

HEALTH STATUS OF CAROLINE COUNTY

Improving Health in Caroline County

PREPARED FOR
CAROLINE COUNTY BOARD OF SUPERVISORS

July, 2006

CAROLINE COUNTY
HEALTH ADVISORY COMMISSION



Health Status of Caroline County

Improving Health in Caroline County

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FOREWARD

The Caroline County Board of Supervisors expressed its interest in developing strategies that will lead to the improved overall health of Caroline County by commissioning the Caroline County Health Advisory Commission in September 2004 (see Appendix 1). The purpose of this report is to present the findings of the Advisory Commission, educate Caroline County citizens on the health status of the community, and solicit input on strategies to address the priority health issues identified in this report.

Following the appointment of Commission members, the Commission met monthly to address the charge by the Board of Supervisors using the Institute of Medicine (IOM) community health planning process. (Reference: “Improving Health in the Community”, Institute of Medicine, National Academy Press, Washington, DC 1997) (See Appendix 2) The IOM model guided the Commission to gain a broader understanding of health issues impacting Caroline County.

The Commission studied a volume of socio-economic, health outcome and health status data, and numerous health related reports to gain a greater understanding on the determinants of health, focusing on Caroline County. The Commission studied data at the national, state, planning district, county, and zip code level. After studying the data, the Commission identified four health related priorities they recommend be addressed in Caroline County.

CAROLINE COUNTY HEALTH ADVISORY COMMISSION EXECUTIVE SUMMARY

HEALTH PROFILE

The Commission found that almost half of all deaths in Caroline can be attributed to diet/inactivity, tobacco use, alcohol use, and other behavioral risk factors with the leading causes of death being diseases of the heart (i.e. heart attack, congestive heart failure), malignant neoplasms (cancer), and cerebrovascular disease (i.e. stroke.)

The Virginia Hospital Information system shows that Caroline County residents suffer from higher hospitalization rates for asthma, chronic obstructive pulmonary disease, long-term complications of diabetes, congestive heart failure and psychoses as compared to the state average, adjusting for risk.

Compounding Caroline's health issues, the Virginia Department of Health has reported that Caroline County has been designated, since 03/31/2006, as a geographic primary care Health Professional Shortage Area (HPSA). There are shortages of primary medical care, dental, and mental health providers (<http://hpsafind.hrsa.gov/>). This designation provides enhanced Medicare reimbursements for physicians in the county.

The health profile of Caroline County shows higher rates for diseases of the heart, cancer, cerebralvascular disease, chronic obstructive pulmonary disease, non-marital births, teen pregnancy, and unintentional injuries compared to other localities in Planning District 16 and the State. The Commission identified (1) obesity, (2) smoking and tobacco use, (3) non-marital (father absent) births, and (4) lack of health insurance and access to medical care as the top four health related priorities that need to be addressed in Caroline County.

OBESITY—CONSIDERED THE NO. 1 PRIORITY

Obesity is considered the number 1 health priority in Caroline as it is a major contributor to premature deaths and disability, starts early in life, is the underlying cause of many chronic illnesses, and is very common in Caroline County. Statewide data

shows that 24 percent of adults are obese and 35 percent are overweight with a total of 59% having weight issues.

The State Board of Health noted that “obesity is a leading risk factor for several chronic diseases, including cardiovascular disease, diabetes, hypertension, and arthritis.” The American Academy of Pediatrics notes that “Obesity is associated with significant health problems in the pediatric age group and is an important early risk factor for much of adult morbidity and mortality.” Medical problems are common in obese children and adolescents and can affect the heart, contribute to diabetes, menstrual irregularity, depression, and low self-esteem. Other important complications and associations include asthma and obstructive sleep apnea syndrome.

PROPOSED SOLUTIONS

The Advisory Commission recommends a set of school and community based strategies to address obesity in Caroline County. Solutions are in rank order, according to: (1) being the most doable and (2) having the greatest impact on the community issue. These include:

School Based Strategies

As Caroline County Schools develop their School Wellness policies, obesity and healthy living issues should be specifically addressed. All schools participating in the National School Lunch Program were to develop a School Wellness Policy/Strategy by the beginning of the 2006 school year. The law mandates that this policy must address nutrition education, and physical activity. Other school-based activities designed to promote student wellness include guidelines for all foods available during the school day, and assurance that guidelines for the reimbursable school meals meet federal and state requirements. The policy must include a plan for measuring implementation. Implementing a coordinated school health program will impact obesity the greatest of any effort identified.

Community Based Strategies

Multiple community based strategies are recommended by the Advisory Commission, including:

1. Having local government set the example of employee wellness programs and encourage other employers to use Rappahannock Electric and Union Bank and Trust as models.
2. Making pedometers readily available for individuals and groups at no charge.

3. Encouraging businesses to allow and encourage physical activity breaks during the day.
4. Encouraging businesses to allow and encourage physical activity breaks during the day.
5. Increasing children's participation in structured outdoor programs by 10 percent per year, i.e. Parks and Recreation programs, Little League, etc.
6. Creating more walking trails in the county and including walking trails in every subdivision that is approved.
7. Encouraging all restaurants to offer and label healthy foods on menus.

SMOKING AND TOBACCO USE—CONSIDERED THE NO.2 Priority

Smoking and tobacco use contributes to premature death and disability and is preventable if prevention strategies are implemented early. It is associated with youth-related concerns such as substance abuse, teen pregnancy, and criminal activity; and is very common in Caroline County.

According to the State Board of Health, "smoking and other tobacco use were the leading actual cause of death in the United States during 2000, being responsible for approximately 17 percent of all deaths." Overall, about one-third of high-school-aged adolescents in the United States smoke or use smokeless tobacco. According to the Centers for Disease Control and Prevention (CDC), 15.6 percent of Americans smoke everyday while 15.8 percent of Virginians smoke everyday. Smoking damages nearly every organ in the human body, is linked to at least 10 different cancers, accounts for some 30 percent of all cancer deaths, and costs billions of dollars each year in health care cost. Why then does one in four Americans still light up?

In the Virginia Adolescent Resiliency Assessment survey (VARA) of Caroline High School students that was conducted in spring 2004, the teens indicated that tobacco is the second most commonly used substance by Caroline's teens. About 32% of the teens reported having smoked a cigarette at least once in the past month and 11% used on a daily bases. Of those who smoke, 12% reported having their first cigarette between the ages of 8 and 10; 29% said they had their first cigarette between the ages of 11 and 14.

Few realize the potency of nicotine, and even less consider nicotine to be an addiction, but most smokers will confess that nicotine has a firm grasp on their life. With the ability to affect the brain in a matter of seconds, nicotine is a very powerful addiction. In fact, nicotine addiction is more powerful than an addiction to cocaine or even heroin.

More than 70 percent of the 50 million smokers in the United States today have made at least one prior quit attempt, and approximately 46 percent try to quit each year.

Smoking can also aggravate known health problems like diabetes and can lead to an increase in risk of stroke, heart disease, cancer; and eventually death, miscarriage, or stillbirth. Smokers with diabetes are three times as likely to die of cardiovascular disease as are other people with diabetes and more likely to get nerve damage and kidney disease. Smokers get colds and respiratory infections easier. Smoking increases the risk for limited joint mobility, increases blood pressure, and can cause impotence.

The Centers for Disease Control and Prevention estimates that cigarette smoking causes more than 440,000 deaths per year and called smoking “the single most preventable cause of death and disease in the United States” and it has negative impacts on people at all stages of life.

PROPOSED SOLUTIONS

The Advisory Commission recommends a combination of school-based educational, community policy and tobacco dependency treatment strategies to address tobacco consumption in Caroline County. Solutions are in rank order, according to: (1) being the most doable and (2) having the greatest impact on the community issue.

Specific recommendations are:

School Based Strategies

1. Distributing information to parents and other adults about how parental smoking can set a negative example for children, why smokers should quit (benefits of quitting, risks of continuing to smoke, etc.), and the dangers of secondhand smoke.
2. Integrating into all grades 1-12 smoking and tobacco use information specifically targeting health education and linking the information to the Standards of Learning.
3. Applying for Virginia Tobacco Settlement Funds to support the work of the Commission.
4. Including smoking and tobacco issues in Caroline County Schools’ School Wellness.

Community Based Strategies

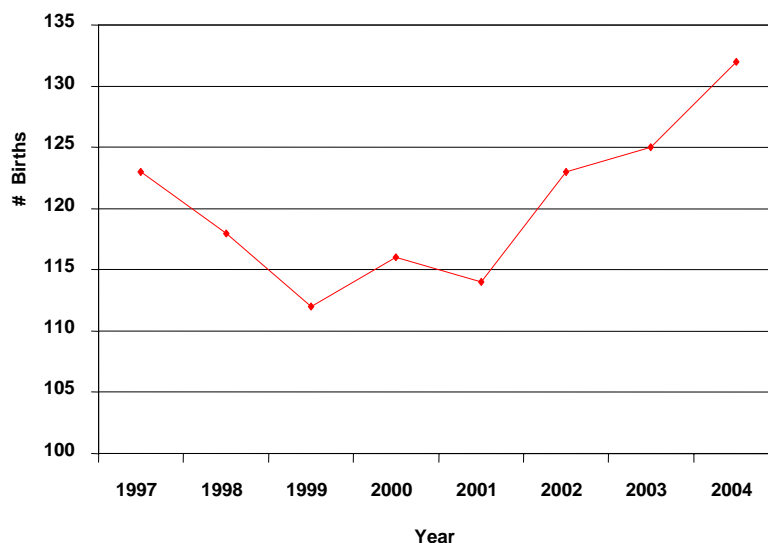
In regards to community policy, the Commission recommends the development the following:

1. Encouraging all businesses and restaurants to be smoke free while conducting a community wide media campaign to reduce the use of tobacco products.
2. Identifying early all youth who smoke or use tobacco products to treat tobacco dependency, and offer an opportunity to participate in cessation programs.
3. Providing adults education regarding the connection between smoking and their health and offer an opportunity to participate in cessation programs.

NON-MARITAL (FATHER ABSENT) BIRTHS—CONSIDERED THE NO. 3 PRIRORITY

Non-marital (father absent) births are considered the number 3 health priority as this may be the single most significant demographic trend contributing to the decay in the basic social unit that is to pass on family values and cultural practices. Health status findings from the Virginia Center for Health Statistics include a very high non-marital or father absent birth rate of 41.5 percent in Caroline County. That is, 41.5 percent of all live births are to women who are single at the time of birth as compared to the state rate of 31 percent. Thus, almost half of the babies born in Caroline County are born to single women, most with no father involved. Most of these non-marital births (70 percent) are to women past their teen years and most (60 percent) are to white women. However, the black non-marital birth rate (67.1 percent) is twice that of the white population (33.5 percent).

The Number of Non-Marital Births Have Continued to Rise in Caroline County



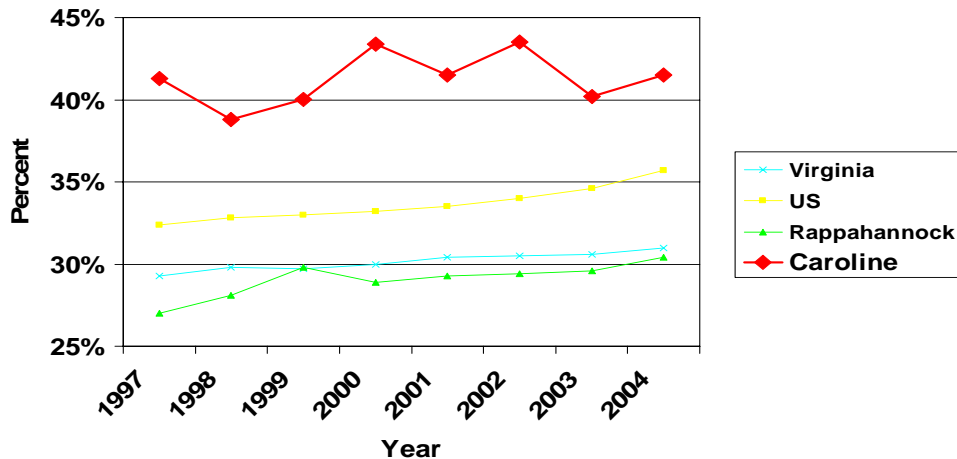
The Caroline County female teen pregnancy rate of 29.2 per 1,000 female teens is slightly higher than the state rate of 27.4 in 2004. This difference is primarily due to the very high rate of teen pregnancy among those who are 18-19 years old with a teen pregnancy rate in this age group of 152.5 as compared to the state rate of 96.8 per 1,000 female teens.

In 2004, there were 51 teen pregnancies in Caroline County. Most (76 percent) were in the 18-19 age group. Most (78 percent) ended in a live birth with 11 terminated by abortion and there were no fetal deaths reported. Most (56 percent) were to white teens, though the black teen pregnancy rate was higher than the white rate; 34.7 and 29.3 respectively.

The National Healthy Marriage Initiative notes that research suggests, all things being equal, children who grow up in healthy, married, two-parent families do better on a host of outcomes than those who do not. Researchers have found many benefits for communities when they have a higher percentage of couples in healthy marriages, compared to unhealthy marriages. These benefits include:

1. Higher rates of physically healthy citizens
2. Higher rates of emotionally healthy citizens
3. Higher rates of educated citizens
4. Lower domestic violence rates
5. Lower crime statistics
6. Lower teen age pregnancy rates
7. Lower rates of juvenile delinquency
8. Higher rates of home ownership
9. Lower rates of migration
10. Higher property values
11. Decreased need for social services

Percent of all births to single mothers remains high in Caroline County, 1997-2004.



Proposed Solutions

The Advisory Commission recommends a comprehensive school and community based approach to address non-marital births in Caroline County. Solutions are in rank order, according to: (1) being the most doable and (2) having the greatest impact on the community issue.

School-Based Strategies

The Commission recommends addressing in the School Wellness polices non-marital births by:

1. Enhancing the school's Family Life education program.
2. Including in the character education requirements (i.e. courtesy, politeness, respect, and responsibility) to build character and values through the use of curriculums such as the *Worth the Wait* or other abstinence curriculum.
3. Assuring those youth who become teen parents the opportunity to participate in such programs as the Rappahannock Area Community Services Board's Teen Program for Parents.

