearful that many women's access to vital prenatal and pregnancy care services would be severely diminished. In response, a coalition of women's advocates and area health professionals was established to explore this issue and to develop possible solutions. My project is a supplement to these efforts. This paper, which will function as my Women's and Gender Studies capstone, results from a semester-long look into the issues of prenatal and maternal health care services for women and infants residing in Rockbridge County, with a specific focus on women and infants of lower socioeconomic status. Because the maternity ward is unlikely to reopen, due to limited patient numbers and financial constraints, I also offer potential solutions that will help to ensure that all women,

regardless of socioeconomic status, have access to the prenatal care they need to guarantee healthy outcomes for themselves and their children.

The Importance of Prenatal Health Care

As of April 2010, women in Rockbridge County no longer have access to in-town delivery services. Stonewall Jackson Hospital closed the birthing unit that offered labor and delivery services for residents of Rockbridge County and other communities in close proximity to Lexington. Soon after the closing of the birthing center, the only obstetrician/gynecologist practicing in the county moved out of the area and closed his practice. Currently, neither the hospital nor private practitioners in town offer full-time prenatal or delivery services for women in the area; instead, women are expected to travel to neighboring areas to receive maternity-related care or rely on community-based clinics, such as the Health Department.

The closest health facility where Lexington residents can go for obstetrics care is Augusta Health, located in Fishersville, VA. Other options for women seeking prenatal and obstetric care given include the University of Virginia Health System in Charlottesville, VA, or the Roanoke Carillion Memorial Hospital, located in Roanoke, VA; however, these two additional options are located at least an hour away from Lexington and require reliable access to transportation. Access to transportation is already a known barrier to indigent residents in Lexington, and, as a result, impoverished pregnant women in the local community are less likely to receive adequate prenatal care throughout their pregnancy or reliable access to a quality health care facility when they are ready to give birth.

Since the closing of the maternity ward at Stonewall Jackson Hospital, Lexington is considered a 'high-outflow' community, meaning that women are less likely to deliver in the local hospital and instead travel outside of the county for delivery services (Klerman & Merkatz,

1995). When women do deliver in Lexington, they must first go to the emergency room, which is not only an expensive option for the hospital, but is also potentially dangerous for the woman in the event that her delivery does not go smoothly. Women from high-outflow communities tend to have a higher proportion of difficult and premature births and are more likely to stay in the hospital longer post-delivery. This not only increases the health care costs for the women giving birth but heightens women's risk for suffering health problems or even death during childbirth or afterwards.

Perhaps more serious than the concerns surrounding delivery is the fact that Lexington women's constrained access to prenatal services during pregnancy is likely to adversely affect the quality of prenatal care they receive, if they seek out prenatal care at all. Without accessible prenatal care, low-income women, in particular, are highly unlikely to seek it, as they are limited by additional factors such as difficult job schedules and lack of transportation.

In one revealing public health study, researchers concluded "everything we know about prenatal care suggests that women who must travel long distances to obtain prenatal care in unfamiliar settings will have diminished access and poorer prenatal outcomes" (Nesbitt, Connell, Hart, & Rosenblatt, 1990). In fact, in Rockbridge County and other rural areas affected by poverty, prenatal care is often not even considered a priority, because more pressing needs, such as obtaining sufficient food, paying rent, and finding or holding a job, remain unmet (Klerman & Merkatz, 1995). There may also be cultural factors that decrease rural women's likelihood of seeking prenatal care, which targeted health education could perhaps help to address. Prenatal care is arguably the most effective way of reducing adverse pregnancy outcomes and ensuring the future health of both mother and child, yet too many women, both in Lexington and in rural communities as a whole, are sacrificing this necessary care due to socioeconomic challenges

beyond their control. The implications of such sacrifices are huge. As Rosenblatt suggests, “the loss of basic prenatal care will further destabilize rural communities, striking them at their most vulnerable point” (Rosenblatt, 1989). Without a doubt, the long-term, far-reaching consequences of this lack of access to prenatal care are disconcerting and likely extend beyond the realm of health care alone.

In addition to prenatal care, prenatal support groups and health groups can help to ensure that women remain committed to regular, consistent prenatal care and allow them to find support in a peer group environment. In Lexington, for example, although the hospital no longer offers prenatal or delivery services specifically, it does offer group childbirth classes for both mother and father that allow women to prepare for childbirth, learn more about healthy practices, and develop relationships with other pregnant women in the area. This group is available to all women and their partners in the area, regardless of income, and the classes are covered by Medicaid, as well as other insurance plans.

Although not located in Lexington, August Health in Fishersville, Virginia offers a unique program for pregnant women combining one-on-one prenatal care as well as a peer support group. This program, called Centering Pregnancy allows women to focus on different areas of pregnancy and general healthy practices. Specific class topics include nutrition, exercise during pregnancy, and breastfeeding. Women both support and learn from one another in what Mary Kuzinski, CNM, describes as a fun, comfortable environment. This program is particularly accessible to low-income women in Rockbridge County, as Augusta Health accepts Medicaid and even allows women to have the first, most important prenatal visit, even before approval for Medicaid. In addition, carpooling to each meeting is offered from Lexington. Currently, the group has participants from various socioeconomic backgrounds, although it may be helpful to

increase efforts to advertise this and other similar groups to low-income women to ensure that they too are receiving the care and support they need in preparation for childbirth.

Pregnancy and birth are basic features of our human existence. Although pregnancy and birth can both be categorized as components of our formal health care system, both are much more than mere health procedures. The preparation for and actual birth are experienced as a “joyful series of events that envelope family and community” and that link medical professionals, family, and community members in an ever-repeating celebration of human beginnings (Rosenblatt, 1989). Though pregnancy and childbirth are undoubtedly much more than standard medical procedures, the health care system, including physicians, nurses, midwives, and public health specialists, plays an essential role in supporting and ensuring the successful pregnancies of countless women every year. In fact, childbirth is the *first* hospital experience for nearly 40 percent of maternity patients. Pregnancy and childbirth can be scary, confusing, sometimes painful experiences, and it helps to have caring, invested professionals guiding the way, particularly during the all-important prenatal period. Access to quality, consistent prenatal care is *the* most effective strategy for reducing low birth weight rates and other unfavorable pregnancy outcomes. Women who receive “quantitatively adequate” prenatal care (a minimum of seven visits during pregnancy) are more likely to have desirable pregnancy outcomes than those women who received “quantitatively inadequate” or no prenatal care at all (Klerman & Merkatz, 1995).

In the field of medicine, prenatal care is actually a relatively new addition. Since its introduction, prenatal care has helped health care professionals prevent and treat illnesses in both mothers and babies early on, so that conditions do not worsen or cause permanent health issues for mother or child. Prenatal care has also played a powerful role as a preventative tool, as

women who access prenatal care receive education about the best means of avoiding health risks, improving their own health, maximizing the health of their fetus, and getting prepared for the impending birth of their child. Furthermore, an early entrance into prenatal care allows for the development of a relationship between a pregnant woman and her prenatal care provider.

Prenatal health care providers, who care for women for the many months of pregnancy, are able to tap the unique “window of opportunity for preventative health care” that prenatal care provides (Merkatz & Thompson, 1990). This preventative care includes information about women’s general level of health during pregnancy, as well as support for maintaining a healthy lifestyle in the face of many harmful habits that young women could develop that are detrimental to their health and to the health of their fetus. As a result, prenatal care is usually holistic and can include a wide variety of services, including family planning counseling, nutritional consulting, legal aid, social services, drug abuse referrals, assistance for pregnant women who are experiencing domestic abuse, parenting education, and other services (Rooks, 1997). Clearly, adequate prenatal care requires much more than a woman’s primary physician or obstetrician; it requires the participation of health care professionals, such as doctors, nurses, and midwives, as well as other specialists, including social workers and nutrition counselors.

