Reproductive Health

Maternal health is an important predictor of newborn health and well-being, and addressing women's health is essential to improving birth outcomes. Many factors affect women's health, including individual health behaviors, access to appropriate care, and socioeconomic factors. Focusing on the health of a woman *before* her pregnancy is essential to the reduction of poor birth outcomes such as low birthweight, pre-term birth, and infant death.[1]

This chapter includes:

- Pregnancy, fertility and abortion
- Access to birth control
- Prenatal care
- Substance abuse during and around pregnancy
- Infant mortality

Section 7.01 *Pregnancy, fertility and abortion*

Preconception health is a woman's health before she becomes pregnant. It means knowing how health conditions and risk factors could affect a woman or her unborn baby if she becomes pregnant. For example, some foods, habits, and medicines can harm a baby — even before he or she is conceived.[2]

Every woman should be thinking about her health whether or not she is planning pregnancy. One reason is that about half of all pregnancies are not planned. Unplanned pregnancies are at greater risk of preterm birth and low birth weight babies. Another reason is that, despite important advances in medicine and prenatal care, about 1 in 8 babies is born too early. Researchers are trying to find out why and how to prevent preterm birth. Experts agree that women need to be healthier before becoming pregnant.[3]

Overview[4]

The unintended pregnancy rate in the United States and particularly, in North Carolina and Durham County, continues to be high.

The term *unintended pregnancy* refers to a pregnancy that was mistimed or unwanted at the time of conception. Nearly half of all pregnancies in North Carolina are unintended. Unintended pregnancies can result in serious health, social and economic consequences for women, families and communities. It is associated with delayed entry into prenatal care as well as low-birth weight babies and poor maternal nutrition. Additionally, women with unintended pregnancies are more likely to smoke and less likely to breastfeed.

Although the majority of unintended pregnancies occur among adults, most teen pregnancies are unintended. While more than 3 out of 4 unintended pregnancies are among women 20 years and older, the risk of unintended pregnancy is higher among younger women.

Healthy NC 2020 Objective

Sexually Transmitted Diseases and Unintended Pregnancies

Healthy NC 2020 Objective[5]	Current Durham	Current NC	2020 Target
1. Decrease the percentage of pregnancies that are unintended.	36.5%[6] (2006-08)[i]	52.7 %[7] (2006-08)	30.9%

[i] This data is only available by P.C. Region. P.C. Region IV (Northeast counties) includes: Caswell, Alamance, Orange, Chatham, Lee, Person, Durham, Granville, Vance, Warren, Franklin, Wake and Johnston.

Secondary Data: *Major findings*

Figure 7.01(a) gives an overview of North Carolina's and Durham County's 2009 pregnancy, fertility and abortion rates (per 1,000 population) by age group.[8] The pregnancy rate is much higher in Durham County among ages 15-19 and among women ages 30 and older. The fertility rate is also much higher in Durham County among women 30 and older. In Durham County, the rate of abortions is higher among all ages compared to North Carolina; among 15-19 year olds, it is almost twice as high.

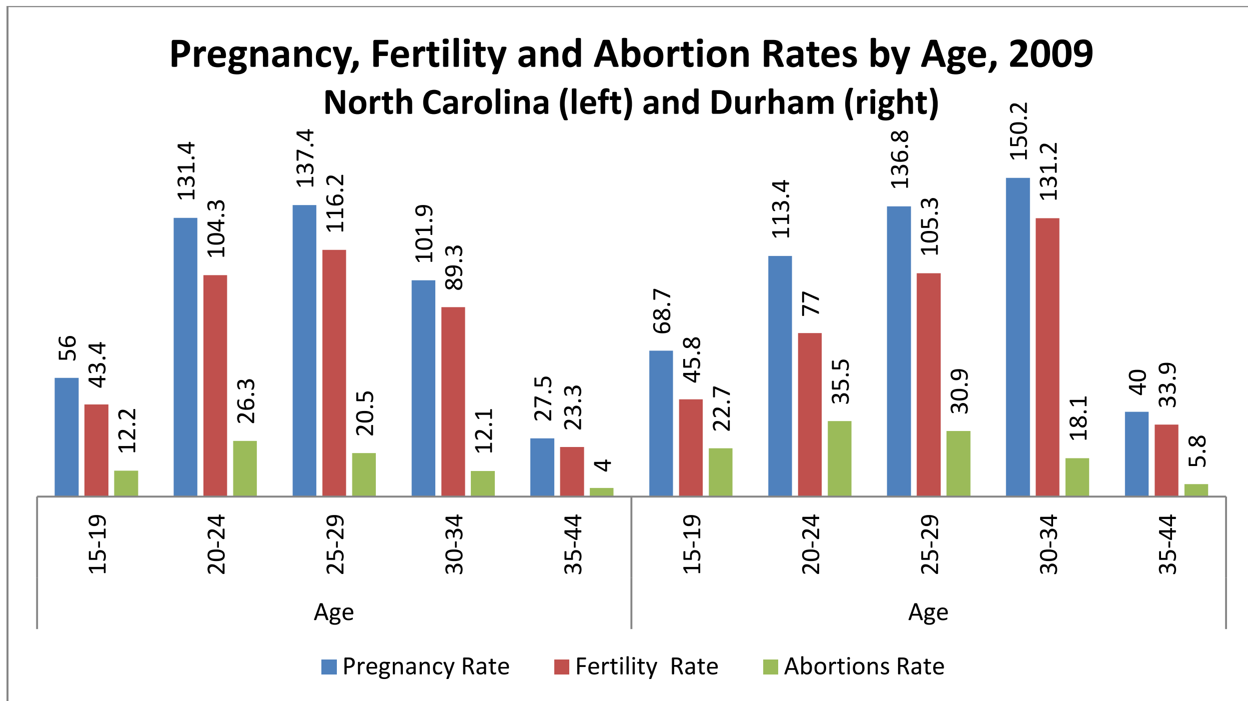


Figure 7.01(a) Pregnancy, fertility and abortion rates by age, 2009

- 56 of every 1,000 teen girls ages 15 to 19 in North Carolina became pregnant in 2009. The new rate reflects a 4.4% *decrease* from the 2008 rate of 58.6 per 1,000 girls.[9]
- 68.7 of every 1,000 Durham County teen girls ages 15 to 19 became pregnant in 2009. There were 597 pregnancies among ages 15-19 and six pregnancies among ages 10-14.[10]
- In 2009, Durham moved from the 44th highest teen pregnancy rate in North Carolina to the 24th highest rate.