Community-Based Strategies

To reach the community and those post-high school young adults who are experiencing non-marital births, the Commission recommends:

1. Conducting a community wide campaign targeting 18 to 25 year olds to encourage them to be abstinent from sexual activity and those who choose to be sexually active to use appropriate birth control and educate them on the impact on the children when born in non-marital births.
2. Collaborate with Prevention Planning Partnership (PPP) and the Rappahannock Teen Abstinence Program (RAPTAP).
3. Establishing a comprehensive solution to non-marital births, including involvement of the faith community in abstinence campaigns, increasing fathers/fatherhood involvement, and encouraging the use of birth control/family planning methods to those who are sexually active.
4. Asking employers to provide information to their employees.
5. Training volunteers for a variety of mentoring programs such as Big Brothers, Big Sisters, Lunch Buddies, New Beginnings and other programs for children.

LACK OF HEALTH INSURANCE AND ACCESS TO MEDICAL CARE—CONSIDERED THE NO. 4 PRIORITY

Having health insurance is considered a means of assuring payment for medical related events. The Commission considers the lack of health insurance the same as having the lack of resources to purchase medical care, thus individuals suffer poorer health outcomes. Due to the cost of medical care today, many can not afford out-of-pocket expenses related to medical services, leading to increase illness, suffering, and premature death.

It is estimated that 17.2 percent of Caroline citizens have no medical insurance as compared to the state average of 14.9 percent. Many more individuals have no dental and behavioral health coverage. The majority of people without health insurance are low income and ethnic minorities. People with low incomes (those with income at or below 200 percent of Federal Poverty Level, e.g. \$37,700 for a family of four) are nearly twice as likely to be uninsured as compared with people at higher income levels. Of those without health insurance, 77 percent work either full or part time. Nearly all people without health insurance are under the age of 65 because Medicare provides health insurance for most people aged 65 and over. Yet, having Medicare does not assure that

there is a provider within reasonable driving distance (accessible). In addition, Medicare recipients have significant out-of-pocket expenses related to medications that are not covered by their insurance.

The causes and contributors to people lacking health insurance and medical care are numerous and go beyond the scope of this report. The causes and contributors the Commission believes are impacting Caroline County residents' ability to access health care include:

1. Lacking employment
2. Lacking medical providers
3. Having limited transportation
4. Lacking education or are illiterate
5. Failing to meet Medicaid eligibility criteria
6. Lacking knowledge and attitude about health care, doctors, and health insurance providers
7. Having a health insurance plan that pays for medications, pays some medications, or does not pay for any medications

The compilation of all the factors above impact rural areas greater than urban or suburban areas.

PROPOSED SOLUTIONS

Solutions are in rank order, according to: (1) being the most doable and (2) having the greatest impact on the community issue.

School-Based Strategies

Since children are disproportionately impacted by the lack of health insurance and because schools have a large part of the audience without insurance and access to medical care, the Commission recommends that the current school based health clinics be expanded to include a nurse practitioner under the supervision of the local health department. This clinic would be to provide basic health care services and prescription support. Teens that are sexually active and desire birth control would be referred to other sources.

Community-Based Strategies

Community involvement at many levels will contribute greatly to the solutions for the lack of health insurance and access to medical care. The Commission recommends that consideration be given to:

1. Securing funding for a health center by:
 - a. Encouraging local government officials to seek and accept proffers from developers that include property and funds for a medical center and equipment to be located in south-central Caroline County and staffed with primary care providers.
 - b. Asking Hospital Corporation of America (HCA) to plan when building a hospital in the Massaponax area to include a primary care medical center in Caroline.
 - c. Expanding the Community Services Board building project on Highway 207 to include a primary care medical center in partnership with the Community Services Board, the County, the contractor, medical suppliers, and other interested stakeholders.
 - d. Making an effort to have the Caroline County Health Department facility be developed into a medical center, seeking federally qualified health center (FQHC) status; and securing Community Health Access Project funds and foundation funds to integrate current public health clinical services into a primary care model of service delivery using a mix of primary care providers.
 - e. Making an effort to attract culturally competent, preferably African-American physicians, to establish a medical practice in the Dawn area of Caroline County and include a Hispanic physician to reach other segments of the population.
2. Asking the Rappahannock Area Health District (RAHD) to expand the Rappahannock Area Health District Sexually Transmitted Infection clinical services to Caroline County Health Department consistent with the RAHD Strategic Plan.
3. Requesting Mary Washington Hospital and Bons Secours to expand their mobile health care services to establish frequent, consistent schedules in Caroline County with a consistent set of providers.
4. Having County officials seek assistance from Memorial Regional Memorial Hospital in Hanover County to expand services to Caroline residents.
5. Improving access to medications could include:
 - a. Asking all pharmacy providers in Caroline County to participate in the Pharmacy Connection Program and expanding outreach efforts to inform county citizens of the program's availability.

- b. Making an effort to increase the number of pharmacists working in the private sector in Caroline County.
 - c. Making an effort to expand access to affordable medications through partnership with the Community Pharmacy with the United Way and Medicorp MAP program.
- 6. Asking area employers to expand health insurance coverage for their employees, including coverage of pharmaceuticals.
- 7. Encouraging County officials to work with the Medicorp physician recruitment office and the Virginia Department of Health Office of Primary Care to attract primary care physicians to Caroline County.
- 8. Asking agencies working with individuals who qualify for Medicaid and FAMIS to expand their efforts in Medicaid and FAMIS eligibility outreach.

FUNDING STRATEGIES FOR ALL PRIORITIES

To adequately address the four priorities identified by the Health Advisory Commission, a variety of funding sources will be needed. Because of the vastness of the tasks to improve the overall health of the community, the Commission has chosen to focus on only two of the priorities initially. These include obesity and smoking and tobacco use. To begin the work, these funding strategies have been identified:

School-based strategies

It is recommended that the Caroline County Board of Supervisors support the effort to address the Commission's top two priorities by providing a total of \$50,000 to be used to address obesity and tobacco use. These funds would be used to hire a certified health teacher to implement the school-based strategies relating to the Standards of Learning on obesity and smoking and tobacco at the primary and elementary school levels.

Community Based Strategies

The Commission will make an application to the Mary Washington Hospital Foundation for support of a health educator to implement the community-based strategies for obesity and smoking and tobacco use. It is expected that this application would include a request of approximately \$100,000. A letter of intent to the foundation is due July 7, 2006, for funding to be awarded January 2007.

Centers for Disease Control Prevention Specialist

Caroline County Health Department, in partnership with Caroline County Public Schools, will apply for placement of a prevention specialist from the Centers for Disease Control valued at over \$120,000 for a two year period. The prevention specialist will give leadership to programming that will address smoking and tobacco and the non-marital birth issues at the middle and high school levels.

PART I

FINDINGS

SOCIO-DEMOGRAPHIC AND HEALTH STATUS CHARACTERISTICS

GEOGRAPHIC LOCATION

Caroline County is strategically located in central Virginia along the Interstate 95 corridor roughly midway between Washington D.C. and Richmond. The county is heavily forested and is one of Virginia's top producers of forest products with 261,700 acres devoted to commercial forest land. A total of 51,605 acres are in farm land. The major employers in the county are all associated with forestry. Wood products, millwork, moldings, pallets, skids, and trim are all major businesses in the county. Increasingly, light industry, distribution centers, and fabrication facilities are developing in response to the county's location along the Interstate 95 corridor.

The Rappahannock River borders Caroline County to the north and the Pamunkey to the south, and the North Anna River borders the county to the southwest. About 70,000 acres (one-fifth of the land mass) of Caroline County are devoted to the Fort A.P. Hill military installation, east of Bowling Green. The military base is known nationally as the permanent site for the National Boy Scout Jamboree. The county's two incorporated towns, Bowling Green and Port Royal have populations of 766 and 204 respectively. Bowling Green is the population center of the service area.

POPULATION

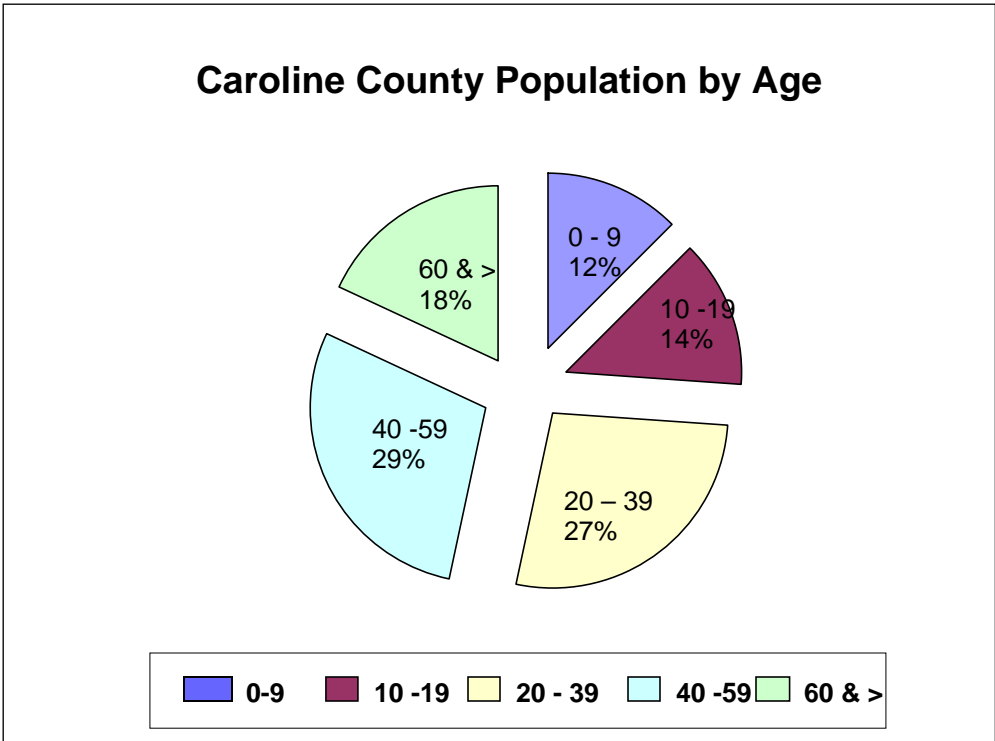
The population of Caroline County is widely dispersed, with the highest density found within a triangle defined by Bowling Green to the east, and Ladysmith and Ruther Glen parallel to the Interstate 95 corridor. There are 26,000 citizens living in Caroline County. This represents an 8.5 percent increase since 2000. Caroline is quickly changing with residential development occurring in the western portion of the county at a rate that earned it the distinction of being in the top 10 fastest growing counties in the nation and in the top 5 in Virginia.

The age distribution of Caroline County citizens is very similar to the state. The white population makes up 67 percent of the population while 32 percent are black. The majority of Caroline County population was Black until the 1990 Census showed a reversal and the ratio of white/black has continued to increase ever since.

As many as 28.7 percent of Caroline County residents have no high school diploma as compared to the state average of 18.5 percent. Medium income is slightly higher than the state average.

SOCIO-DEMOGRAPHIC CHARACTERISTICS

Population	Caroline County		Virginia	
Size (2003)	23,190		7,386,330	
Age Distribution				
0-17 years	5,516	23.8%	1,798,767	24.4%
18-39 years	6,872	29.6%	2,324,978	31.5%
40-64 years	7,772	33.5%	2,429,158	32.9%
65-84 years	2,693	11.6%	734,068	9.9%
85 years & over	337	1.5%	99,359	1.3%
Gender Distribution (%)				
Male	11,535	49.7%	3,631,658	49.2%
Female	11,655	50.3%	3,754,672	50.8%
Race Distribution				
White	15,256	65.8%	5,515,423	74.7%
Black	7,620	32.9%	1,507,946	20.4%
Asian	113	0.5%	335,413	4.5%
Hispanic	377	1.6%	394,856	5.3%
Native American	201	0.9%	27,548	0.4%
Education				
People with no high school diploma (among adults age 25 and older)	28.7%		18.5%	
Graduates going on to post high school education (2001)	72.8%		73.1%	
High School Dropout (2001)	0.8%		2.5%	
School Expenditures/student (2001)	\$6,514		\$7,657	
Income				
Median Household Income	\$39,845		\$39,493	
Estimated Uninsured (2001)	3,988	17.2%	1,070,972	
Medicaid Recipients (2001)	1,837		482,953	
%Unemployment (2001)	3.1%		3.5%	



COMMUNITY HEALTH PROFILE

Various data sources indicate the degree that Caroline County residents are likely to be suffering from disease because of lifestyle choices. Poor nutrition, inactivity, and tobacco use are those conditions that are literally killing Caroline County. Though risk behavior data is not available on Caroline County residents, the Virginia Risk Factor Surveillance Survey of Virginians shows that 78 percent of Virginians live a sedentary lifestyle; that 73 percent include few fruits and vegetables in their diet, that 31 percent are obese and a total of 59% having weight issues, and 23 percent continue to smoke despite decades of research and evidence on the hazards of tobacco smoking.