Nevertheless, accessing this wide range of services during pregnancy and childbirth can be prohibitively expensive. Even excluding the costs of actually raising a child once he or she is born, the costs of pregnancy and giving birth alone are enormous. In the United States today, prenatal care, labor and delivery, and postpartum health care for both mother and baby can cost upwards of several thousand dollars, barring any pregnancy complications. In the event of pregnancy or birth complication, such costs can rise exponentially. For example, even an infant staying a few days in a neonatal intensive care unit would be expensive enough to bankrupt

many parents, if they were forced to pay out of pocket (Sonfield, 2010). Fortunately, most low-income pregnant women are eligible for Medicaid to cover their prenatal care, although they must first apply and have access to a Medicaid provider in their area. Currently in Virginia, Medicaid is available for all pregnant women with incomes up to 150% of the national poverty level.

Because quality prenatal care is so vital, there are clear guidelines and timelines for prenatal care for women. The most commonly used standard for prenatal care is an index that prescribes prenatal care for normal pregnancies in terms of timing and frequency of visits (Kessner, Singer, & Kalk, 1973). Prenatal care is divided into three levels: adequate, intermediate, or inadequate. Pregnancy outcomes are related to these three levels of care (Institute of Medicine, 1985; Showstack, Budetti, & Minkler, 1984; Gorsky & Colby, 1989).

These standards were jointly established by the American Academy of Pediatrics and the American Congress of Obstetricians and Gynecologists in *Guidelines for perinatal care* (2007).

According to these standards, care for pregnant women should begin early on in the first three months of the pregnancy. Adequate care at 36 weeks is defined as nine visits with the first visit occurring in the first trimester (Gifford, Murata and McGlynn, 1996). An early initial prenatal visit has been linked to reduced rates of mortality associated with complications in pregnancy (USPHS, 1989). In addition, an early first trimester visit allows for health-care providers to identify potential high-risk factors in women, such as smoking, diabetes, or chronic high blood pressure, and increases the likelihood that such risk factors can be addressed (Gifford, Murata and McGlynn, 1996).

Seven prenatal doctor visits are considered the minimum, although most indigent women attend significantly fewer prenatal appointments, if any at all (Klerman & Merkatz, 1995). Only

half of the women in families whose incomes fall 150 percent below the federal poverty line receive prenatal care during the first trimester, compared to seventy-five percent of women in families above this level of poverty. Specifically, women receiving Medicaid were less likely to begin prenatal care this early than those using private insurance providers (Klerman & Merkatz, 1995).

As part of routine prenatal care, physicians should also obtain women's smoking history, alcohol history, and drug history during the first prenatal visit. Early identification of women who smoke, drink, or who are substance abusers can lead to counseling and treatment, helping to prevent harm to the fetus (Gifford, Murata and McGlynn, 1996). Ideally, four components of maternity-related care would be made accessible to women: preconception care, prenatal care, labor and delivery management, and postpartum follow-up (Klerman & Merkatz, 1995).

Although women would preferably receive all four components from the same physician, for many—particularly indigent women—different health care professionals and/or agencies may be responsible for each stage of maternity-related care (Klerman & Merkatz, 1995). This is problematic, as it significantly diminishes the ease of information sharing among health-care providers, which often leads to poorer quality care. This may be a factor in why women of low socioeconomic status are more likely to experience adverse pregnancy outcomes, especially with regards to prematurity. Improving indigent women's access to prenatal care is an important preventative measure with long-term implications for both the health of the mother and that of her child. Currently, the specific data demonstrating how poor women in Rockbridge County do in terms of these standards of care is lacking. In order to target more specifically what gaps low-income women in our area face in access to prenatal care, it will be crucial to collect such data, in order to better compare our standards of care with those of other areas. Such information

would help us to better understand the significant increase in infant mortality in the community and allow us to develop more targeted solutions for diminishing such a high rate.

Considering that prenatal care is one of the most common preventative medical procedures—second only to the general medical examination—and is one that will always be in demand (Strong, 2000), it is crucial that women have affordable access to quality care that ensures healthy outcomes for both mother and child. The impact of prenatal care extends far beyond the maternity ward; health problems beginning in the womb often lead to health problems, both mental and physical that will follow a person throughout their entire life. The reality, however, is that prenatal health care in the United States *is* lacking, especially when the United States' health outcomes are compared to other similar developed nations. The infant mortality rate for the United States has consistently been higher than rates in most European countries for over a century. Infant mortality rates are one of the most widely used statistics used to demonstrate the comparative health status of a community. Despite our higher-than-average health care expenditures, the sad reality for women and children in the United States is that the United States maternal health care performance has *worsened* over time in comparison to other nations. Today, the United States' infant mortality rate is at 6.4 out of 1,000 live births, placing us behind nearly 50 other nations, including Hong Kong (1.7), the Czech Republic (2.9), and Cuba (4.7) (Population Reference Bureau, 2010). The main reasons for our nation's persistently high infant mortality rate include high frequency of premature, low, and very low birth weight infants. Currently, the United States mortality rate due to low birth weight is 3.1 per 1,000 births, slightly better than Oman (3.4), but worse than Greece (2.6). In fact, over fifty nations, including countries such as Israel, Romania, and Italy, have lower mortality due to low birth weight rates than the United States, and this number may continue to grow without fundamental changes

in provision of prenatal and maternal care (World Health Rankings, 2010). Infants born to teenage mothers, mothers with less than a high school-level education, and low-income women are most likely to suffer such risk factors.

Low-birth-weight infants account for over two-thirds of all United States newborn deaths every year. Even for low-birth-weight babies that survive, the cost of caring for these newborns is overwhelming. Low-birth-weight infants usually require hospitalization in special intensive care units, sometimes for several weeks. Hospitalization in such facilities can cost thousands of dollars every *single day*. In some more serious cases, infants can be treated in these intensive care units for months (IOM, 1985). Paying thousands per day for medical treatment would be a burden for any individual, but, unfortunately, mothers most likely to give birth to low-birth-weight babies are also those that are least likely to be able to afford to pay for their child's postpartum care. The two most direct causes of low birth weight are premature births and pre-birth conditions that deprive the fetus of adequate nutrition or a sufficient blood supply. Both premature births and insufficient nutrition and blood supply can be traced to a number of different conditions. The conditions include "smoking, maternal use of cocaine and other drugs, vaginal infections, subclinical genital tract infections medical diseases, inadequate diet, stress, physical labor, especially long periods of chronic standing, and unknown pathways that cause low birth weight to be much more frequent among women who are poor, unmarried, or carrying babies they did not plan and may not really want, or a combination of these" (IOM, 1985; Rooks, 1997).

Rockbridge County's infant mortality rate in 2009 (8.8 out of 1,000 live births) was significantly higher than the United States average of 6.4. In fact, the infant mortality rate in Rockbridge County has nearly doubled in the past ten years and continues to grow. From 1990 to

1999, the infant mortality rate was a much lower 4.2 per 1,000 live births, but grew to 8.2 per 1,000 live births from 2000-2006 (Kids Count Data Center 2010). According to the most recent 2009 data, the infant mortality rate is likely still on the rise. Compared to its peer counties and the United States as a whole, Rockbridge County has higher-than-average levels of White, non-Hispanic infant mortality rates, as well as neonatal infant mortality rates. There is no data currently available on infant mortality among Hispanic residents of Rockbridge County, although such data is vital in order to effectively target the prenatal health issues of *all* pregnant women. Please refer to Appendix A for more detailed health status comparisons between Rockbridge County, its peer counties, and the United States.

The hopeful message in these troubling statistics is that all of these conditions are preventable or treatable if women are able to access regular, high-quality prenatal care. Educating a woman about the most effective ways of preventing low birth weight must begin well before a woman begins to give birth; thus, it is vital that *all* pregnant women, especially those with pre-existing health or socioeconomic risk factors, have access to high-quality prenatal care. Nevertheless, it is important to realize that all of the possible ways of preventing low birth weight, even if a woman is able to access regular prenatal care, all ultimately require the “active participation” of the pregnant woman (IOM, 1985; Rooks, 1997). Although a physician or health department worker can advise a woman to quit smoking or eat a well-rounded diet throughout her pregnancy, in the end, “the ways to protect and maximize the health of an unborn baby lie mainly within its mother’s power” (IOM, 1985; Rooks, 1997). It is her choice whether to smoke, drink, eat well, exercise, rest, avoid stress, and protect herself against sexually transmitted diseases. Prenatal care, of course, can only be as effective as a woman is willing to make it; it is she who must keep her appointments and commit to following the advice of her health care

provider. This does not mean, however that women should be left alone to take responsibility for their prenatal health. On the contrary, pregnant women, especially low-income women need support from family members, healthcare professionals and peers as they face the challenges of pregnancy.