AMBULATORY SENSITIVE CONDITIONS PER 100,000 (2001)

Population	Caroline County	Virginia
Size (2003)	23,190	7,386,330
Asthma Hospital Discharges	236	176
Hypertension Hospital Discharges	13	23
Diabetes Hospital Discharges	102	92
Psychoses Hospital Discharges	539	444
Extreme Prematurity/RDS Hospital Discharges	9	20

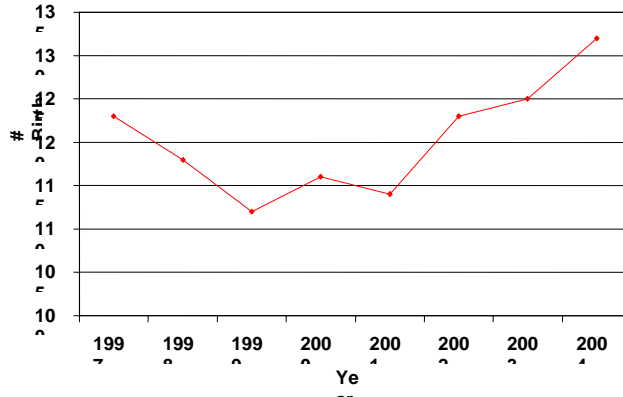
Source: www.vahealthycommunities.com

2004 Community Health Profile			
Vital Event	Virginia	Planning District 16	Caroline Co.
Total Live Births	100,561	4,130	311
Birth Rate/1,000 Estimated Population	13.6	14.7	13.4
Non-Marital Births	30,769	1,221	125
Percent Non-Marital Births	30.6	29.6	40.2
Low Weight Birth (<2,500 grams)	8,278	297	21
Low Weight Birth Percent of Total Births	8.2	7.2	6.8
Began Care in First 13 Weeks	85,259	3,617	275
Percent Began Care in First 13 Weeks	84.8	87.6	88.4
Induced Terminations of Pregnancy	26,281	818	73
Natural Fetal Deaths	7,793	236	8
Total Teenage Pregnancies	13,665	540	45
Preg Rate/1,000 Pop Ages 10-19	27.4	24.7	29.2
Pregnancies Ages<15 yrs	284	4	0
Preg Rate/1,000 Pop Ages<15	1.1	0.4	0
Pregnancies Ages 15-17	4,017	146	9
Preg Rate/1,000 Ages 15-17	27.1	22.4	18.8
Pregnancies Ages 18-19	9,364	390	36
Preg Rate/1,000 Ages 18-19	96.8	95.1	152.5
Total Infant Deaths	766	33	1
Infant Death Rate/1,000 Live Births	7.6	8	3.2

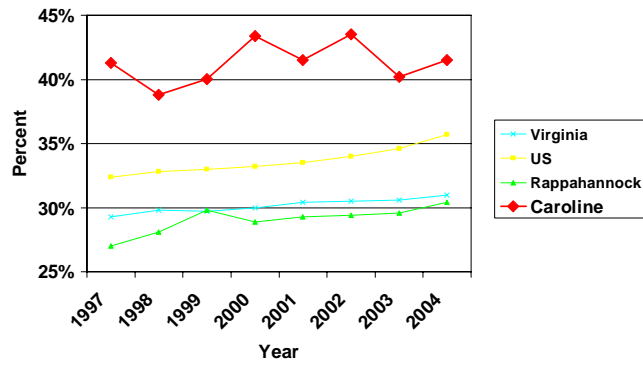
NON-MARITAL BIRTHS

Outstanding health status findings from the Virginia Center for Health Statistics regarding the health of Caroline County show that a very high non-marital or father absent birth rate of 41.5 percent. That is, 41.5 percent of all live births are to women who are single at the time of giving birth as compared to the state rate of 31% in 2004. Most of these non-marital births (70 percent) are to women past their teen years and most (60 percent) are to white women. However, the black non-marital birth rate (67.1) is twice that of the white population (33.5).

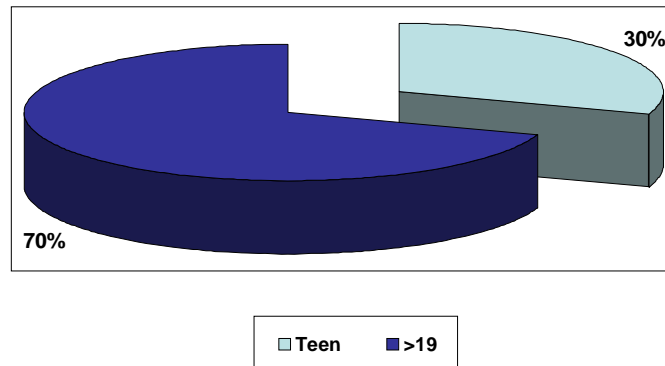
The Number of Non-Marital Births Have Continued to Rise



Percent of all births to single mothers remains high in Caroline County, 1997-2004.



Most (70%) non-marital births in Caroline County are to women 20 years and older, 2004.



TEEN PREGNANCY

In the Virginia Adolescent Resiliency Assessment survey (VARA) of Caroline High School students that was conducted in spring 2004, 24% of the teens said, when asked about sex before marriage, that it “is not acceptable behavior in the opinion of most people in our community,” 61% reported they thought it was “not encouraged, but is acceptable behavior in the opinion of most people in our community,” and only 16% said that it was “encouraged by most everyone in our community.”

When asked about teen pregnancy, 50% of the students said that it “is not acceptable behavior in the opinion of most people in our community,” 46% said they thought it was “not encouraged, but is acceptable behavior in the opinion of most people in our community,” and only 5% said that it was “encouraged by most everyone in our community.”

As many as 55% of Caroline’s teens said they had had sexual intercourse with the percentage of teens reporting intercourse increasing with the increasing grade level. Reports ranged from 44% to 77%. Of those who reported having had sex, 20% had their first experience at or before age 12 and 55% said they had their first experience between the ages of 13 and 15.

Caroline’s teen pregnancy rate of 29.2 teen pregnancies per 1,000 female teens is slightly higher than the state rate of 27.4. This difference is primarily due to the very high rate of teen pregnancy among those who are 18-19 years old with a teen pregnancy rate in this age group of 152.5 as compared to the state rate of 96.8.

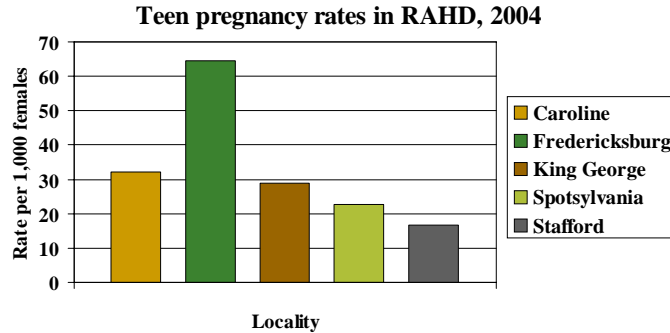
In 2004, there were 51 teen pregnancies in Caroline County. Most (39 or 76 percent) were in the 18-19 age group. Most (40 or 78 percent) ended in a live birth with 11 terminated by abortion and there were no fetal deaths reported in 2004. Most (29 or 56 percent) were to white teens, though the black teen pregnancy rate was higher than the white rate, 34.7 and 29.3 respectively. Teen live births represent 16 percent of all live births in Caroline County which is almost double the state rate of 8.5 percent.

The Caroline County female teen pregnancy rate of 29.2 per 1,000 female teens is slightly higher than the state rate of 27.4 in 2004. This difference is primarily due to the very high rate of teen pregnancy among those who are 18-19 years old with a teen pregnancy rate in this age group of 152.5 as compared to the state rate of 96.8 per 1,000 female teens.

As with the non-marital birth rates, teen pregnancy rates are calculated considering the total number of female teens by race. Though the total number of black teen pregnancies is smaller than the total number of white pregnancies, the proportion of those that were teen pregnancies is higher in the black population than the white population because the total number of black female teens is smaller than the white female teens. In 2004 there were 29 white teen pregnancies and 22 black teen

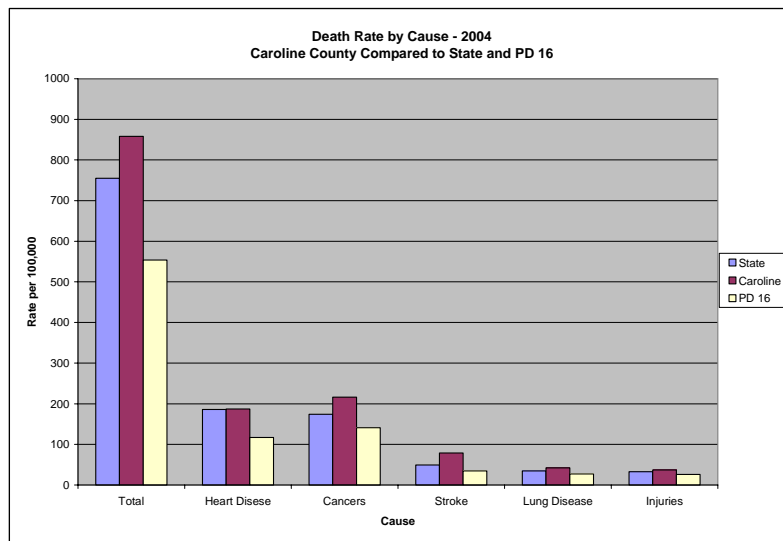
pregnancies. The teen pregnancy rate among black teens is higher than white teens. Teen live births represent 16 percent of all live births in Caroline County which is almost double the state rate of 8.5 percent.

Teen pregnancy rate in Caroline County is second highest rate in the Rappahannock Area Health District.



DEATHS

The death rate of 10.2 deaths per 100,000 population in Caroline County is slightly higher than the state rate of 7.8. The death rate due to major causes of death are higher in Caroline County than the state including diseases of the heart, malignant neoplasms, cerebrovascular disease, chronic lower respiratory disease, and unintentional injuries.



2004 Community Health Profile			
Vital Event	Virginia	Planning District 16	Caroline Co.
Total Deaths for All Ages	57,834	1,757	237
Death Rate/1,000 Estimated Pop (All Ages)	7.8	6.3	10.2
Death Rate/100,000 Estimated Pop (Cause of Death)	783	626.5	1,022.00
Diseases of Heart	14,690	419	72
Diseases of Heart Rate/100,000	198.9	149.4	310.5
Malignant Neoplasms	13,696	423	51
Malignant Neoplasms Rate/100,000	185.4	150.8	219.9
Cerebrovascular Diseases	3,915	105	16
Cerebrovascular Diseases Rate/100,000	53	37.4	69
Chronic Lower Respiratory Diseases	2,966	94	21
Chronic Lower Respiratory Diseases Rate/100,000	40.2	33.5	90.6
Unintentional Injury	2,559	85	11
Unintentional Injury Rate/100,000	34.6	30.3	47.4

CONCLUSION

The Virginia Hospital Information system prevention quality indicators show that Caroline County residents suffer from higher hospitalization rates for asthma, chronic obstructive pulmonary disease, long-term complications of diabetes and congestive heart failure, and psychoses as compared to the state average adjusting for risk.

Caroline has been designated as a Health Professional Shortage Area (HPSA) due to a shortage of primary medical care, dental, and mental health providers. This shortage contributes to individuals' illnesses because they are not diagnosed in a timely manner.

This data indicates the degree that Caroline County residents are likely suffering from the main contributors of diseases—lifestyle choices. Poor nutrition, inactivity, and tobacco use are those conditions that are literally killing Caroline County.

2003 Prevention Quality Indicators for Caroline						
Indicator Name	Numerator	Denominator	Rate	Risk Adj.	Smoothed	State Risk Adj.
Complications From Diabetes - Short Term	6	17,739	33.82	35.31	38.99	57.65
Perforated Appendix	8	27	29.63	29.56	30.51	28.68
Complications From Diabetes - Long Term	28	17,739	157.84	157.53	147.27	120.60
Pediatric Asthma	26	5,451	476.99	432.79	389.68	185.95
Chronic Obstructive Pulmonary Disease	60	17,739	338.23	336.87	330.74	260.44
Pediatric Gastroenteritis	1	5,451	18.35	18.97	35.26	71.01
Hypertension	8	17,739	45.10	45.49	43.95	40.74
Congestive Heart Failure	106	17,739	597.55	606.54	594.66	502.23
Low Birth Weight	11	311	3.54	3.52	4.67	6.07
Dehydration	26	23,190	112.12	111.86	113.15	144.30
Bacterial Pneumonia	79	23,190	340.66	329.40	328.68	342.53
Urinary Infection	25	23,190	107.81	106.57	109.68	135.40
Angina w/o Procedure	2	17,739	11.27	8.68	15.14	42.72
Diabetes - Uncontrolled	1	17,739	5.64	5.14	9.28	15.39
Adult Asthma	27	17,739	152.21	156.49	149.33	128.63
Lower Extremity Amputation	10	17,739	56.37	55.65	47.12	41.56

PART II

COMMUNITY HEALTH PRIORITIES DEFINED

CHAPTER I

OBESITY—CONSIDERED THE NO. 1 PRIORITY

DEFINITION OF OBESITY

The Advisory Commission agreed to use the medical standards for defining obesity though the Commission had a concern about activity level as an element of obesity. That is, obesity is considered more significant in those whose ability to function, move, or perform activities of daily living is compromised due to excess weight. The Commission is not just concerned about health, but healthy living as well.

Using the American Academy of Pediatrics definition of obesity in children, body mass index (BMI), the ratio of weight in kilograms to the square of height in meters is the standard. BMI is widely used to define overweight and obesity, because it correlates well with more accurate measures of body fatness and is derived from commonly available data—weight and height.¹ It has also been correlated with obesity-related ill health conditions in adults and children. “Clinical judgment must be used in applying these criteria to a patient, because obesity refers to excess fat tissue rather than excess weight, and BMI is a surrogate for obesity. The pediatric growth charts for the US population now include BMI for age and gender and allow longitudinal tracking of BMI.² BMI between 85th and 95th percentile for age and sex is considered at risk of overweight, and BMI at or above the 95th percentile is considered overweight or obese.^{3,4}

WHY OBESITY IS CONSIDERED THE NO. 1 PRIORITY

The State Board of Health noted that “poor diet and inadequate physical activity, which often lead to obesity, were responsible for about 16 percent of all deaths in the U.S. in 2000, making it the second leading actual cause of death.⁵ Since 1980, national obesity rates have doubled among children and tripled among adolescents.⁶ Over the past ten years, national obesity rates among adults have increased by 60 percent. In Virginia,

24 percent of adults were obese in 2002 while 35 percent were overweight.⁷ In 2004, 19 percent of children ages 2-5 who participated in Virginia's Special Supplemental Nutrition Program for Women, Infants and Children (WIC) program were either overweight or at risk for overweight."⁸

The American Academy of Pediatrics states that the prevalence of childhood overweight and obesity is increasing at an alarming rate in the United States. Prevalence among children and adolescents has doubled in the past 2 decades in the United States. Currently, 15.3 percent of all 6- to 11-year-olds and 15.5 percent of 12- to 19-year-olds are at or above the 95th percentile for BMI on standard growth charts based on reference data from the 1970s, with even higher rates among subpopulations of minority and economically disadvantaged children.^{9, 10} Recent data from the Centers for Disease Control and Prevention also indicate that children younger than 5 years across all ethnic groups have had significant increases in the prevalence of overweight and obesity.^{11, 12} American children and adolescents today are less physically active as a group than were previous generations, and less active children are more likely to be overweight and to have higher blood pressure, insulin and cholesterol concentrations, and more abnormal lipid profiles.¹²

The consequences of obesity and overweight are long-term. Obesity often starts early in life and contributes to other illnesses. It is the underlying cause of many chronic illnesses.

The State Board of Health noted that "obesity is a leading risk factor for several chronic diseases, including cardiovascular disease, diabetes, hypertension, and arthritis. The future disease burden as represented by these facts has personal and financial consequences that need to be considered now rather than later."

The American Academy of Pediatrics notes that "obesity is associated with significant health problems in the pediatric age group and is an important early risk factor for much of adult morbidity and mortality.^{13, 14} Medical problems are common in obese children and adolescents; and it can affect cardiovascular health (hypercholesterolemia and dyslipidemia, hypertension),^{12, 15, 16, 17} the endocrine system (hyperinsulinism, insulin resistance, impaired glucose tolerance, type 2 diabetes mellitus, menstrual irregularity),^{18, 19, 20} and mental health (depression, low self-esteem).^{21, 22} Because of the increasing incidence of type 2 diabetes mellitus among obese adolescents and because diabetes-related morbidities may worsen if diagnosis is delayed, the clinician should be alert to the possibility of type 2 diabetes mellitus in all obese adolescents, especially those with a family history of early-onset (younger than 40 years) type 2 diabetes mellitus."²³

In addition "the psychologic stress of social stigmatization imposed on obese children may be just as damaging as the medical morbidities. The negative images of obesity are so strong that growth failure and pubertal delay have been reported in children practicing self-imposed caloric restriction because of fears of becoming obese.²⁰ Other important complications and associations include pulmonary (asthma, obstructive sleep apnea syndrome, pickwickian syndrome),^{24, 25, 26, 27, 28, 29} orthopedic (genu varum, slipped

capital femoral epiphysis),^{30 31} and gastrointestinal/hepatic (nonalcoholic steatohepatitis)³² complications. All these disturbances are seen at an increased rate in obese individuals and have become more common in the pediatric population. The probability of childhood obesity persisting into adulthood is estimated to increase from approximately 20 percent at 4 years of age to approximately 80 percent by adolescence.³³ In addition, it is probable that comorbidities will persist into adulthood.^{34,35} Thus, the potential future health care costs associated with pediatric obesity and its comorbidities are staggering, prompting the Surgeon General to predict that preventable morbidity and mortality associated with obesity may exceed those associated with cigarette smoking.”^{34,36}

Obesity is preventable especially if it is addressed early in life using the prevention solutions that are available. Success is more likely when obesity is addressed with children and youth. The American Academy of Pediatrics notes that “although treatment approaches for pediatric obesity may be effective in the short term,^{30,31,32,37,38} long-term outcome data for successful treatment approaches are limited.”^{39,40}

The State Board of Health study of obesity noted that:

1. Increased physical activity for overweight patients reduces many of the illnesses associated with obesity, helps maintain weight loss, and helps prevent weight gain. If 10 percent of adults began a regular walking program, \$5.6 billion in heart disease costs could be saved.⁴¹
2. Estimates suggest that \$8 million per year could be saved for every 1 percent increase in the proportion of the adult population that is sufficiently active.⁴²
3. Increasing fruit and vegetable consumption by one serving a day per person would result in direct health care savings of \$180 million per year.⁴³
4. Among overweight Americans with pre-diabetes, modest lifestyle changes reduced diabetes incidence by 58 percent. Lifestyle changes included weight loss of 5-7 percent of body weight, 150 minutes of physical activity per week and a lower fat diet. These lifestyle interventions worked equally well in men and women and in all ethnic groups. These interventions were most effective in people age 60 and over, who lowered their risk of developing diabetes by 71 percent.⁴⁴

Obesity prevention and treatment is intergenerational in nature. Overweight parents are more likely to have overweight children. The American Academy of Pediatrics notes that it “has long been recognized that obesity “runs in families”—high birth weight, maternal diabetes, and obesity in family members all are factors—but there are likely to be multiple genes and a strong interaction between genetics and environment that influence the degree of adiposity.”^{45,46,47,48} For young children, if one parent is obese, the odds ratio is approximately 3 for obesity in adulthood, but if both parents are obese, the odds ratio increases to more than 10. Before 3 years of age, parental obesity is a stronger predictor of obesity in adulthood than the child’s weight status.⁴⁶ Such

observations have important implications for recognition of risk and routine anticipatory guidance that is directed toward healthy eating and activity patterns in families.”

TARGET AUDIENCE

Obesity is common place in Caroline and the “whole community” including children, youth, and adults should be targeted if improved health status is expected to occur within Caroline County. Obesity is an issue that is recognized as impacting all segments of the county including schools, community, and family.

CAUSES AND CONTRIBUTING FACTORS

Development of effective prevention strategies mandates that we recognize the causes and contributors to obesity. The Advisory Commission is interested in addressing obesity that is behavioral related vs. those forms that are genetic/medically related. A family trait that is an indicator of obesity is reflected in obese youth who most often have overweight or obese parents and who grow up to be obese adults. As noted earlier, if 1 parent is obese, the odds of a child being obese as an adult increases by an additional ratio of 3. If both parents are obese, the odds increase by a ratio of 10.

There are critical periods in life where a behavior is developed and it then becomes more difficult to change the behavior. The American Academy of Pediatrics notes that “there are critical periods of development for excessive weight gain. Extent and duration of breastfeeding have been found to be inversely associated with risk of obesity in later childhood, possibly mediated by physiologic factors in human milk as well as by the feeding and parenting patterns associated with nursing.^{47, 49, 50, 51} Investigations of dietary factors in infancy, such as high protein intake or the timing of introduction of complementary foods, have not consistently revealed effects on childhood obesity.

It has been known for decades that adolescence is another critical period for development of obesity.⁵² The normal tendency during early puberty for insulin resistance may be a natural cofactor for excessive weight gain as well as various co-morbidities of obesity.⁵³

Early menarche is clearly associated with degree of overweight, with a twofold increase in rate of early menarche associated with BMI greater than the 85th percentile.⁴¹ The risk of obesity persisting into adulthood is higher among obese adolescents than among younger children.⁴⁶ The roles of leptin, adiponectin, ghrelin, fat mass, and puberty on development of adolescent obesity are being actively investigated.”

Obesity is related to other risk factors of adolescents. The American Academy of Pediatrics notes that “data suggest that adolescents who engage in high-risk behaviors, such as smoking, ethanol use, and early sexual experimentation also may be at greater risk of poor dietary and exercise habits.”⁵⁴

Obesity is a choice behavior, a function of “self induced” eating habits. Obesity and self-induced eating habits are promoted by advertising, fast food establishments, and eating outside of the home. Lack of access to community based programs and solutions in rural communities are considered a contributor. Hard working parents, parents not being at home, and other environmental factors are considered important contributors by the Commission.

The American Academy of Pediatrics notes that “environmental risk factors for overweight and obesity, including family and parental dynamics, are numerous and complicated.” Among these environmental risk factors are:

1. Food insecurity may contribute to the inverse relationship of obesity prevalence with socio-economic status, but the relationship is a complex one.⁴³
2. Barriers low-income families may face are lack of safe places for physical activity and lack of consistent access to healthy food choices, particularly fruits and vegetables.
3. Low cognitive stimulation in the home, low socio-economic status, and maternal obesity all predict development of obesity.⁴⁴
4. In research settings, there is accumulating evidence for the detrimental effects of over controlling parental behavior on children’s ability to self-regulate energy intake. For example, maternal-child feeding practices, maternal perception of daughter’s risk of overweight,⁵⁵ maternal restraint, verbal prompting to eat at mealtime, attentiveness to no eating behavior, and close parental monitoring⁵⁶ all may promote undesired consequences for children’s eating behaviors.
5. Children and adolescents of lower socio-economic status have been reported to be less likely to eat fruits and vegetables and to have a higher intake of total and saturated fat.^{52, 57, 58}
6. Absence of family meals is associated with lower fruit and vegetable consumption as well as consumption of more fried food and carbonated beverages.

Parent food choices and offerings influence choices of children. The American Academy of Pediatrics notes that “parental food choices influence child food preferences,⁵⁹ and degree of parental adiposity is a marker for children’s fat preferences.”⁵⁴

Fear of participation in physical education exists among youth. Decreased availability of physical education in schools and a decrease in after school activities and sports contribute to the obesity in youth. Schools lack space for the number of students who are assigned to the Physical Education program to have appropriate space to engage

in activity. The lack of exercise due to computer games, watching TV also is contributing.

The American Academy of Pediatrics notes that “widespread and profound societal changes during the last several decades have affected child rearing, which in turn has affected childhood patterns of physical activity as well as diet.” National survey data indicate that children are currently less active than they have been in previous surveys. Leisure activity is increasingly sedentary, with wide availability of entertainment such as television, videos, and computer games. In addition, with increasing urbanization, there has been a decrease in frequency and duration of physical activities of daily living for children, such as walking to school and doing household chores. Changes in availability and requirements of school physical education programs have also generally decreased children’s routine physical activity, with the possible exception of children specifically enrolled in athletic programs. All these factors play a potential part in the epidemic of overweight.⁶⁰

National survey data indicate that 20 percent of US children 8 to 16 years of age reported 2 or fewer bouts of vigorous physical activity per week, and more than 25 percent watched at least 4 hours of television per day.⁶¹ Children who watched 4 or more hours of television per day had significantly greater BMI, compared with those watching fewer than 2 hours per day.⁶¹ Furthermore, having a television in the bedroom has been reported to be a strong predictor of being overweight, even in preschool-aged children.⁶² Some cross-sectional data have found significant correlation between obesity prevalence and television viewing,^{63, 64, 65} but others have not.^{66, 67}

The results of a randomized trial to decrease television viewing for school-aged children has provided the strongest evidence to support the role of limiting television in the prevention of obesity. In this study, decreasing "media use" without specifically promoting more active behaviors in the intervention group resulted in a significantly lower increase in BMI at the 1-year follow-up, compared with the control group.⁶⁸ Additional support for the importance of decreasing television viewing comes from controlled investigations that demonstrated that obese children who were reinforced for decreasing sedentary activity (and following an energy-restricted diet) had significantly greater weight loss than those who were reinforced for increasing physical activity.³⁷ These findings have important implications for anticipatory guidance and provide additional support for recommendations to limit television exposure for young children.⁶⁹

RESOURCE ASSESSMENT

A survey of community resources reveals a number of opportunities for young and old to become more active and aware of information to reach and maintain an appropriate body weight. An active lifestyle is a primary method for obesity reduction

and prevention. Many of the community resources are not being taken advantage of by the maximum number of individuals.

Children and Youth:

Several opportunities exist for youth to be involved in organized physical activity, one of the most important strategies to prevent obesity. The limited impact of available programs is a result of the number of participants. With over 4,000 school aged children in Caroline County Schools, it is perceived that there are too few getting the lasting instruction and exercise necessary. Many children have no regular physical activity limiting themselves to only that physical activity that is necessary for daily living.

Available programs include but are not limited to:

School Based Resources

1. Caroline County Public Schools encourages activity through its physical education program that meets the Standards of Learning (set forth by the Virginia Department of Education). Physical education programs are in place in each of the primary and elementary schools.
2. Organized school sports are available in Caroline Middle School and Caroline High School including male baseball 7th - 12th grade, male and female soccer, male football, golf, female softball, male and female tennis, male and female basketball, female field hockey, male and female indoor and outdoor track, male and female cross country, female volleyball, and female cheerleading. A number of sports include opportunities for junior varsity and varsity teams, providing more opportunities for youth to be involved. Approximately 650 youth participate in the various sports with only 120 of those participating in more than one sport.
3. JROTC promotes physical activity including physical fitness testing, orienteering, summer camp, drill competitions, Raider's Challenge, repelling, and leadership reaction course.
4. The schools do have access to the State Department of Education "Virginia on the Move" Program.
5. Good nutrition is promoted to youth through the school physical education/health education program, Work and Family Studies program, and science classes. The school food services program functions within certain federal guidelines regarding content and proportions of food served. Ladysmith Primary School food services and physical education program won the Governor's Bronze Award for Best Practices in Nutrition and Physical Activity for the work done to promote activity and proper nutrition among the students.

Community Based Resources

1. A new skateboard park is being developed to offer a safe setting for skateboard enthusiasts.
2. Little League baseball reaches approximately 500 children ages 4 to 15 years of age. Another 305 youth are involved in youth baseball.
3. The Caroline Recreation youth soccer program provides activity for approximately 250 youth soccer players.
4. Dance and Tap provide physical activity and contribute to an exercise lifestyle for an audience of primarily girls and karate reaches an audience primarily of boys.
5. The Caroline County Parks and Recreation programs include basketball for youth and adults, youth football, and track.
6. The Caroline 4-H program promotes good physical health by encouraging appropriate nutrition and activity.
7. Cub/Boys Scouts and Brownies/Girl Scouts have training on nutrition and physical fitness and provide opportunities for its members to participate in a variety of physical activities including hiking and camping.
8. A small number of Caroline's youth participate in swim competition or other sports events that are located outside of the local community.

Adult Resources

Opportunities for adults to participate in organized physical activity are limited within Caroline County beyond activity achieved during the performance of work responsibility. Those known to exist include:

1. "Curves" a proprietary exercise program located in Ladysmith and Bowling Green provides exercise for adult women.
2. Exercise machines for home use are still a marketable item, though their use by Caroline County citizens is unknown.
3. Church leagues provide opportunities for adults to participate in basketball and softball; however the number of participants is unknown.
4. Caroline Parks and Recreation programs provide adults with activity in basketball, softball, aerobics, yoga, and karate.

Family Resources

A number of programs provide physical activities for families either as individuals or as a family group. These include:

1. A YMCA is being constructed in Ladysmith and is expected to be open in the summer or early fall of 2006.
2. "Step up to Health" tool kits are available from Mary Washington Hospital promoting Wellness Day.
3. Several county programs promote good nutrition; a major strategy for addressing obesity. Smart Choices in Nutrition Education Program, Virginia Cooperative Extension, provides nutrition education for individuals and families. Women's Infants and Children Nutrition Supplement Program (WIC) is a Caroline County Health Department grant supported nutrition education program for pregnant women, infants and children who meet certain income limitations. This program served 539 women last year. Every six months participants are required to receive nutrition education in order to stay enrolled in the program. This program also provides food vouchers with a limited dollar value (average \$28.00/month) for a very limited set of nutritious foods including milk, cheese, peanut butter and several cereals.

PROPOSED SOLUTIONS

Solutions are in rank order, according to: (1) being the most doable and (2) having the greatest impact on the community issue.

School Based Strategies

As Caroline County Schools develop their School Wellness policies, obesity and healthy living issues should be specifically addressed. All schools participating in the National School Lunch Program were to develop a School Wellness Policy/Strategy by the beginning of the 2006 school year. The law mandates that this policy must address nutrition education and physical activity. Other school-based activities designed to promote student wellness, guidelines for all foods available during the school day, and assurance that guidelines for our reimbursable school meals meet federal and state requirements. The policy must include a plan for measuring implementation. The Commission recommends:

1. Implementing a Coordinated School Health Program. The CDC has created a model that involved eight key components which include health education, physical education, health services, nutrition services, healthy school

environment, school counseling and psychological and social services, staff wellness, and family and community involvement in the schools.