Currently in Rockbridge County, there are services available that will allow women to begin following a healthy lifestyle *pre-pregnancy*, but many women do not know about these services. For example, at the Health Department, women can receive information about the importance of folic acid in their diet before becoming pregnant, but most women become pregnant before this valuable education can be passed along. Dr. Troise, the only obstetrician-gynecologist in the area at this time, admits that in an ideal world all women would know about the best health practices prior to becoming pregnant, but more often than not such education does not begin until the woman is already pregnant, if at all.

This gap likely points to more systematic challenges that are difficult to confront. While women are certainly responsible for attending their prenatal appointments and working to pursue a healthy lifestyle while pregnant, the reality is that there are considerable structural barriers that may limit a woman's access to such services. In fact, there are many, often overlapping reasons why women too often do not receive prenatal care or opt not to utilize it. The reasons are certainly not as simple as mere lack of health insurance. Women face a wide range of other challenges, including "logistical hurdles (e.g., transportation, child care and a lack of personal or sick time at work) to quality of care issues (e.g., the need for language services, cultural competency training and night and weekend hours) to social barriers (e.g., low health literacy, immigration concerns, mistrust of providers and discrimination)" (Sonfield, 2010). In Rockbridge County, women are faced by a number of these logistical hurdles, particularly the

lack of transportation and low health literacy. Although limited public transportation exists, through providers such as Rockbridge Area Transportation Services (RATS), women without a car or other reliable source of transportation will find it more difficult to attend regular prenatal care appointments or be close to a hospital with a maternity ward when it comes times for delivery. In regards to low health literacy, most of the area health providers at the recent NOW forum on women's maternal health all agreed that many local women are lacking sufficient health literacy pre-pregnancy, which may mean they will be less likely to utilize prenatal care services.

These factors, among others, are all barriers that most severely affect low-income women. These women may be further burdened by the fact that, statistically speaking, they are more likely than high-income women to have little additional social or familial support during their pregnancy, have "negative or ambivalent" feelings regarding their pregnancy, and are greatly impacted by day-to-day life stresses more common in low-income households (IOM, 1985).

Indigent women are faced with yet another obstacle, one that is less well recognized but is nonetheless still incredibly limiting—that of a deficient source of maternity care that is *accessible* by low-income pregnant women. Many communities, particularly rural communities with access to less health care resources do not have sufficient health departments, community health care centers, or other area facilities that offer prenatal care for women who cannot afford private care. The result is many women who delay their entry into care, perhaps as they try to access services at another facility, and many who are unable to access care at all (Rooks, 1997). In this regard, Rockbridge County actually performs rather well, as it offers a variety of prenatal services, including Dr. Troise's practice, the Health Department, the hospital, and area midwifery

services, which women can access to ensure healthy pregnancy outcomes. Although Lexington no longer has a full-time obstetrician-gynecologist and lost the two family practitioners offering prenatal and maternal care, pregnant women in the area do have access to a variety of alternative pregnancy health services. However, problems do arise due to low-income women's general lack of knowledge about many of the quality services available in the area and a lack of access to such services, particularly those outside of Lexington, due to transportation constraints.

Limited Access to Maternity-Related Care in Rural Areas: The Rule, Not the Exception

Pregnancy and birth are fundamental components of rural life. Although in our culture pregnancy and parturition fall partially within the domain of the formal medical care system, this most basic human experience cannot be reduced to a mere series of encounters between a pregnant woman and a physician. Preparing for and giving birth is experienced as a joyful series of events that envelops family and community in the pageant of human and cultural renewal, and community identity derives from such communal rites of passage (Rosenblatt, 1989).

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Significant structural barriers, such as physical isolation, a relative deficiency of medical personnel and technology, and the presence in rural regions of specific high-risk populations, are typically found in communities in rural America like Lexington (Rosenblatt, 1989). As a result, today in the United States, rural health care providers and patients face a unique set of constraints:

The obstacles faced by health care providers and patients in rural areas are vastly different from those in urban areas. Rural Americans face a unique combination of factors that create disparities in health care...Economic factors, cultural and social differences, educational shortcomings, lack of recognition by legislators and the sheer isolation of living in remote rural areas all conspire to impede rural Americans in their struggle to lead a normal healthy life (Gamm, Hutchison, Dabney, & Dorsey, 2010).

Specifically, with regard to maternal and perinatal health issues, many rural general and family physicians have made the decision to selectively discontinue obstetrical care. According to Rural/Frontier Women's Access to Health Services, "All women in rural areas are affected by

lack of primary and specialty care. This lack of specialty care has a particularly detrimental impact on women of childbearing age” (NRHA, 2007). With reduced access to obstetric and gynecological health services, rural women often delay prenatal care or receive none at all (Nelson, 2009). Women living in rural areas are almost more likely to be poor, many of whom have no health insurance, which further exacerbates the medical professional shortage, since many physicians may find it difficult to make a living in such rural areas or, for those that do stay, find that they are overburdened by their caseload (Rooks, 1997).

Unfortunately, this problem is not limited to Lexington alone. In fact, the state of Virginia has lost 12 obstetrics programs in the last seven years, the majority of which were located in rural communities like Lexington. In addition to limiting women’s access to quality care during delivery, the loss of these programs has also reduced the access to prenatal care in these areas (NRHA, 2010). Like many rural communities, Lexington faces a dearth of specialty physicians in general, which, which is unlikely to change. According to Free Clinic nurse Laura Simpson, because healthcare operates as a business, Lexington is at a disadvantage because it lacks the infrastructure to draw in more specialty physicians or to encourage the maintenance of a full-time community women’s health center, such as the proposed Birthing Center. It is possible for general family practitioners to fill this void but, as witnessed recently in Rockbridge County, it may be difficult for them to carry the entire maternal and delivery needs of an entire community, since they are also expected to provide other types of medical services as well as live their own lives.

As a result of this health care deficit, a major crisis in rural women’s access to obstetrical care has developed in many parts of the United States, and Lexington is no exception. One major cause of this crisis has been the increasing number and cost of obstetrically related medical

malpractice suits. The direct result of the higher rate of suits has been increases in malpractice insurance premiums. As premiums have risen, many physicians have made the decision to stop practicing obstetrics (Rosenblatt & Detering, 1988; Schleuning, Rice, Rosenblatt, 1991).

According to public health specialists, there are four barriers to physician participation in prenatal care for Medicaid-eligible clients: low reimbursement, malpractice liability, administrative annoyances, and psychosocial problems with low-income clients (Machala and Miner, 1991). In recent years, two additional factors have further exacerbated the maternal healthcare access issue-- a decline in the number of doctors practicing obstetrics because of professional liability issues and the growing number of uninsured or underinsured patients in rural America (Rosenblatt, 1989).

Although obstetricians provide most of the maternity care in the country as a whole, family and general practice physicians have been the main source of obstetric care in rural areas, including Lexington. There are no permanent obstetrician-gynecologists in the majority of rural counties, as is the case in Rockbridge County as of 2010. In addition to this obstacle, large numbers of family practitioners are giving up obstetrics in response to the burden of being on-call 24/7 and malpractice worries. This same problem occurred in Lexington, with its loss of its only two family practitioners still offering obstetrical care. As a result, access to any kind of maternity care has become a serious concern for Rockbridge County women, as well as women in most rural areas today (Rooks, 1997). Rosenblatt describes the increasingly common “domino effect,” where, gradually, individual rural physicians in an area decide to give up obstetrical practice. As he writes:

Each physician is one link in an increasingly tenuous chain, and the chain becomes weaker as physicians decide to abandon obstetrical practice. *The final common pathway*

is the closure of the obstetrical unit in the local rural hospital. The inevitable consequence is that the barriers to care grow larger as women are forced to turn to other towns and to other providers for both prenatal and delivery care, a burden that may overwhelm those without transportation or money (Rosenblatt, 1989).