2. Including in the school lunch calendars information about how many carbohydrates, fats, etc. are in each selection and which food group is being met. They could also include a calorie count for menu items.
3. Teaching and displaying the new food pyramid. Computer programs are available that allow individual students to put in their age and amount of activity, and receive a printout of the number of servings and which foods they should eat in a day.
4. Continuing to meet the state and federal school lunch program requirements and posting or making available information to show how the lunches meet the guidelines.
5. Setting a goal that some type of wellness teaching be done once a month in physical education, health, science, or other classes (i.e. English research or writing assignments could be done on a wellness topic).
6. Continuing to train school personnel on how to integrate physical activity into their daily lessons, no matter the subject. Resources such as Take 10 (www.take10.net) or the Brain Gym (www.braingym.com) could be made available to all classrooms.
7. Conducting a survey (done by Commission members) on what students actually eat in a day, analyze, and decide where to focus teaching.
8. Reviewing the number of food, nutrition, exercise teaching tools and supplies that are available, and having several possibilities a teacher could adapt to use in his/her classroom.
9. Securing handouts to send home by students to pass on wellness information to parents.
10. Providing a cooperative effort between physical education and nursing staffs to measure the heights and weights of students annually and determine their BMI. It is also recommended that these heights and weights be reported to the Virginia Department of Health to become part of the CHAMPION Project (Commonwealth's Healthy Approach and Mobilization Plan for Inactivity, Obesity and Nutrition).
11. Evaluating the contents of the school vending machines to see if healthy choices that meet one of the food groups is offered and making changes where appropriate.

12. Holding competitions between grades/classes for the number of miles walked, bicycled, ran, etc., with recognition and a prize to the group that reaches a certain number of collective miles first.
13. Encouraging the school system to offer individuals or group opportunities to walk, run, or bicycle a certain number of miles. There could be an individual incentive gift as the individual reaches a certain number of miles. Additionally, schools/offices could compete for who reaches a certain number of miles first.
14. Having parents and school staff make an effort to have more youth involved in school sports and steps taken to assure that students take advantage of their physical education time to maximize activity levels.

Community Based Strategies

Since obesity is a community wide issue, it is fitting that strategies be implemented to impact behavioral choices of Caroline residents. The Commission recommends:

1. Having local government set the example by providing a wellness program for employees. Encourage other employers to offer similar programs. Rappahannock Electric and Union Bank and Trust programs could serve as models for the development of this program.
2. Encouraging businesses to allow and encourage physical activity breaks during the day.
3. Making pedometers readily available for individuals and groups at no charge but having some reporting requirement to receive the pedometer.
4. Increasing children's participation in structured outdoor programs by 10 percent per year, i.e. P&R programs, Little League, etc.
5. Creating more walking trails in the county and include trails in every subdivision that is approved.
6. Encouraging all restaurants to offer and label healthy foods on menus.
7. Encouraging businesses to provide incentives for wellness activities.
8. Encouraging businesses to offer appealing health food options in the vending machines.
9. Encouraging the medical community to champion this cause rather than just be health care providers. This is really a separate strategy within a strategy.

10. Promoting different campaigns like the “How Low Can You Go” milk fat reduction campaign that was done a couple of years ago.
11. Challenging individuals to keep daily food logs and follow health guidelines, which include having regular appointments with doctors.
12. Sponsoring adult Olympics in the community where adults can train for competition in walking, running, cycling, basketball, softball, volleyball, etc.
13. Asking Parks and Recreation to provide more family focused activities that promote physical activity as a family unit.
14. Partnering with CHAMPION (Commonwealth’s Healthy Approach and Mobilization Plan for Inactivity, Obesity and Nutrition) to create a united effort among diverse stakeholders and equip Caroline County with the necessary tools to decrease obesity rates.
15. Conducting a community wide walking program with challenges for individuals or between groups.

CHAPTER II

SMOKING AND TOBACCO USE—CONSIDERED THE NO. 2 PRIORITY

DEFINITION OF SMOKING AND TOBACCO USE

The Advisory Commission considers chewing, smoking, dipping, and smokeless tobacco exposure as high risk behaviors and included in the Commission's definition of smoking and tobacco use. This includes the use of cigars, pipes, cigarettes, and snuff.

WHY SMOKING AND TOBACCO USE IS CONSIDERED THE NO. 2 PRIORITY

The Joint Commission on Accreditation of Health Organizations (JCAHO) recognized that tobacco is a major health problem when they included smoking cessation as a component of acute myocardial infarction, congestive heart failure, and pneumonia core measures.⁷⁰ The importance of tobacco treatment has also been recognized by Medicare's new coverage policies.⁷¹ According to the Centers for Disease Control and Prevention (CDC), 15.6 percent of Americans smoke everyday while 15.8 percent of Virginians smoke everyday.⁷² Smoking damages nearly every organ in the human body, is linked to at least 10 different cancers, accounts for some 30 percent of all cancer deaths, and costs billions of dollars each year in health care costs.⁷³

Smoking prevalence among U.S. adolescents declined sharply in the 1970's, but this decline slowed significantly in the 1980's, particularly among white males. Although female adolescents during the 1980's were more likely than male adolescents to smoke, female and male adolescents are now equally likely to smoke. Male adolescents are substantially more likely than females to use smokeless tobacco products; about 20 percent of high school males report current use, whereas only about 1 percent of females do. White adolescents are more likely to smoke and to use smokeless tobacco than are Black and Hispanic adolescents.⁷⁴

In the Virginia Adolescent Resiliency Assessment survey (VARA) of Caroline High School students that was conducted in spring 2004, the teens indicated that tobacco is the second most commonly used substance by Caroline's teens. About 32% of the teens reported having smoked a cigarette at least once in the past month and 11% used on a daily bases. Of those who smoke, 12% reported having their first cigarette between the ages of 8 and 10; 29% said they had their first cigarette between the ages of 11 and 14.

Addiction to smoking and the tobacco use is preventable, especially if addressed early. The Centers for Disease Control and Prevention estimates that cigarette smoking causes more than 440,000 deaths per year, has negative impacts on people at all stages of life, and call smoking "the single most preventable cause of death and disease in the United States."⁷⁵ Few realize the potency of nicotine, and even less consider nicotine to be an addiction, but most smokers will confess that nicotine has a firm grasp on their lives.

With the ability to affect the brain in a matter of seconds, nicotine is a very powerful addiction. In fact, nicotine addiction is more powerful than an addiction to cocaine or even heroin; therefore, tobacco dependence must be treated as an addiction not merely as a habit.⁷⁴ More than 70 percent of the 50 million smokers in the United States today have made at least one prior quit attempt, and approximately 46 percent try to quit each year. The good news is that people can and do quit. In fact, 23.9 percent of Americans and 23.3 percent of Virginians are former smokers.⁷² With the excessive number of Americans who smoke and struggle for years trying to quit, it would only be logical that more can be gained by preventing people from starting in the first place.⁷⁶

Considerable evidence indicated that health problems associated with smoking are a function of the duration (years) and the intensity (amount) of use. The younger one begins to smoke, the more likely one is to be a current smoker as an adult. Earlier onset of cigarette smoking and smokeless tobacco use provide more life-years to use tobacco and thereby increases the potential duration of use and the risk of a range of more serious health consequences. Earlier onset is also associated with heavier use; those who begin to use tobacco as younger adolescents are among the heaviest users in adolescence and adulthood. Heavier users are more likely to experience tobacco-related health problems and are the least likely to quit smoking cigarettes or using smokeless tobacco. Preventing tobacco use among young people is therefore likely to affect both duration and intensity of total use of tobacco, potentially reducing long-term health consequences significantly.⁷⁷

Most of the U.S. public strongly favors policies that might prevent tobacco use among young people. These policies include mandated tobacco education in schools, a complete ban on smoking by anyone on school grounds, further restrictions on tobacco advertising and promotional activities, stronger prohibitions on the sale of tobacco products to minors, and increases in earmarked taxes on tobacco products. Interventions to prevent initiation among young people—even actions that involved restrictions on adult smoking or increased taxes—have received strong support among smoking and nonsmoking adults⁷⁸

A crucial element of prevention is access. Adolescents should not be able to purchase tobacco products in their communities. Active enforcement of age-at-sale policies by public officials and community members appears necessary to prevent minors' access to tobacco. Communities that have adopted tighter restrictions have achieved reductions in purchases by minors. At the state and national levels, price increases have significantly reduced cigarette smoking. The young have been at least as responsive as adults to these price changes. Maintaining higher real prices of cigarettes provides a barrier to adolescent tobacco use but depends on further tax increases to offset the effects of inflation.

Early onset of tobacco use delays the maturation and development of the adolescent, particularly in the realm of coping/ life skills. This makes it especially important to address the use of tobacco products by adolescents early on before developmental delays occur.

Tobacco is highly addictive. Although it is possible to quit without help, evidence shows that the chance of success is much higher with the use of support services. State-supported telephone quit lines overcome many of the barriers to smoking cessation classes because they are free and available at smokers' convenience. They also bring services to smokers in areas that have few resources. Group cessation programs and workplace cessation programs also improve the likelihood of success. Integrated services—which link quit lines, provider services, workplace cessation initiatives, and approved pharmacotherapies including nicotine replacement—offer smokers several help options and lead to greater use of cessation services and more success.⁷⁸

Smoking and tobacco use contribute to other illnesses. According to the State Board of Health, “smoking and other tobacco use was the leading actual cause of death in the United States during 2000, being responsible for approximately 17 percent of all deaths. Tobacco harms unborn babies, infants, children, adolescents, adults, and seniors. Tobacco-related disease is the number one cause of death to Virginians totaling over 9,100 deaths annually, killing more people than AIDS, alcohol, car accidents, fires, illegal drugs, murders, and suicides combined.” If current smoking patterns in the U.S. persist, an estimated 6.4 million of today's children will die prematurely of tobacco-related diseases.⁷⁹

Smoking can also aggravate known health problems like diabetes and can lead to an increase in risk of stroke, heart disease, cancer, and eventually death:

1. Smoking cuts the amount of oxygen reaching tissues. The decrease in oxygen can lead to a heart attack, stroke, miscarriage, Sudden Infant Death Syndrome, or stillbirth.
2. Smoking increases cholesterol levels and the levels of some other fats in your blood, raising risk of a heart attack.
3. Smoking damages and constricts the blood vessels. This damage can worsen foot ulcers and lead to blood vessel disease and leg and foot infections.

4. Smokers with diabetes are more likely to get nerve damage and kidney disease.
5. Smokers get colds and respiratory infections easier.
6. Smoking increases the risk for limited joint mobility.
7. Smoking can cause cancer of the mouth, throat, lung, and bladder.
8. People with diabetes who smoke are three times as likely to die of cardiovascular disease as are other people with diabetes.
9. Smoking increases blood pressure.
10. Smoking raises blood sugar level, making it harder to control diabetes.
11. Smoking can cause impotence.⁸⁰

Exposure to secondhand smoke or environmental tobacco smoke is as harmful as smoking. By helping one smoker reduce or quit you will be helping others who breathe the same air as the smoker. As of 1993, The United States Environmental Protection Agency (EPA) has estimated that environmental tobacco smoke causes 3,000 lung cancer deaths in non-smokers each year.⁸¹ In the same report, the EPA also concluded that passive smoking (secondhand smoke) is responsible for 150,000 to 300,000 lower respiratory tract infections in children under 18 months old each year, and that environmental tobacco smoke can be both an aggravating and a causal factor in childhood asthma.⁸²

Smoking and tobacco use is associated with youth-related concerns such as substance abuse, teen pregnancy, and criminal activity. Overall, about one-third of high-school-aged adolescents in the United States smoke or use smokeless tobacco.⁷⁴ Among addictive behaviors such as the use of alcohol and other drugs, cigarette smoking is most likely to become established during adolescence. Young people who begin to smoke at an earlier age are more likely than later starters to develop long-term nicotine addiction. Most young people who smoke regularly are already addicted to nicotine, and they experience this addiction in a manner and severity similar to what adult smokers experience. Most adolescent smokers report that they would like to quit smoking and that they have made numerous, usually unsuccessful attempts to quit. Many adolescents say that they intend to quit in the future and yet prove unable to do so. Those who try to quit smoking report withdrawal symptoms similar to those reported by adults.⁷⁴

Tobacco use is associated with a range of problem behaviors during adolescence. Smokeless tobacco or cigarettes are generally the first drug used by young people in a sequence that can include tobacco, alcohol, marijuana, and hard drugs. This pattern does not imply that tobacco use causes other drug use, but rather that other drug use rarely occurs before the use of tobacco. Still, there are a number of biological, behavioral, and social mechanisms by which the use of one drug may facilitate the use of other drugs, and adolescent tobacco users are substantially more likely to use alcohol and illegal drugs than are non-users. Teen cigarette smokers are also more likely to get into fights, carry weapons, attempt suicide, and engage in high-risk sexual behaviors which lead to teen pregnancy. These problem behaviors can be considered a syndrome, since involvement in one behavior increases the risk for involvement in others. Delaying or preventing the

use of tobacco may have implications for delaying or preventing these other behaviors as well.⁷²

Smoking and tobacco use related illnesses contribute to 80 percent of hospital admissions. The direct medical expenditures attributable to smoking exceed \$75 billion annually in the U.S., with an additional \$80 billion per year in lost productivity. An economic assessment found that a health care plan's annual cost of covering treatment to help people quit smoking ranged from \$0.89 to \$4.92 per smoker, whereas the annual cost of treating smoking-related illnesses ranged from \$6 to \$33 per smoker.

TARGET AUDIENCE

Non-smoking adolescents and all tobacco users in Caroline County will be targeted by strategies to reduce the risks associated with smoking and tobacco use.