This is exactly the situation that many low-income Rockbridge County residents find themselves in now. Regardless of these prenatal options, when it comes time for delivery, all women must drive nearly an hour out of town to give birth. Having to travel for any type of perinatal care is problematic, and women who must travel long distances to access such care (usually in unfamiliar settings) will have “diminished access and poorer perinatal outcomes” (Nesbitt, Rosenblatt, Connell & Hart, 1989). Women who have to travel a long time visit a maternity care provider are less likely to receive adequate prenatal care in a timely manner (McDonald & Coburn, 1988). Several studies have found a correlation between lack of access to care for pregnant rural women and a higher incidence of complicated deliveries, low birth weight, and infant mortality (Nesbitt, Connell, Hart, & Rosenblatt, 1996; Allen & Kamradt, 1991; Larimore & Davis, 1995). Difficulty finding transportation has its greatest impact on rural indigent women, who may lack the means or funds to travel significant distances for prenatal care (Foster, Guzick, & Pulliam, 1992).

This situation is particularly troubling, as studies have shown that in other rural communities similar to Lexington that lack permanent obstetrical services, prenatal outcomes were substantially worse than in comparable rural communities that had retained obstetrical services, and cost of caring for the damaged infants was much higher (Nesbitt, Connell, Hart, & Rosenblatt, 1996). In the case of Lexington specifically, the infant mortality rate, a primary indicator of the overall health of a community, has doubled in the past decade (Simpson, 2010).

According to Rural/Frontier Women's Access to Health Services, "All women in rural and frontier areas are affected by lack of primary and specialty care. In addition, the lack of specialty care has a particular impact on women of childbearing age and those having with long-term gynecological health issues (NRHA, 2007). In addition to limited access to medical care, rural women face a multi-faceted combination of factors that all contribute to disparities in prenatal health care. These barriers "stem from the nature of rural America. These can include everything from economic disadvantages, social and cultural differences, educational achievement gap, geographic isolation, the presence in rural regions of certain high-risk populations, and lack of recognition by state and national lawmakers (NRHA, 2010; Rosenblatt, 1989). With this constrained access to prenatal care, rural women often delay prenatal care or receive none at all (Nelson, 2009). In Rockbridge County in 2009, nearly 20% of prenatal care began *after* the first trimester, which is significantly higher than the statewide percentage of 15.4% in Virginia (Virginia Department of Health 2009). In addition, according to the 2009 Relative Health Importance in Rockbridge County, Rockbridge County performed poorly compared to its peer counties and the United States in the area of women accessing prenatal care in the first semester. Please refer to Appendix A for this comparison. Although more specific data is lacking, it would be helpful to investigate what percentage of these women are low-income, as poverty is often linked to women's inability to effectively access prenatal care.

Poverty and Prenatal Care

Problems of health care access in rural areas are often hard to separate from larger, overarching problems of poverty and relative deprivation. In regards to prenatal health care access specifically, low socioeconomic status is directly linked to less than optimal pregnancy outcomes, especially premature birth. All of the major determinants of birth outcomes, including

race, ethnicity, socioeconomic class, level of income, marital status, and level of education, are all interrelated. Out of all these factors, it is consistently low-income women and infants that are most likely to experience difficulties during pregnancy and birth. Poor women are found to be at increase risk of poor pregnancy outcomes because of a network of interconnecting factors:

Poor women may be at increased risk of poor pregnancy outcomes because of a complex, interactive mix of environmental, social, behavioral, medical, and health care correlates of poverty, including poor hygiene and nutrition, smoking and use of alcohol and drugs, physical and psychosocial stress, inadequate social support, violence, early and/or closely spaced pregnancies, high parity, and a higher disease burden due to less adequate diagnosis and treatment of some diseases, biological responses to stress, and a higher incidence of infections, including those resulting in sexually transmitted disease (Rooks, 1997).

The effect of these factors is further intensified by the “lack of accurate information and obstacles to effective utilization of health care” that many poor women experience, including racial, cultural, gender, and language differences that obstruct the “development of mutual trust and effective communication” between health care providers and pregnant women (Rooks, 1997). The reasons for this are many and complicated, and while it is difficult to isolate one single factor or combination of factors leading to the suboptimal outcomes common among poor, low-income women, it is possible to identify multiple issues mostly likely to influence low-income women’s birth outcomes, most of which are interrelated.

First, there is a strong correlation between low socioeconomic status and whether a birth is “planned, unwanted, or mistimed” (Kost & Forrest, 1995). The poorer a woman is, the more likely she is to experience an unintended pregnancy, and it has been suggested that women pregnant with an unplanned child “may need additional attention to help ensure their well-being during pregnancy and the birth of a healthy baby” (Kost & Forrest, 1995). This likely explains why low socioeconomic status is also correlated with increased risk of poor birth outcomes,

especially in regards to low birth weight. Such suboptimal pregnancy outcomes can oftentimes be traced to a mother's unhealthy habits during the pregnancy, such as lack of nutritious diet. In fact, studies in the United States have demonstrated a link between low maternal weight gain during pregnancy and poor pregnancy outcomes including low birthweight and perinatal mortality among women beginning the pregnancy underweight (Brown, Jacobson, Askue, 1981; Naeye, 1979). This was part of the rationale being the implementation of the Special Supplemental Food Program for Women, Infants and Children (WIC), which was designed to "improve pregnancy outcomes in high-risk populations for better maternal nutrition." Poor women enrolled in WIC are found to have lower rates of low birthweight and premature births compared to similar women not enrolled, and WIC's greatest successes have been found among women who were at the greatest nutritional risk pre-pregnancy. Factors such as maternal height, pre-pregnancy weight, and smoking history can be used to identify women who are at high nutritional risk and for whom nutritional counseling might be recommended (Gifford, Murata & McGlynn, 1996). Public health agencies and other non-profit organizations that provide prenatal care to medically indigent women emphasize nutrition counseling and make special efforts to enroll low-income pregnant women in the WIC program. Women enrolled in WIC receive nutrition education and counseling and a regular supply of vouchers that enable them to purchase certain kinds of particularly nutritious foods. Several studies have found large decreases in low birth weight associated with participation in WIC (Kotelchuck, Kogan, Alexander, & Jack, 1984; Institute of Medicine, 1985; Rooks, 1997). Nutritional screenings used to identify such high-risk cases are a key component of early prenatal care, and such statistics serve to further emphasize the importance of women's early entry into a prenatal care plan. Though no specific statistics exist, WIC is one of the more successful programs provided by the Health Department. It would

be helpful to produce more detailed statistics outlining who is utilizing such services and when. It would also be valuable to know if Health Department services are used at all by Hispanic women in the area and, if not, why that might be the case.

Besides nutritional challenges addressed by programs like WIC, there are other factors related to low socioeconomic status that may adversely affect the health outcomes of a low-income pregnant woman. For example, the incidence of physical abuse during pregnancy is higher for women who are young, single, of lower socioeconomic status, of higher parity (i.e., mothers with many other children), and for women who did not want to be pregnant. Women carrying unwanted pregnancies were four times more likely to be physically hurt by their sexual partner, as compared with women with intended pregnancies—12 percent versus 3 percent (Gazmararian et al., 1995). Additionally, studies have shown that abused women tended to start prenatal care later in the pregnancy, compared with women who were not abused, and their babies were 1.5 times as likely to be low birth weight (Parker, McFarlane, & Soeken, 1994).