CAUSES AND CONTRIBUTING FACTORS

Parents and peers influence youth use of tobacco. Socio-demographic, environmental, behavioral, and personal factors can encourage the onset of tobacco use among adolescents. Young people from families with lower socio-economic status, including those adolescents living in single-parent homes, are at increased risk of initiating smoking. Among environmental factors, peer influence seems to be particularly potent in the early stages of tobacco use. The first tries of cigarettes and smokeless tobacco occur most often with peers, and the peer group may subsequently provide expectations, reinforcement, and cues for experimentation. Parental tobacco use does not appear to be as compelling of a risk factor as peer use. On the other hand, parents may exert a positive influence by disapproving of smoking, being involved in children's free time, discussing health matters with children, and encouraging children's academic achievement and school involvement.⁷⁷

Some fear that a smoke-free ban will hinder business. In recent years a groundswell of support for smoke-free restaurant and bar laws has developed from states and localities across the country. As of April 2005, more than one-third of the U.S. population, or more than 100 million people, are now covered by strong smoke-free laws, a figure that has more than doubled in size in roughly two years. Smoke-free laws help protect restaurant and bar employees and patrons from the harms of secondhand smoke. Smoke-free laws help the seven out of every ten smokers who want to quit smoking by providing them with public environments free from any pressure or temptation to smoke.⁸³

Accompanying the growth in smoke-free laws nationwide has been a parallel increase in false allegations that smoke-free laws will hurt local economies and

businesses. In fact, numerous careful scientific and economic analyses have shown that smoke-free laws do not hurt restaurant and bar patronage, employment, sales, or profits. At worst, the laws have no effect at all, and they sometimes even produce slightly positive trends. For example, a study in the journal *Tobacco Control* (in 2003) offered a comprehensive review of all available studies on the economic impact of smoke-free workplace laws and concluded that, “All of the best designed studies report no impact or a positive impact of smoke-free restaurant and bar laws on sales or employment. Policymakers can act to protect workers and patrons from the toxins in secondhand smoke confident in rejecting industry claims that there will be an adverse economic impact.”⁷⁵

Members of the business community, including restaurant and bar owners, are becoming increasingly supportive of smoke-free laws, recognizing that these laws can have a positive impact on public health and the health of their business.

Michael O’Neal, former president of the New York State Restaurant Association said, “I feel strongly that it is pro-business and pro-health to eliminate smoking in all workplaces, including restaurants. Smoke-free workplace legislation does not hurt business. Smoking prohibitions in California, Utah, Vermont, Maryland and Maine as well as in hundreds of cities all over the country prove that smoke-free workplace legislation is good for all businesses, including the restaurant business. That shouldn’t be a surprise. Even smokers prefer to breathe clean air.”⁷⁵

Prevention is intergenerational in nature. Smoking parents are more likely to have smoking children. Having access to tobacco is easy for individuals once they are 18 years of age. Once tobacco products are used, an individual is more likely to engage in other abusive and risky behaviors as noted above. The addictive nature of tobacco smoking impacts the overall health of the user. Some users are afraid of quitting for fear of weight gain and they use the product as a reliever of stress.

Marketing of tobacco products is aggressive and found in magazines, newspapers, and mail-outs. Mail-outs frequently include coupons or gifts for those who choose to participate.

Politics in Virginia include recognition that 10 percent of the tobacco settlement funds are to be used for prevention to the general public. As much as 50 percent of the tobacco settlement funds are designated for the tobacco growing communities and 40 percent to the state general fund. Virginia is a tobacco state with companies such as Phillip Morris and R. J. Reynolds being located here.

The military culture has a history of promoting tobacco use. Because of the number of veterans and the number of military installations located in the area, there may be a significant impact on the population.

An individual's attitude toward health impacts one's decision to use or not use tobacco. Smokers and tobacco users frequently have no insurance coverage for smoking cessation programs which frequently involve a large out-of-pocket expense. Non-smokers are frequently fearful of speaking out against smoking and tobacco use. Businesses frequently fail to recognize their costs for employees' smoking related illnesses, lost work time, and productivity and its relationship to increased health insurance costs.

RESOURCE ASSESSMENT

Resources to address the use of tobacco throughout the community are limited, however, there are more resources targeting the youth population. The identified resources include:

Youth Resources

1. Caroline County Public Schools have a no smoking or chewing policy for students and staff in place.
2. The Standards of Learning provide for instruction to students on the impact of tobacco use on the human body.
3. Caroline County Public Schools use the "Life Skills" curriculum at the elementary level, "Skills for Adolescents" at the middle school level and "Say It Straight" curriculum at the high school. Guidance counselors implement these curriculums. Tobacco use is also addressed in the school's health curriculum.
4. Drug Abuse Resistance Education (DARE) is available to all 5th grade classes providing 45 minutes per week of drug prevention education reaching 300 students.
5. School nurses in the day-to-day function of their health clinics have conversations with the students and those students who are smokers are encouraged to stop.
6. Coaches are an important resource to students and have restricted the use of tobacco (smoking or chewing) for their team members. Coaches may be an under utilized resource.
7. Some church youth programs teach about the hazards of tobacco smoking.

8. Mary Washington Hospital offers “Fresh Start” smoking cessation training and will accept referrals from area schools as an alternative to suspension. Caroline County Public Schools do not take advantage of this resource.

Adult Resources

Resources for adults who wish to cease using tobacco products almost do not exist. Caroline County government has a no smoking policy in government buildings and vehicles. Many area restaurants have no smoking areas available in their facilities. Several area businesses have limitations on smoking in certain areas. The resources to help the addicted tobacco consumer quit, include providing nicotine replacement, counseling, and social support connections, are limited.

PROPOSED SOLUTIONS

The Advisory Commission recommends a combination of school-based educational, community policy, and tobacco dependency treatment strategies to address tobacco consumption in Caroline County. Solutions are in rank order, according to: (1) being the most doable and (2) having the greatest impact on the community issue.

Specific recommendations are:

School Based Strategies

1. Distributing information to parents and other adults about how parental smoking can set a negative example for children, why smokers should quit (benefits of quitting, risks of continuing to smoke, etc.), and the dangers of secondhand smoke.
2. Integrating into all grades smoking and tobacco use information specifically targeting health education and linking the information to the Standards of Learning.
3. Applying for Virginia Tobacco Settlement Funds to support the work of the Commission.
4. Including in Caroline County Public Schools’ School Wellness policies, smoking, and tobacco issues.

Community Based Strategies

The Health Advisory Commission recommends:

1. Developing a community based program that includes a media campaign that conveys how smoking affects your family and social life and not only your health; and develop community policies that include requiring all business and restaurants to be smoke free.
2. Equipping people with tools to prevent their exposure to secondhand smoke (for example: teaching mothers and fathers how to ask visiting family members or friends who are smokers not to smoke in the home or car around the children).
3. Providing classes for and information to parents to help them either stop using tobacco products or to help them prevent their youth's involvement in the use of tobacco products.
4. Identifying smoking youth and encouraging them to participate in cessation programs. Similar programs would be available for adults who want to stop using tobacco products also.
5. Having employers encourage their employees to participate in smoking cessation programs and make it part of the benefit plan.
6. Offering smoking cessation programs that follow the public health services guidelines on tobacco dependency treatment which include long term nicotine replacement and social support.
7. Having the County offer smoking cessation programs to its staff as an example for other employers throughout the county.

CHAPTER III

NON-MARITAL BIRTHS—CONSIDERED THE NO. 3 PRIORITY

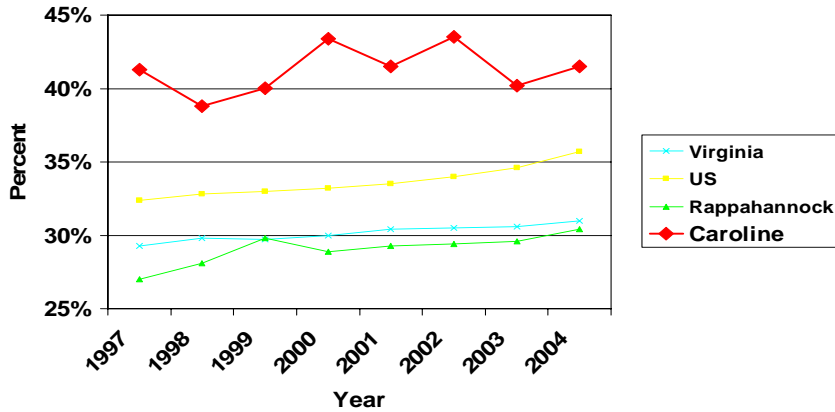
DEFINITION OF NON-MARITAL BIRTHS

Single parent births, referred to as non-marital births (formerly known as illegitimate or out-of wedlock births or what some term father-absent births) are live births that occur to a mother who is not married to the father of the child at the time of birth and has not been married to him at any time during the preceding 10 months. All birthing hospitals or birthing centers or health care providers providing delivery support are required to report all births which are registered as a vital event with the Virginia Department of Health - Center for Vital Records and Health Statistics. The birth report includes the marital status of the birthing mother.

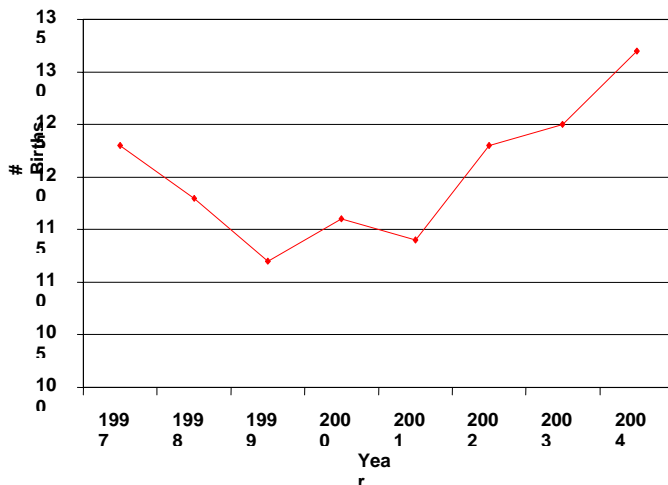
WHY NON-MARITAL BIRTHS ARE CONSIDERED THE NO. 3 PRIORITY

Non-marital births occur more frequently in Caroline County than at the Area XVI Planning District and state levels. Non-marital births have increased in recent years and are a continuing trend that began several decades ago. In 1945 there were 34 non-marital births in Caroline County representing 11.6 percent of all births. There were 63 non-marital births in Caroline County in 1980 representing 22.2 percent of all live births. In 2003 there were 125 non-marital births representing 40.2 percent of all live births, almost a doubling in the rate of non-marital births in the last 20 years.

Percent of all births to single mothers remains high in Caroline County, 1997-2004.



The Number of Non-Marital Births Have Continued to Rise in Caroline County

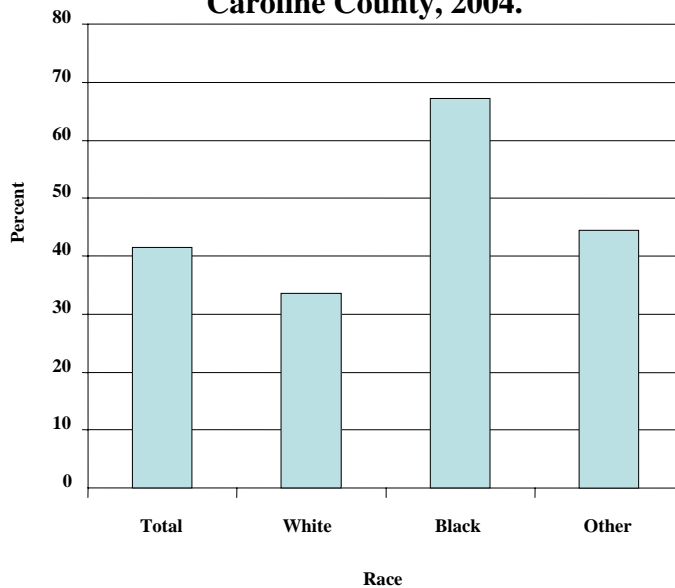


Health status findings from the Virginia Center for Health Statistics include a very high non-marital or father absent birth rate of 41.5 percent. That is, 41.5 percent of all live births are to women who are single at the time of birth as compared to the state rate of 31 percent. Thus, almost half of the babies born in Caroline County are born to single women, most with no father involved. Most of these non-marital births (70 percent) are to women past their teen years and most (60 percent) are to white women. However, the black non-marital birth rate (67.1 percent) is twice that of the white population (33.5 percent).

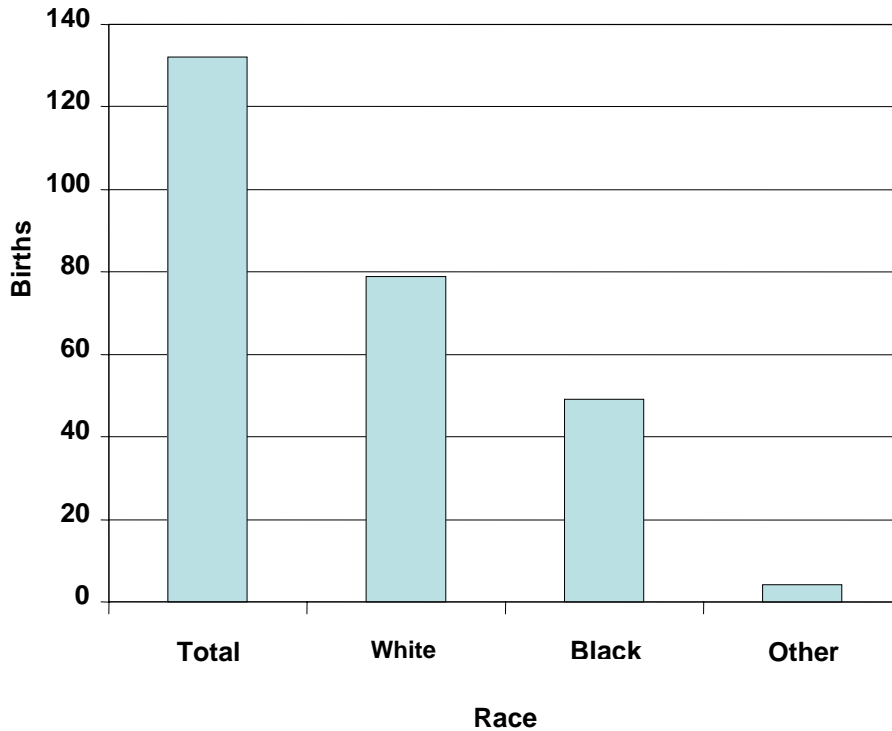
How can the black non-marital birth rate be higher than the white rate when there are more white non-marital births than black non-marital births? The non-marital birth rates are calculated considering the total number of births by race. So, the total number of black births is smaller than the total number of white births, yet the proportion of those that were non-marital is higher in the black population than the white population. In 2003 there were 218 white births and 87 black births. Sixty-four of the white births were non-marital and 59 of the black births were non-marital. Thus, the rate for black non-marital births is $\frac{59 \text{ non-marital births}}{87 \text{ total black births}} \times 100$ or (67%)

the white non-marital birth rate was $\frac{64 \text{ non-marital births}}{218 \text{ total white births}} \times 100$ or (29.4%)

The black non-marital birth rate (%) is two times higher than white non-marital births in Caroline County, 2004.