Public programs, such as programs offered by the Health Department in Rockbridge County, focus on multiple aspects of patient education. These programs ask women about “habits and circumstances that can cause pregnancy complications (e.g., smoking, alcohol and drug abuse, domestic violence, other sources of stress) and provide access to special services (such as programs to help people quit smoking) and social work assistance as ways to help women deal with these problems” (Rooks, 1997). While the obstetrical medical care available through private physicians is adequate for most women with higher education and income, women with fewer resources need the additional services and multidisciplinary approach provided through programs such as these that focus on everything from “health education, nutritional counseling and supplementation, social work, outreach, and other nonmedical

ancillary services (Buescher & Ward, 1992). In fact, studies conducted in Florida, Oregon, and South Carolina have also found better pregnancy outcomes for low-income women who receive the comprehensive care provided by the health department, as compared with care provided by private physicians (Richter, 1996; Curry, 1996; Miller, 1996). Rockbridge County's Health Department offers a program "BabyCare" that offers this type of far-reaching health care. BabyCare provides pregnant women with the support and prenatal services they need through an involved case management program. This program aims to increase the number of healthy pregnancy outcomes by ensuring that women access all the prenatal care they need before giving birth.

This holistic approach to pregnancy care has been shown to be particularly effective among low-income women, many of whom lack access to resources or support outside of the health care setting. Most long-term students of the problem of poor pregnancy outcomes among low-income women have all shown that brief prenatal visits that focus primarily on the physical aspects of pregnancy are not adequate to meet the needs of most low-income women (Rooks, 1997). Hence, increasing poor women's access to the type of far-reaching, all-inclusive services provided by community-based health care clinics may be essential to improving their pregnancy outcomes.

Considering the fact that the number of pregnant women with socioeconomic problems is large and may expand as a proportion of all pregnancies in the U.S., it is becoming more and more important that community leaders and policymakers begin to consider this issue. However, it is important to recognize that *access* to prenatal care may not be the extent of the prenatal care problem. We know that too many low-income women do not seek well-timed or satisfactory prenatal care, even in cases where their health plan provides for such services through Medicaid.

The reality is, although the vast majority of women recognize the value of prenatal care, specific personal situations, ranging from fatigue to lack of support from their babies' fathers, may prevent women from seeking prenatal care (Gazmararian, 1999). Many women report that they would be more likely to seek access prenatal care "if they had a better understanding of how prenatal care would affect their own and their baby's health" (Hollander, 2000). In light of the fact that some women may not seek prenatal care because of lack of support from their babies' fathers, it is also important to educate prospective and current fathers about maternal health, the importance of prenatal, and their considerable responsibilities as a parental figure even before the baby is born. This type of education is limited in Rockbridge County, and to-date, most prenatal programs focus on solely pregnant women, with the exception of the childbirth classes for couples offered at the hospital. In addition, given that most women appear to have positive attitudes towards prenatal care yet still opt not to fully utilize all the benefits at their disposal "managed health care plans," such as Medicaid providers, should partner with agencies that work with women to educate them about the prenatal benefits available to them and to encourage them to take advantage of such benefits (Hollander, 2000).

Teen Pregnancy and Adolescent Access to Prenatal Care

Despite the fact that sexually active adolescents are using contraception more regularly and more successfully, until recently, the rate of sexual activity among all teenagers in the United States has been increasing. This has resulted in an increase in the number of teenage pregnancies (Guttmacher Institute, 1994). As many as 43 percent of American women are likely to become pregnant in their teens, and this risk of teenage pregnancy is known to be even higher among disadvantaged groups, particularly low-income women (Guttmacher Institute, 2011).

The majority (more than 85%) of pregnancies among teen-age women are unintended, but about one-half of the 1 million teens who become pregnant each year give birth (Brown & Eisenberg, 1995; National Center for Health Statistics, 1993). As explained above, an unintended pregnancy is positively correlated with suboptimal birth outcomes, a troubling statistic that is further exacerbated by the additional complicating risk factors associated with adolescent pregnancy. There is considerable evidence of the poor health outcomes associated with early childbearing, both for the young mothers and their children (Elster, 1984; Fraser, Brockert, & War, 1995; Geronimus, 1987; McAnarney & Hendee, 1989; Ventura, Martin, Matthews, & Clarke, 1996). Such difficulties only increase among adolescents in rural areas, who have greater difficulty accessing prenatal care in an anonymous manner and are less likely to have access to sufficient resources once the baby is born.

As a result, adolescent pregnant women who live in rural areas are even less likely to receive adequate prenatal care in a timely manner (Larson, Hart, & Rosenblatt, 1991).

Considering Rockbridge County's higher than average adolescent pregnancy rate, this is an issue that needs to be of more concern (CHSI, 2009). According to the most recent statistics available, 64.9 of every 1,000 pregnancies in Rockbridge County were teen pregnancies, compared to 39.9 in the Central Shenandoah health district (encompassing Augusta, Bath, Highland, Rockbridge and Rockingham Counties), and 52.3 in Virginia. Please refer to Appendix B for teen pregnancy data in Rockbridge County and the surrounding areas. There are a number of specific burdens facing adolescents in rural areas that are sexually active and attempting to avoid pregnancy or that get pregnant and wish to receive prenatal care:

Rural adolescents must learn to cope with constraints created by their geographic locations. Minimal public transportation, heightened confidentiality concerns, and long

distances to clinics are just a few of the barriers that persist in rural areas. For rural adolescent, geographic location alone complicates the decision-making process. Prenatal care is likely more easily accessible in an urban environment, may often be difficult for rural youth to obtain due to the distance to a clinic or the lack of anonymity at the local level (Mindick & Shapiro, 1989).

However, despite these constraints, in the state of Virginia all minors are allowed to consent to prenatal care, without notifying a parent. This means that minors are entitled to confidential prenatal care, including regular medical visits and routine services for labor and delivery (Guttmacher Institute, 2011), which may increase the likelihood of healthy birth outcomes for adolescents that do find themselves pregnant in Rockbridge County. Unfortunately, the picture is further complicated by Rockbridge County's rural setting, which may simultaneously hinder adolescents' access to anonymous prenatal care. Though such programs are currently lacking, it will be important to expand early sexual education for both girls and boys, including information about free or reduced cost resources available in the area, such as birth control available at the Health Department. Both boys and girls might be more responsible about sexual activity if they were more knowledgeable about the negative health outcomes that could result from early pregnancy. Such educational programs should be based in middle schools or high schools, and individual health care providers, such as the Health Department, should expand their marketing efforts so that teenagers know they can receive confidential and affordable care and access to birth control. It would also be valuable to include other activities or discussions that demonstrate to students the importance of avoiding early pregnancy to their futures, rather than just educating them about the use of contraceptives alone. This could include everything from afterschool programs that provide students with academic tutoring and support or another activities program where students are able to engage in fun, meaningful activities that offer an alternative to becoming sexually active too early.

Prenatal Care, Medicaid, and the Impact of Health Care Reform

The issues facing low-income pregnant women are also tied into nationwide issues affecting indigent citizens' access to health care, specifically our current Medicaid system and the 2010 health care reform bill. On a national level, pre-health care reform, the number of people who lacked any type of health insurance included about 14 million women of reproductive age, including women ages 15-44 (Sonfield, 2010). The Patient Protection and Affordable Care Act (health care reform) passed in April 2010 was estimated by the Congressional Budget Office to extend healthcare coverage to 93% of those women, 58% through Medicaid expansions and an additional 35% through federal premium credits (Kaiser Family Foundation, 2010).

This change was especially important for childless women who might be considering starting a family, because, prior to health care reform, childless adults as a demographic were almost completely excluded by most state health care programs. Of course, this change has promising implications for poor women's access to prenatal health care, as it "will allow Medicaid to help millions of women and couples time their first birth and will allow for a real conversation about preconception care" (CBO, 2010).