Most non-marital births in Caroline County are to white mothers, 2004



Most non-marital births are to women 20 years and older. In Caroline County, 99 (79 percent) of 125 non-marital births in 2003 were to women older than 20 years. There were more white non-marital births (64) in Caroline County than Black (59) non-marital births in 2003. However, a disproportionate number of non-marital births in Caroline County are to Blacks, with Blacks representing 47 percent of the non-marital births, but only 27 percent of all births in 2003. Whites, however, have shown the largest proportional increase in non-marital births, increasing from 6.8 percent of all white births in 1980 to 29.4 percent in 2003. The Black non-marital birth rate increased from 47.2 percent in 1980 to 67.8 percent in 2003.

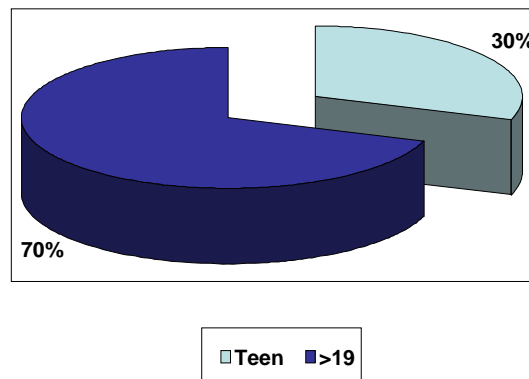
Non-Marital Births Caroline County 1945-2003

Year	Number of Live Births			Number of NM Births			Percent of NM Births		
	Total	White	Black	Total	White	Black	Total	White	Black
1945	292	96	196	34	3	31	11.6%	3.2%	15.8%
1980	283	175	108	63	12	51	22.2%	6.9%	47.2%
2003	311	218	87	125	64	59	40.2%	29.4%	67.8%

The Caroline County female teen pregnancy rate of 29.2 per 1,000 female teens is slightly higher than the state rate of 27.4 in 2004. This difference is primarily due to the very high rate of teen pregnancy among those who are 18-19 years old with a teen pregnancy rate in this age group of 152.5 as compared to the state rate of 96.8 per 1,000 female teens. Teens represent 21 percent of the non-marital births. Of the 274 Caroline County women over 20 years old who gave live birth to a baby in 2003, 99 (36 percent) occurred outside of marriage.

In the VARA survey, 24% of the teens said, when asked about sex before marriage, that it “is not acceptable behavior in the opinion of most people in our community,” 61% reported they thought it was “not encouraged, but is acceptable behavior in the opinion of most people in our community;” and only 16% said that it was “encouraged by most everyone in our community.” When asked about teen pregnancy, 50% said that it “is not acceptable behavior in the opinion of most people in our community,” 46% said they thought it was “not encouraged, but is acceptable behavior in the opinion of most people in our community,” and only 5% said that it was “encouraged by most everyone in our community.” As many as 55% of Caroline’s teens said they had had sexual intercourse with the percentage of teens reporting intercourse increasing with the increasing grade level. Reports ranged from 44% to 77%. Of those who reported having had sex, 20% had their first experience at or before age 12 and 55% said they had their first experience between the ages of 13 and 15.

Most (70%) non-marital births in Caroline County are to women 20 years or older



Research has shown that non-marital births increase the risks relating to health and socio-economic problems. Unmarried mothers show a reduction in seeking prenatal care in the first two trimesters, correlating to higher infant mortality rates and lower birth weights (Waite, 1995). Such research findings are evidenced by Virginia statistics that show infants born to unmarried mothers had low birth weights 11.4 percent of the time versus 6.2 percent of those born to married mothers in 1997. Half of the 711 infant

deaths in 1997 occurred to unmarried mothers. This percentage is significantly higher than the 29.3 percent of all births to unmarried mothers that same year. Unmarried mothers enter into prenatal care late in greater proportions as well. In 1998, 29 percent of unmarried mothers in Virginia entered into prenatal care in the second trimester or later versus over 90 percent of married mothers entering into prenatal care in the first trimester. This means that three out of ten unmarried mothers started care late or not at all.

Non-marital births contribute to the decay of the basic social unit that is to pass on the family values and cultural practices. Family stability and function has a significant impact on health and social outcomes for children, women, and families. Single mothers are twice as likely as married mothers to raise a child in poverty. Children are more likely to display emotional and social behavioral problems when a father is lacking from the home.

The National Healthy Marriage Initiative (HMI), emanating from the U.S. Department of Children and Family notes that research suggests all things being equal, children who grow up in healthy, married, two-parent families do better on a host of outcomes than those who do not. Further, many social problems affecting children, families, and communities could be prevented if more children grew up in healthy, married families.

Non-marital births have tremendous societal impact. Researchers have found many benefits for communities when they have a higher percentage of couples in healthy marriages, compared to unhealthy marriages, including the following:

1. Higher rates of physically healthy citizens
2. Higher rates of emotionally healthy citizens
3. Higher rates of educated citizens
4. Lower domestic violence rates
5. Lower crime statistics
6. Lower teen pregnancy rates
7. Lower rates of juvenile delinquency
8. Higher rates of home ownership
9. Lower rates of migration
10. Higher property values
11. Decreased need for social services

Non-marital births are associated with other health problems and other youth related concerns such as substance abuse, teen pregnancy, and criminal activity. Children of non-marital birth are also statistically more likely to display violence against women and to divorce later in life (Blakenhorn, 1996). Other risk factors that are evidenced are higher incidences of substance abuse among unmarried women, increased dependence on welfare systems, increased likelihood for child abuse/neglect, and the lack of family unit and its correlation to maladaptive juvenile behavior in adolescence (Waite 1995, Gallagher, 1999). In 1997, almost 60 percent of Virginia's births were to unmarried

mothers and were Medicaid-dependent. Also, the majority of juvenile offenders came from single-parent households. In 1998, Virginia had 9,816 children of all ages found by the Department of Social Services to be abused or neglected. Thirty-six of these children died as a result of the abuse or neglect. A disproportionate number of abused/neglected children were found in one-parent (40 percent) households and among black children (40 percent).

Cohabitation outside of marriage also poses significant risk factors to women and children. Between 1970 and 1997, the number of unmarried couples living together in the United States increased from about 500,000 to almost 4.0 million (Popenoe & Whitehead, 1999). Approximately 40 percent of households now contain children living in single parent, never-married households (Rodriguez, 1998). These children are more likely than children born to married couples to present with cognitive or behavioral disorders. These disorders include: decreased academic achievement, truancy, depression, delinquency, and substance abuse (Genius & Paolucci, 1999). These children are also at greater risk for impaired peer relationships and teen pregnancy.

Women cohabitating outside of marriage report a higher incidence of domestic violence and lower levels of happiness than do married women. Empirical evidence suggests that marriages, in which cohabitation prior to marriage is evidenced, are 50 percent more likely to end in divorce than couples who married without prior cohabitation (Rodriguez, 1998).

TARGET AUDIENCE

Though 75 percent of non-marital births occurred to those females 20 years old and above, strategies to address this issue must be directed toward the adolescent and adult population.

CAUSES AND CONTRIBUTING FACTORS:

A number of causes and contributors to non-marital births were identified by the Commission.

1. Cultural practices that impact non-marital births include:
 - a. Casual sex (hooking up) and friendship prostitution is occurring.
 - b. Casual sex by all groups is acceptable among some individuals.
 - c. Peer pressure to engage in non-marital sex is sometimes strong.
 - d. Sexual involvement starting earlier among youth.
 - e. TV/media programming and advertising promote acceptance.
 - f. Moral standards changing in the global society.

- g. Social acceptance of an increase in the lack of committed partnering and a decrease in responsibility and commitment by individuals is occurring.
 - h. Social acceptance of being single with children has occurred.
 - i. Youth are creating, through sexual activity, their own right-of-passage into adulthood.
 - j. There are fewer negative consequences today for non-marital births.
 - k. There is an increasing societal acceptance to father children outside of marriage.
 - l. No social consequence exists for non-marital births.
2. Low self-esteem causes individuals to engage in risky behaviors.
 3. Drugs and alcohol use are dis-inhibitors to promiscuous sex.
 4. Cohabitation is becoming more acceptable as a means to cover living expenses. Being single is not as important as it used to be and opens the door for “hooking up”.
 5. Generational changes thought to impact non-marital births include:
 - a. Increasing absence of the father.
 - b. Experiencing poor relationships with one’s own parents.
 - c. Having unmarried parents.
 - d. Having negative views of marriage.
 - e. Having negative views of parenting.
 - f. Having a negative view or lack of value of two-parent parenting. Single parenting is “OK”.
 6. Working parents leave children unattended leading to opportunities for teen sex, and teen pregnancy (90 percent of which are non-marital births).
 7. Lack of birth control education.
 8. Lack of education regarding parenting.
 9. Underestimates of what is involved in raising children.
 10. Economics: non-marital births create an opportunity for support through various government programs.
 11. Lack of parental involvement.
 12. Nothing to do.
 13. Rural versus urban values.
 14. Increased school dropout rates in the state.

15. Employment.
16. Education: more educated men and women are more likely to delay pregnancy.
17. Emphasis on having a baby before a girl/woman reaches a certain age.
18. Lack of life goals. Those with goals wait.
19. Male Factor:
 - a. Male competition regarding the number of girls they get pregnant.
 - b. Perception by some that men are not useful or necessary.
 - c. Men are not valued.
 - d. Consequences for the male are lacking.
 - e. Boys who are neglected—those abused by their father become abusers.
 - f. Men who have multiple partners.

RESOURCE ASSESSMENT

The major limitation in Caroline County in regards to programming/services to prevent non-marital births is the limited accountability and expectation that men should be responsible for their sexual behavior and the children they conceive. Resources that assist with the reduction of non-marital births and teen pregnancy prevention include:

1. The Virginia Department of Health's Family Planning Program, a federal grant program, serves 358 Caroline women, ages 12 – 45. This program provides funds for the purpose of preventing unwanted pregnancies by providing birth control counseling and birth control methods to women who wish not to become pregnant.
2. Salem Baptist Church provides a God neutral program focusing on drugs, alcohol, tobacco, and sexual abstinence for community youth and Caroline High School students. They also address teen pregnancy prevention by promoting *True Love Waits*. Other churches offer similar programs to their youth.

3. Salem Baptist Church also holds adult males accountable by participating in the “Promise Keepers” program that has a policy of valuing family and men honoring their marriage vows. They usually have from 12 to 35 men involved and have encouraged other churches to join the effort.
4. The school nurses, particularly at Caroline Middle School and Caroline High School, provide a significant amount of 1 on 1 counseling for girls who are seeking information.
5. The “Worth the Wait” abstinence education program has been offered to Caroline Middle and High School students as a after school program.

PROPOSED SOLUTIONS

The Advisory Commission recommends a comprehensive school and community based approach to address non-marital births in Caroline County. Solutions are in rank order, according to (1) most doable and (2) have the greatest impact on the community issue.

School-Based Strategies

The Commission recommends addressing in the School Wellness polices non-marital births by:

1. Having community leaders visit school administrators, principals, guidance counselors, and the School Board to promote the enhancement of the Family Life curriculum and using “Worth the Wait” or other approved curriculum focusing on abstinence.
2. Assuring those youth who become teen parents the opportunity to participate in such programs as the Rappahannock Area Community Services Board’s Teen Program for Parents.
3. Including in the character education requirements (i.e. courtesy, politeness, respect, and responsibility) an opportunity to build character and values.
4. Insuring that educators/facilitators are proficient in teaching Family Life/Sex Education/Abstinence.
5. Providing tutoring in strategic locations. Programs such as the Lunch Buddies Program should continue and businesses encouraged to participate.
6. Continuing to use the resources of the Rappahannock Area Community Services Board Teen Program for Parents which works with the teens who do

become pregnant or who already have children to improve their parenting skills.

Community-Based Strategies

To reach the community and those post-high school young adults who are experiencing non-marital births, the Commission recommends:

1. Conducting a community wide campaign targeting 18 to 25 year olds to encourage them to be abstinent from sexual activity; those who choose to be sexually active to use appropriate birth control; and educate them on the impact on the children when born in non-marital births.
2. Collaborating with Prevention Planning Partnership (PPP) and the Rappahannock Teen Abstinence Program (RAPTAP).
3. Establishing a comprehensive solution to non-marital births, including involvement of the faith community in abstinence campaigns, increasing fathers/fatherhood involvement, and encouraging the use of birth control/family planning methods to those who are sexually active. Partner with Salem Baptist Church in promoting their abstinence program by having repeat presentations.
4. Asking employers to provide information to their employees.
5. Training volunteers for a variety of mentoring programs such as Big Brothers, Big Sisters, Lunch Buddies, New Beginnings, and other programs for children.
6. Encouraging more parental involvement with youth by participating in all activities involving their children to include school activities, PTA's, church, and recreation.
7. Educating the public and faith based community by having qualified speakers give up-to-date statistics on out-of-wed-lock pregnancies with a public relations campaign and presentations.
8. Developing a Fatherhood program in Caroline County to encourage fathers to participate with their daughters in recreation, dances, sports, and church activities to strengthen father daughter relationships. Form partnerships with 4-H by assisting with the next father daughter dance.
9. Encouraging all persons that are sexually active to use birth control/ family planning methods to prevent sexually transmitted diseases and possible pregnancy. Provide clinic/medical services through the public and private sector with private/local physicians and/or Health Department services.

10. Continuing to provide the monthly parenting classes that enhance and help build self-esteem. Included in the curriculum are topics such as character building traits, morals, values, traditions, and rituals.
11. Providing safe places for after-school activities utilizing Parks and Recreation Programs, Girl Scouts, Boy Scouts, Big Brothers and Big Sisters, and other appropriate youth groups/activities.
12. Collaborating with key organizations such as Prevention Planning Partnership (PPP), Rappahannock Area Teen Abstinence Program (RAPPTAP), Office on Youth, Caroline's Promise, and the Rappahannock Area Community Services Board to increase the number of opportunities for youth to be involved in appropriate activities.

CHAPTER IV

LACK OF HEALTH INSURANCE AND ACCESS TO MEDICAL CARE— CONSIDERED THE NO 4 PRIORITY

DEFINITION OF HEALTH INSURANCE AND ACCESS TO MEDICAL CARE

The possession of health insurance is considered a means of assuring payment for medical related events. Thus, the lack of health insurance is viewed in broad terms by the Commission as having the lack of resources to purchase medical care. The lack of health insurance is a major reason why citizens in Caroline County lack access to medical care and, in general, suffer poorer health outcomes. Due to the cost of medical care today, many can not afford out of pocket expenses related to medical services leading to increase illness, suffering, and premature death.