For individuals who will be part of the Medicaid increase, the Medicaid standards are not changing considerably. All current Medicaid recipients are already guaranteed full coverage of "family planning services and supplies and of prenatal care, labor and delivery, and 60 days of postpartum care." These provisions will continue under the new law (Ranji, Salganicoff, Stewart, Cox, & Doamekpor 2009, 2010). In addition, all new health care plans, starting in September 2010, will be required to cover—without any out-of-pocket costs—a wide range of prenatal services. They include folic acid supplements to prevent certain birth defects, STI testing for

pregnant women, smoking cessation counseling (also newly required under Medicaid) and a series of other screenings and vaccinations that are important parts of prenatal care, together with all of the preventive care needed for infants (Sonfield, 2010). It seems that low-income women, specifically, may benefit directly from such improvements in maternal, prenatal, and child health care as a result of the new 2010 law:

Health care reform has the potential to improve access to and use of a wide range of health care services generally, and the law includes a sizeable list of provisions focused specifically on pregnancy-related care. Better access to and use of care, in turn has the potential to address the distressing disparities in maternal and child health found among certain segments of the U.S. population (Sonfield, 2010)

This new focus on pregnancy-related care and increased access to care are likely to directly benefit low-income women in rural areas, who historically are the population least likely to benefit from these essential services. Of course, such benefits can occur only if healthcare providers are available, which is one of the challenges facing Rockbridge County in light of the recent closing of the maternity ward and loss of its two family practitioners who provided obstetrical services.

The law also prohibits many of the abusive practices that insurance companies have long used to avoid sufficiently covering pregnant women and infants. Beginning in 2014, health care plans will no longer be “allowed to exclude or limit coverage for care related to preexisting conditions, such as a previous cesarean delivery, or deny health coverage entirely to people because of such conditions” (Sonfield, 2010). In addition, all preventative care measures, such as cervical cancer screenings will now be guaranteed under the new law (Patient Protection and Affordable Care Act, 2010). These expansions will help increase poor and near-poor women’s access to general health care, as well as prenatal care once women become pregnant.

Perhaps most importantly for rural pregnant women, in recognition of the major

shortages of medical providers, particularly in rural areas, Congress has pledged \$11 billion over five years to significantly increase the number of community health centers throughout the country. This will help to ensure that those with newfound access to health care plans, as a result of the new law, will actually have a nearby place to seek care. The law also mandates that insurance providers contract with these community health centers and other similar local “safety-net providers.” This is an important provision of the law, because traditionally, such contracts have been hard for smaller clinics to arrange, as most of them generally have little power with insurers (Sonfield, 2010).

One provision of the law that is additionally beneficial for low-income pregnant women is the requirement that state Medicaid programs must reimburse for all services provided by “freestanding birthing centers.” Similarly, nurse-midwives, under the new law, are required to be reimbursed at the same rate as physicians. Both these provisions should make it more financially viable for women to choose these options for childbirth and for these types of providers to expand their practices. Such provisions should help to counter the ever-decreasing number of obstetrical specialists in high-need areas and increase at-risk women’s access to the more holistic services provided by community clinics such as birthing centers, which have been shown to greatly improve low-income women’s pregnancy outcomes. Again, however, these expanded financial options will not be enough if women are not able to access such medical services, for example due to transportation constraints or limited numbers of medical professionals as seen currently in Rockbridge County. In response to these barriers, Suzanne Sheridan at the Free Clinic and other area health care professionals are working on potentially expanding services to pregnant women, as well as other low-income community members through the creation of a community healthcare clinic. This could be possible through Congress’ increased funding for

community health centers, particularly in rural areas like Lexington, through the new healthcare law.

Under the new law, the government has also agreed to invest \$1.5 billion over five years in “evidence-based programs that send nurses or other experts to families’ homes to provide education and guidance about pregnancy, with a focus on parents deemed high risk because of their income, age, community or history of problems such as child neglect or substance abuse” (Sonfield, 2010). The ultimate goal is extend nationwide access to home visiting services for all at-risk families that desire them. In addition, the law also provides for \$25 million annually for 10 years to cover grants that will allow states to support pregnant and parenting adolescent and women. States can use this grant money “provide or establish connections to a wide range of services—from housing to baby clothes to prenatal care—to college and high school students either on campus or in the community” (Sonfield, 2010). They can also use the grant money to target issues known to be related to poor pregnancy outcomes and so, for example, may choose to grant the money toward assistant pregnant women who are also facing domestic violence. The law also has provided funding to support women suffering from postpartum depression through education, treatment, and support groups, as well as to provide support to their families (Sonfield, 2010). Currently, there are no plans to offer these specific types of programs in Lexington, but it may be valuable for area health care professionals to examine these types of services in order to best address the wide variety of issues facing women of childbearing age in Rockbridge County.

The Limitations of This Study

Although this research project has attempted to address some of the many complex challenges facing low-income women attempting to access prenatal care in areas like Rockbridge

County, such a study has clear limitations. Attempting to assess the quality of rural health care in general creates a unique challenge, as it is difficult to access any reliable statistics for such small areas like Rockbridge County. In addition, small populations like our county are statistically unstable, so it may sometimes be problematic to rely too heavily on statistical evidence. There is also incredible heterogeneity across rural areas, so it can be challenging to correctly identify overarching trends and challenges facing areas like Rockbridge County.

In addition, as I was completing this project, I found that the data concerning maternal and child health in Rockbridge County in particular, as well as detailed health care data in general was severely lacking. National and state surveys available looking at data from Virginia often completely excluded small, rural regions such as Rockbridge County, and local area private health care providers may have little incentive to collect such data. In addition, statistics for specific demographics, particularly Hispanic women, are completely absent. Such data is will be invaluable as healthcare providers work to improve all women's access to prenatal healthcare in the future.

Despite these limitations, I have attempted to offer a broad overview of the incredible barriers facing women of childbearing age in our area, particularly low-income women, and in other similar rural areas. The following section offers some potential solutions for the considerable challenges associated with maternal and prenatal care in Rockbridge County.

Recommendations for Rockbridge County

I have tried to suggest solutions that, though not inexpensive, would likely lead to a decrease in health care costs over time and hopefully greatly benefit women of childbearing age of all income levels in our area. Women will always need access to quality prenatal and delivery care, as women will always continue to get pregnant, so this is not an issue that can be

overlooked. Though women in the area with the means to do so can relatively easily travel to Charlottesville or Roanoke to receive all the care they need, my solutions focus specifically on low-income women, who are least likely to be able to travel to access prenatal services and may even prefer a local, community-based solution.

Rethinking the Physician-Based Model

Although the obstetrical specialist shortage in our area and areas like ours has been well documented, I suggest looking beyond the physician-only model for prenatal care. Nurse-midwives are just as equipped to assist women throughout pregnancy and delivery, provided the woman is not in a high-risk situation that would require a surgical intervention. In fact, midwifery care is the normative approach for low-risk pregnancies in much of the world.

Countries such as the Netherlands, U.K., Sweden, and Japan, which have some of the lowest infant mortality rates in the world (MCHB, 2002), use midwives for all low-risk maternity care. Physicians are called upon when medical or surgical intervention is required. A study linking birth and infant death data sets for all births in 1991 compared birth outcomes and survival for infants delivered by certified nurse-midwives and physicians (MacDorman & Singh, 1998).

When social and medical factors were controlled, the adjusted odds of infant and neonatal mortality and the incidence of low birthweight were lower for nurse-midwife-attended births.

In addition, nurse-midwives, on average, tend to spend more time during prenatal visits on “patient counseling and education.” In one study, certified nurse-midwives were found, on average, to spend 49.3 minutes with a patient during her first prenatal visit and 29.3 minutes during her return visits. This was compared with 29.8 and 14.6 minutes, respectively, for physicians’ visits with patients (Yankou, Petersen, Oakley, & Mayes, 1993). This extra time and attention may be extra important for low-income, rural women, many of whom, as discussed

above, are more likely to struggle with issues of isolation, domestic violence, and limited familial and peer support. Overall, the nurse-midwives' approach tends to emphasize a more holistic, participatory approach to health care.

I think, particularly in Rockbridge County, putting less emphasis on finding an obstetrician willing to provide prenatal care and putting more resources in expanding women's access to midwife services could be beneficial, especially for those women who are most disadvantaged. Historically, nurse-midwives have focused on the many, complex problems of women who are both pregnant and poor, because poverty itself is the strongest correlate of problems during pregnancy. Midwifery care, which is personal, respectful, supportive, and reaches beyond the medical aspects of a woman's condition and situation, has proven to be especially effective in meeting the needs of women who are dealing with many problems, whose lives are stressful, sometimes chaotic, some of whom have habits and lifestyles that can compromise their pregnancies. Low-income pregnant women certainly fall into this category, and I believe they would greatly benefit from increased access to the holistic type of care that midwives offer. The new healthcare reform act set new, expanded requirements for compensating midwives at the same level as doctors providing obstetrical care. This provision may help if Rockbridge County healthcare providers decide to pursue this midwife-based model.

Return to Family Practitioners

Another possible solution that might be feasible in Rockbridge County would be to encourage family practitioners to offer prenatal care and childbirth as part of their general practices. Family practitioners could possibly work together with midwives to ensure that they are adequately supported and not on-call for unreasonable periods of time. This type of support is

necessary, considering the fact that family practitioners in Lexington who formerly did offer prenatal and childbirth care opted to end such practices due to excessive work demands.

A Hospital-Alternative: The Birthing Center

Ideally, women seeking prenatal health care in Lexington would be able to access all their prenatal, labor and delivery, and postpartum health care needs at a local, community-based birthing center. Such a birthing center would operate autonomously in the community, with its own policies, program, and prices for its clients. In contrast with hospitals, birthing centers are designed to be a “home away from home” for women (Lubic & Ernst, 1978).

A birthing center would offer women a complete range of maternal services, including contraception, counseling, nutritional education, and standard prenatal services, such as ultrasounds. It would also be helpful to provide services particularly targeted at Rockbridge County teens, such as education about contraception and confidential prenatal care in the event of a pregnancy. I think community-based organizations such as a birthing center can be particularly beneficial for areas like ours, because they are in a better position to address much more than clinical health care issues alone. I imagine a birthing center employing the more holistic-approach favored by midwives, but on a community level. In fact, such a birthing center is likely to be staffed primarily by nurses and nurse-midwives, although physicians like Dr. Troise could provide services for at-risk women a few days a week or the nurses could refer their clients to his private practice.

The benefit of a birthing center is it provides a one-stop shop for the average woman’s prenatal and birthing needs. Establishing a local birthing center would eliminate the transportation constraints facing low-income women in our community and would allow them to access care in an environment that is comfortable and familiar. Unfortunately, establishing a

community health center is a costly enterprise. If the Free Clinic were to receive appropriate funding, it could be expanded into a community-based health center, although the Free Clinic would have to do away with its current policy of not providing family planning, pregnancy, and maternity care. Currently, the Free Clinic is about to embark on a long-term planning project that will specifically focus on the county's need for a community health center. Completing this study may make the Free Clinic and other participating health care leaders eligible for grant money to at least partially fund such a center if it is deemed necessary.

I advocate consideration of alternatives to physician and hospital-based prenatal and birthing care and recommend an increased focus on attracting at least one full-time midwife to our area, as well as working towards establishing an autonomous birthing center in our community. Although I recognize the enormous costs associated with this venture, the new health care reform law has pledged millions of dollars to increasing access to more community-based health ventures such as these, and Lexington may be eligible to apply for some of the state-based grants described above. In addition, while it is difficult to overlook the financial costs of such recommendations, it is also important to conceptualize increasing access to quality prenatal care, not only as costs, but also as an *investment* in improved pregnancy outcomes and ensuring that children are able to live healthier lives from the outset.

Confronting Non-health Sector Factors in Relation to Prenatal Care

Of course, successful birth outcomes for both mother and child are not guaranteed based on expanded access to prenatal care alone. In order to provide the most comprehensive prenatal care, local health providers and public education groups will need to do more to address related education and cultural issues that can greatly impact the health of young women and later their fetuses when they do become pregnant. Currently, there are support groups available for women

preparing for childbirth at Stonewall Jackson Hospital and Augusta Health, but I find it would be valuable to expand such efforts to target women and young women before they get pregnant in the first place. At the recent seminar held to discuss women's health issues in Rockbridge County, Dr. Troise and the other including doctors, nurses, and midwives present acknowledged that access to prenatal care, at least pre-delivery, is not as lacking as many thought after the closing of the birthing center. The real issue, however, actually begins before women even become pregnant. Prior to pregnancy, many women in the area, particularly low-income women, are engaging in less-than-healthy behaviors, including smoking, eating unhealthy diets, and not exercising a sufficient amount to maintain a healthy lifestyle. These choices, although separately they may seem insignificant, become crucial to a mother and her future child once she becomes pregnant. Although programs such as WIC are currently offered by the Health Department, I would like to see an expanded effort on the part of particularly the Health Department to *prepare* future families for pregnancy. We need education about important lifestyle choices, the importance of vitamins like folic acid, and the importance of birth control in allowing families with limited resources to make wise decisions about when and how often to have children. In an ideal world, such support programs would not just target young women alone, but would instead involve their partners, so that each of them has an equal stake in their families' health. I think peer-based programs such as Augusta Health's Centering Pregnancy are particularly valuable models, because women and men can learn from and share with other couples in similar situations. This type of group setting may in fact encourage couples to continue to attend the program, as they develop relationships with other participants who are facing similar issues and challenges.

Addressing the Teen Pregnancy Issue

Finally, in light of the fact that Rockbridge County is not immune to the issue of teen pregnancy, I think an improved public education effort, beginning in middle school, could help to educate teenagers about making wise decisions about sex, birth control, healthy lifestyle choices, and planning for their futures. Because such conversations can be awkward (and thus more likely to be ignored) coming from much older teachers or health providers, I think it would be especially helpful to create a program based outside of the school setting where teenagers could have access to this type of information, as well as learn about community resources that can help them, such as the Health Department. For example, one possible solution would be to have college-aged mentors work with Health Department professionals to deliver informal presentations at after-school programs in the area such as NEXT or Girl Talk, where students are provided information in a casual setting by someone they can relate to. The college-aged volunteers would have to be greatly guided by actual health care professionals to ensure that the information they relay is correct, but I think a younger mentor could be more successful in encouraging young teenagers to think more seriously about their sexual health and that of potential partners.

Certainly, the prenatal care crisis facing our community is not new and is certainly not limited to Rockbridge County alone. Assessing nationwide trends and examining other communities' responses to our local issues is a valuable way of finding the best solutions for our particular situation.

Addressing the Lack of Data

Moving forward, there is still considerable work to be done. One of the largest limitations of this study in general has been the absence of Rockbridge County-specific data regarding prenatal care, particularly in regards to low-income women. It would be valuable for students,

with the help of local professionals interested in collecting this data, to gather data regarding the specific percentages of women who receive inadequate prenatal care and why or why not. Such data will be important in order for any of the recommendations outlined above to be implemented.

Short-term Possibilities in Rockbridge County

There are also short-term fixes for our county's prenatal healthcare issues that should not be overlooked. At the recent women's health seminar, all of the health professionals, particularly an emergency room nurse and local EMT, agreed that emergency room officials, in light of the recent closing of the maternity ward, need to be better prepared to deal with emergency childbirths at Stonewall Jackson Hospital. Considering that transportation is still an issue for women about to deliver, this could be a relatively easy, albeit temporary help to assuage the fears of both women in the area and emergency room caregivers.

Though it appears unlikely that the maternity ward will ever be reopened, Rockbridge area women are not left completely without prenatal resources. Though improved access to transportation is still necessary, there are many high-quality area resources provided by Stonewall Jackson Hospital, Augusta Health, and the Health Department that women could potentially access in preparation for childbirth. Greater education about the proper timing for such preparation is necessary, as well as an improved focus on non-health sector factors. Hopefully with the acquisition of more data and the community health center planning survey that is about to take place, more detailed knowledge of the specific challenges facing low-income women in our community can be uncovered. Until then, it will be up to public health and health care professionals in our area to do their best to educate young women and women in our area

about their women's health care options, in the hopes that more women will utilize the care they need to guarantee healthy outcomes for themselves and their children.