Health Insurance is generally gained by some type of contract arrangement that requires a group (i.e. employer) or individual recipient of the insurance to make certain agreed upon payments (premiums, co-payments, deductibles) in exchange for the insurance coverage for a given period of time. Health insurance includes both private and public resources; commercially available through employment, self purchased plans, Medicaid and Medicare. Affordability of insurance includes all related costs including premium costs, co-payments, and deductibles.

The Commission includes in its definition of medical care both curative and preventative care provided by licensed health care providers, access to affordable medications, and other medical related necessities such as diagnostic and laboratory testing.

Due to the relative lack of health care providers, Caroline County is defined as a primary care, dental, and mental health Health Professions Shortage Area (HPSA) under the U.S. Public Health Service Act. A HPSA is a federal designation of a geographic area which meets the criteria for needing additional health care services. It is based on the availability of health professional resources within a defined service area. This designation qualifies the County for placement of health care providers under special pay-back programs related to health profession training.

Caroline County is also defined as a Medically Underserved Area (MUA). This designation qualifies the County to compete for federal funds designated for health care services in underserved areas.

WHY ACCESS TO HEALTH INSURANCE AND MEDICAL CARE IS CONSIDERED THE NO. 4 PRIORITY

The Commission considers lack of health insurance and access to medical care a priority issue as health insurance coverage is related to one's ability to purchase curative and preventive care and medications. The lack of these resources is considered a major reason why citizens in Caroline County lack access to medical care and, in general, suffer poorer health outcomes. Due to the cost of medical care today, many can not afford out-of-pocket expenses related to medical services leading to increased illness, suffering, and premature death.

TARGET AUDIENCE

The uninsured rate in Caroline County is 17.2 percent (over 4,000 citizens) as compared to the State rate of 14.9 percent. (Reference: 2001 estimates from the Virginia Centers for Healthy Communities) Many others have limited or no dental, pharmaceutical, or behavioral health coverage.

The majority of people without health insurance are low income and ethnic minorities. People with low incomes, those with income at or below 200 percent of Federal Poverty Level (e.g. \$37,700 for a family of four), are nearly twice as likely to be uninsured as compared with people at higher income levels. (Virginia Health Care Foundation 2001 Health Access Survey) However, most (77 percent) uninsured individuals work either full or part-time. Nearly all people without health insurance are under the age of 65. The Medicare program provides health insurance for most people aged 65 and over. Yet, having Medicare does not assure that there is a provider within reasonable driving distance (accessible). In addition, Medicare recipients have significant out-of-pocket expenses related to medications that are not covered by their insurance.

Percent Uninsured Non Elderly by Age, 2002-2003

Age	Virginia	United States
Children, age 18 or under	11%	12%
Adults, 19-64	17%	20%

Today, it is estimated that there are 26,000 children in Virginia who are uninsured, but eligible for state-sponsored health insurance. A majority of the uninsured are ethnic minorities.

Percent Uninsured non Elderly by Ethnicity

Ethnicity	Virginia	United States
Hispanic	48%	20%
Black	20%	21%
White	11%	13%

Sources: Urban Institute and Kaiser Commission on Medicaid and the Uninsured estimates based on pooled March 2003 and 2004 Current Population Surveys. Total US numbers are based on March 2004 estimates. (link here to www.kkf.org - state health facts, Virginia page)

The illegal alien population, primarily Hispanic from Mexico, Central, and South America is another target group as they have no health insurance. They do not qualify for Medicaid as they are not legal citizens and suffer from several barriers to accessing quality medical care due to language, confusion about payments, and options to develop a payment plan. Thus they limit their access to medical care themselves. They just don't go for medical care.

The elderly is another target group due to the frequency of need for medical services and the intensity of the care needed. African Americans are considered a special target group due to significant health disparities and, in some cases, the lack of trust by older individuals in the health care system. The working poor also need additional resources as they do not have the resources to pay for health insurance or for out-of-pocket expenses related to health care.

CAUSES AND CONTRIBUTING FACTORS

The causes and contributors to people lacking health insurance and medical care are numerous and go beyond the scope of this report. However, there are some that impact Caroline residents more than others. Lack of employment prevents many from having the resources to secure coverage. The unemployment rate in Caroline County was 4.8 percent in 2003 as compared to the State rate of 4.1 percent. (Reference: Voices for Virginia Children website, Cindy Hetzel, Director of Research.) Also contributing to the lack of coverage is the type of employment in Caroline County. Many employers are less likely to provide health coverage than in urban areas.

Citizens living at or below the poverty level in Caroline County are 10.6 percent as compared to the state at 9.6 percent in 2001. (Reference: Virginia Center for Healthy Communities website) As many as 8.2 percent of the Caroline population received health insurance through Medicaid as compared to 7.0 statewide in 2001. (Reference: Virginia Center for Healthy Communities website)

It is estimated that as many as 28.7 percent of the population are living below 200 percent of the Federal Poverty Level (FPL). The fact that there is a significant disparity between the populations below 100 percent FPL (9.4 percent) and below 200 percent FPL (28.7 percent) reflects the high number of “working poor” within the county.

There is a well documented lack of medical providers in Caroline. There are 7 physicians in the County with 5.7 FTEs of primary care services. Data is based on the Department of Health Professions licensing database and a telephone survey conducted during November 2005 by the Virginia Department of Health Office of Health Policy and Planning.

Using the 2000 census data, with a resident civilian population of 21,562, the Caroline population to physician ratio is 3718:1. Caroline County exceeds the 3500:1 population to physician ratio required for a geographic primary care Health Professions Shortage Area. As noted above, this lack of health care providers establishes Caroline County as a Health Professions Shortage Area (HPSA) as well as a Medically

Underserved Area (MUA). The movement toward physician specialization over the last 30 years resulting in fewer primary care physicians is considered a contributor to this lack of medical providers in Caroline County.

The Caroline County Health Department provided medical services with 121 prenatal care visits, 358 family planning visits, and 484 immunization visits, and treatment of sexually transmitted diseases for all Caroline citizens who request these services.

Many citizens have limited transportation options and thus limited access to jobs that may require one to travel significant distances or to medical care. This results in limited health care for those who may need it most.

Lack of literacy and education often contribute to the lack of understanding of the need to seek care. The level 1 literacy rate (very low functioning) is 28 percent in Caroline County as compared to 19 percent statewide in 1990. (Reference: Voices for Virginia's Children website.) Low education and literacy contribute to health status for multiple reasons including limiting one's ability to read and understand how they may improve their own health, limited job, options and limited access to health insurance coverage.

Medicaid eligibility criteria are limiting individuals who need medical care. Medicaid eligibility criteria are considered too low. Thus many who work may not be eligible for Medicaid, yet their employer may not be providing them health insurance coverage and they can not afford health insurance premiums or out-of-pocket expenses related to health care services.

Lack of knowledge and attitude about health care, doctors, etc. prevent some individuals from seeking care. The Commission considers the lack of knowledge and some negative attitudes about the health care system, lack of understanding how health insurance works in general, costs and use of one's own health insurance, health instructions, and use of pharmaceuticals and how to access doctors as a self induced contributor to the lack of access to medical care.

Medicare and Medicaid recipients don't know what to ask for when seeking care. Some people just do not go to seek medical care because of their naivety about benefits of quality medical care and the confusion created about the costs, instructions given, etc.

Many private insurers do not pay for some or all medications. This puts a significant out-of-pocket demand on individuals to pay the cost of their medications. In many cases, these costs are much greater than the costs of the medical care received. Many individuals do not have prescriptions filled because the cost is too great.

There are many issues that are unique to rural communities. The Commission believes that these special characteristics of the rural area of Caroline County limit access

to health care. All the factors noted above impact rural areas greater than urban or suburban areas.

PROPOSED SOLUTIONS

Solutions are in rank order, according to: (1) being the most doable and (2) having the greatest impact on the community issue.

School-Based Strategies

Since children are dis-portionally impacted by the lack of health insurance and because schools have a large part of the audience without insurance and access to medical care, the Commission recommends that the current school based health clinics be expanded to include a nurse practitioner under the supervision of the local health department. This clinic would be to provide basic health care services and prescription support. Teens that are sexually active and desire birth control would be referred to other sources.

Community-Based Strategies

Community involvement at many levels will contribute greatly to the solutions for the lack of health insurance and access to medial care. The Commission recommends that consideration be given to:

1. Securing funding for a health center by:
 - a. Encouraging local government officials to seek and accept proffers from developers that include property and funds for a medical center and equipment to be located in south-central Caroline County and staffed with primary care providers.
 - b. Asking Hospital Corporation of America (HCA) to plan when building a hospital in the Massaponax area to include a primary care medical center in Caroline
 - c. Expanding the Community Services Board building project on Highway 207 to include a primary care medical center in partnership with the Community Services Board, the County, the contractor, medical suppliers, and other interested stakeholders.
 - d. Making an effort to have the Caroline County Health Department facility be developed into a medical center, seeking federally qualified health

center (FQHC) status; and securing Community Health Access Project funds and foundation funds to integrate current public health clinical services into a primary care model of service delivery using a mix of primary care providers.

- e. Making an effort to attract culturally competent, preferably African-American physicians, to establish a medical practice in the Dawn area of Caroline County and include a Hispanic physician to reach other segments of the population.
2. Encouraging decision makers to work out a plan so that area medical providers, including those affiliated with Medicorp, will accept major insurance provider reimbursement.
 3. Requesting Mary Washington Hospital and Bons Secours to expand their mobile health care services to establish frequent, consistent schedules in Caroline County with a consistent set of providers.
 4. Having County officials seek assistance from Memorial Regional Memorial Hospital in Hanover County to expand services to Caroline residents.
 5. Improving access to medications could include:
 - a. Asking all pharmacy providers in Caroline County to participate in the Pharmacy Connection Program and expanding outreach efforts to inform county citizens of the program's availability.
 - b. Making an effort to increase the number of pharmacists working in the private sector in Caroline County.
 - c. Making an effort to expand access to affordable medications through partnership with the Pharmacy Connection Project with the United Way and Medicorp MAP program.
 6. Asking area employers to expand health insurance coverage for their employees, including coverage of pharmaceuticals.
 7. Encouraging County officials to work with the Medicorp physician recruitment office and the Virginia Department of Health Office of Primary Care to attract primary care physicians to Caroline County.
 8. Asking agencies working with individuals who qualify for Medicaid and FAMIS to expand their efforts in Medicaid and FAMIS eligibility outreach.

APPENDIX 1

HEALTH ADVISORY COMMISSION MEMBERS

Health Advisory Commission Members

Percy Ashcraft
County Administration

Jennifer Presley
Caroline Health Department

Rebecca Beale
Caroline Co. Public Schools

Rebecca Simes
Caroline Pediatrics

Adelaide Smith Buckner
(Medicorp Health System)

Donald Stern
Rapp. Health District

Tammi Coleman
Healthy Families

Kristen Taylor
Caroline's Promise

Chris Corbin
Community Representative

Karen Vossberg
Caroline County Public Schools

Caroline Fuller
Community Representative

Pat Wright
Community Representative

Cynthia Green
Caroline Department of Social Services

Eletta Hansen /Brenda Mcallister
Bon Secours

Beth Jimenez
Virginia Cooperative Extension Office

Lynn Lenahan
Community Representative

Kathleen Lewis
Free Lance Star

Bunny Oliff
Community Representative

APPENDIX 2

INSTITUTE OF MEDICINE COMMUNITY HEALTH IMPROVEMENT PROCESS

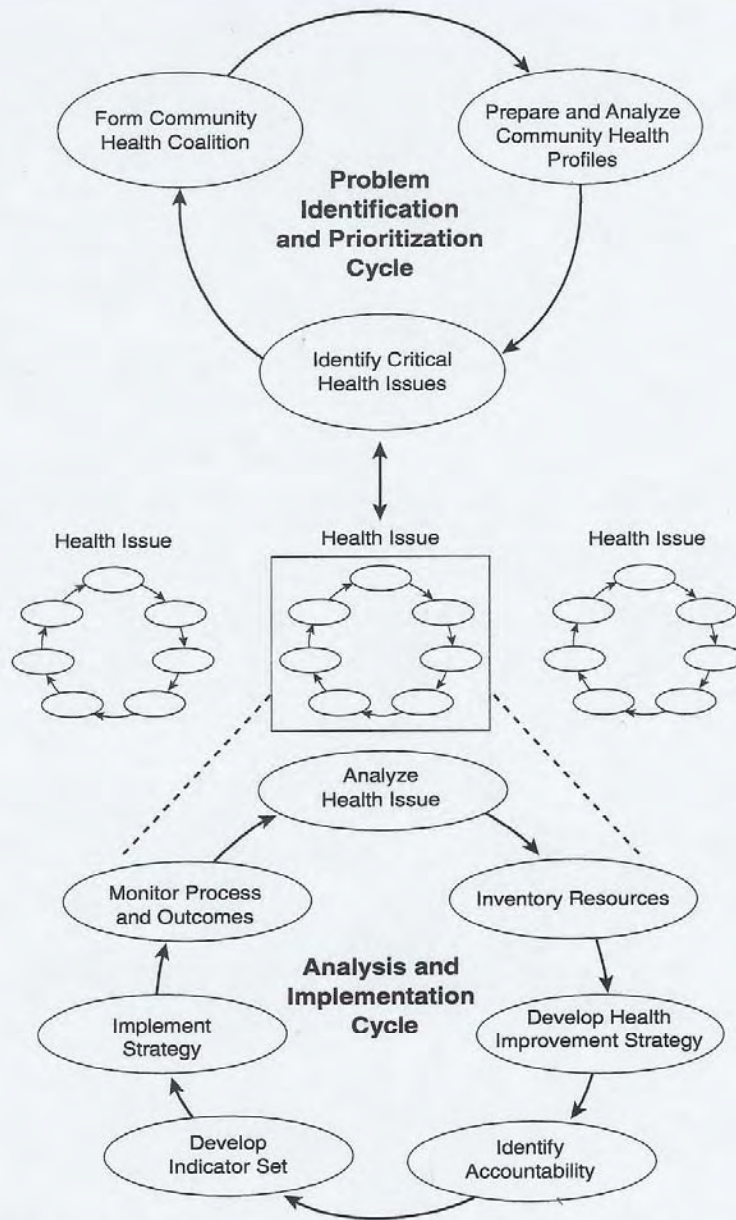


FIGURE 2 The community health improvement process (CHIP).

APPENDIX 3

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