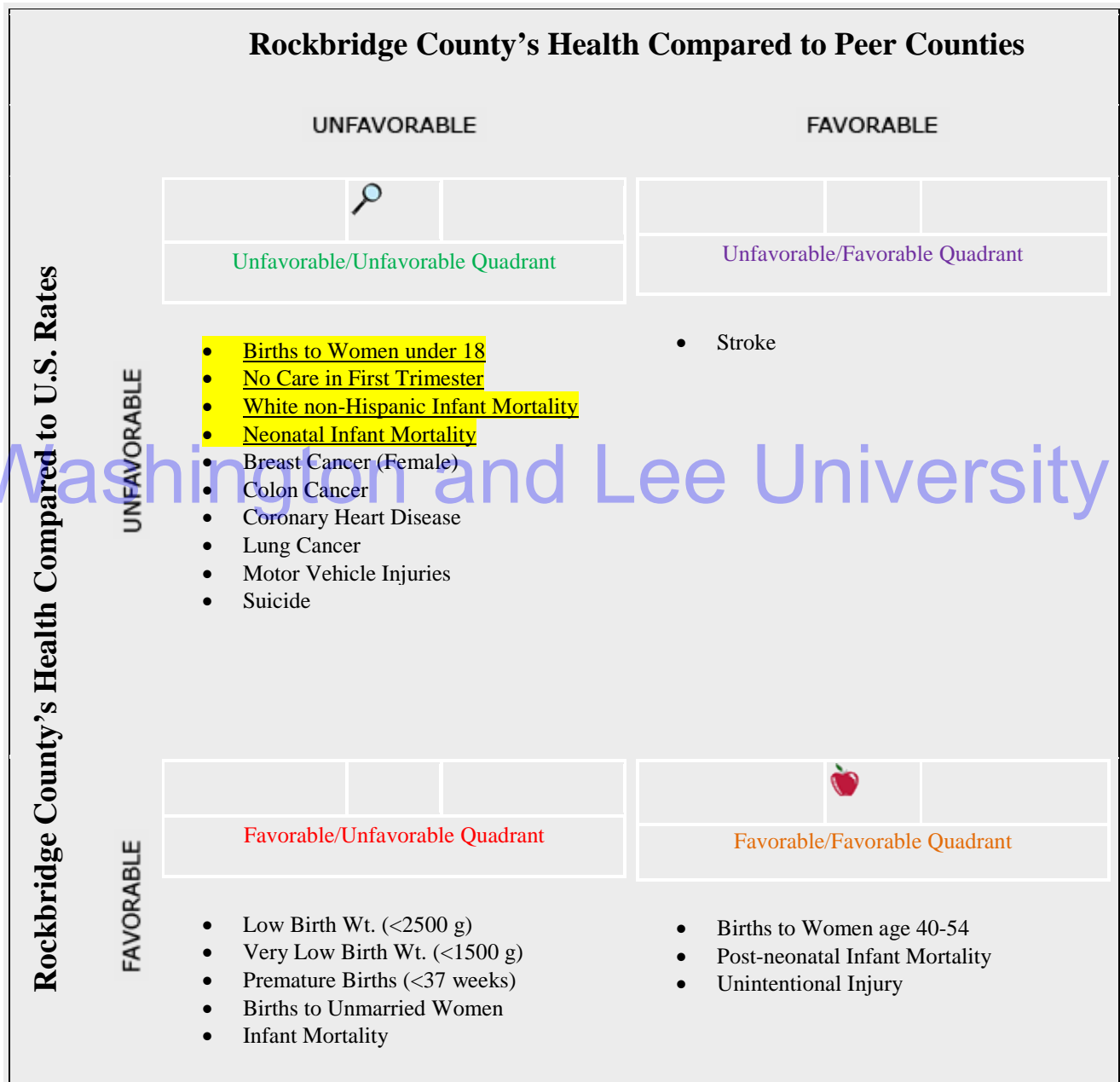
Conclusion

More than anything, this community-based research project has revealed just how much work remains to be done. Though Rockbridge County is not completely lacking in prenatal care options for women, informing women of all of their options and ensuring that women have access to such services remains a challenge. I hope that this project can serve as a starting point for future Women's and Gender Studies and Poverty and Human Capability students who desire to impact our community in ways that improve the lives of actual people. Perhaps in conjunction with other area professionals interested in these issues, students can help to gather and interpret the data that will be necessary for this project to move forward. In addition, I hope that my work, in some small way, may be of use to all of the healthcare professionals already working to address the prenatal health issues facing our community. There is no doubt that tackling these issues is crucial, and not just for women alone. Finding practical, effective solutions to the prenatal challenges facing our community will do much more than improving the health of individual mothers and infants; ensuring that prenatal care is available to all women of childbearing age is essential to building a healthy foundation for our entire community-- men, women, and children—for generations to come.

APPENDIX A

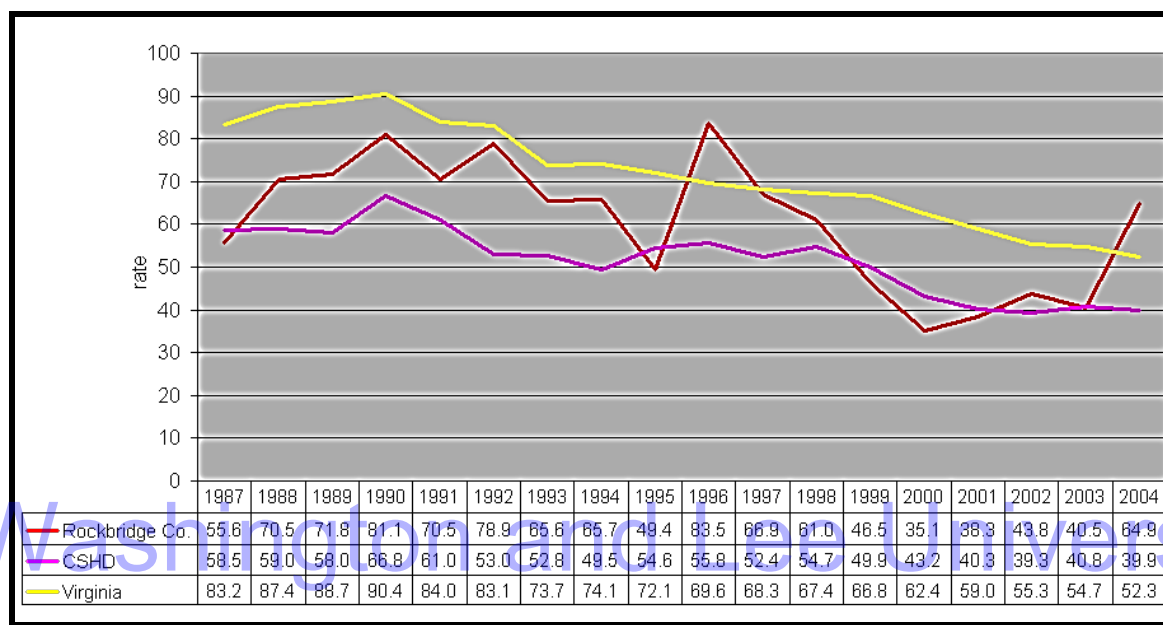
2009 Relative Health Importance in Rockbridge County, VA

Rockbridge County's indicators in the Unfavorable/Unfavorable Quadrant (🔍) are higher than the U.S. and its peers and may warrant more attention. Conversely, indicators in the Favorable/Favorable Quadrant (🍏) of the table compare favorably to both peers and the U.S. The other boxes represent intermediate levels of health where Rockbridge County's rate is higher than either its peers or the U.S., but not both.



Source: Community Health Status Indicators 2009, U.S. Department of Health and Human Services

APPENDIX B
Pregnancies per 1,000 females ages 15-19 in Rockbridge County, Central Shenandoah
Health District, and Virginia from 1987-2004



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