Table 7.01(b) summarizes pregnancy outcomes for North Carolina girls, ages 10-19 over a 5-year period, including pregnancies, live births, abortion and fetal deaths. For the past 5 years, 20-30 % of pregnancies have resulted in abortions.

Table 7.01(b)

NC Pregnancies and Pregnancy Outcomes for Adolescent Girls Ages 10 to 19, 2005-09[11]

Year	Pregnancies	Live Births	Abortions	Fetal Deaths
2009	18,466	14,269	4,097	100
2008	19,774	15,363	4,287	124
2007	20,019	15,299	4,598	122
2006	19,597	14,931	4,541	125
2005	18,727	14,175	4,439	113

Figure 7.01(c) illustrates Durham County's teen pregnancy rate by race from 2007 – 2009. Black teens have consistently had higher pregnancy rates than white teens and the overall Durham County and North Carolina rates. Figure 7.01(d) is the same chart, but it includes pregnancy rates among Durham County Hispanic teens. Hispanic teens in Durham County have a pregnancy rate that is 2.6 times the county rate, but this is a marked improvement from 2007.

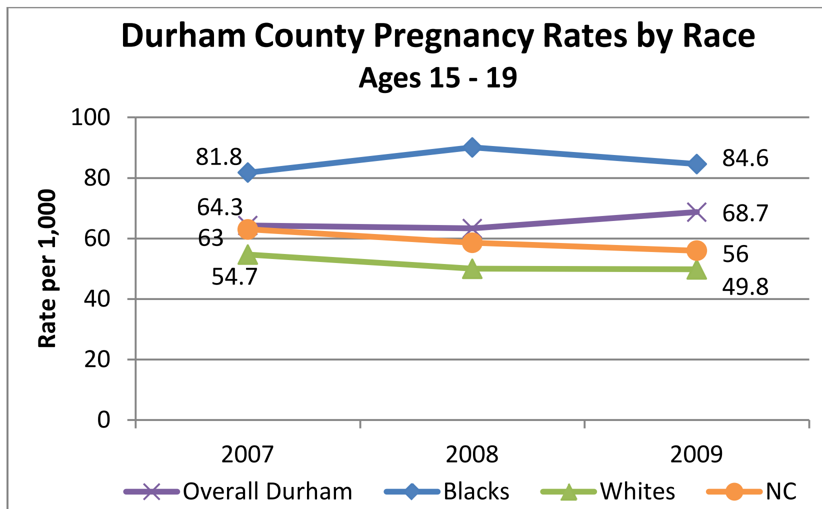


Figure 7.01(c) Durham County pregnancy rates by race, ages 15-19[12]

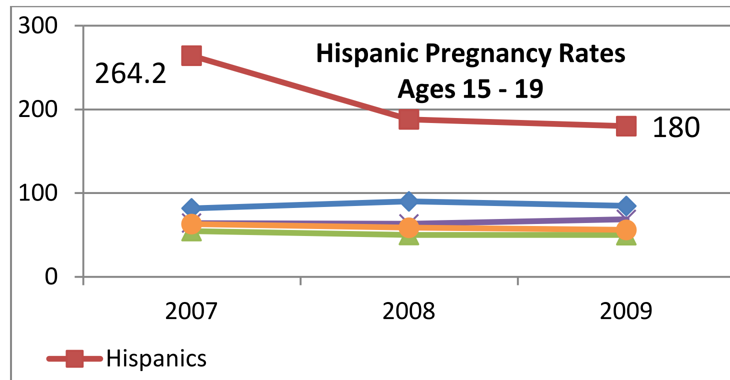


Figure 7.01(d) Durham County Hispanic teen pregnancy rates[13]

- Teen pregnancy rates in North Carolina have consistently decreased since 1991 following a spike in the late 1980s. Pregnancy rates fell across all age, racial and ethnic categories, as well as in all but 37 North Carolina counties. Abortion rates also decreased in all categories.[14]

- Despite the positive trends in North Carolina, significant disparities still exist between racial and ethnic groups. The 2009 pregnancy rate among North Carolina white teens was 45.4 per 1,000 girls, while the corresponding rate for minority teens was 74.3. The rate specifically for Hispanic teens was 118.4. In 2009, North Carolina's underserved rural counties typically saw higher rates of teen pregnancy than urban counties.[15]

- While the drop in teen pregnancy rates has mimicked national trends, North Carolina still lags behind the rest of the nation. The latest state rankings by The National Campaign to Prevent Teen and Unplanned Pregnancy show North Carolina has the 14th highest teen pregnancy rate.[16]

Primary Data

2010 Durham County Community Health Opinion Survey Results[17]

The Durham County Community Health Opinion Survey randomly selected Durham County households. (Details on survey data collection are in Chapter 1 and all survey results are in Appendix G.) One section of the survey asked respondents to look at several lists and rank their top three neighborhood concerns related to community issues, risky behaviors and health problems. For example, one question had a list of 23 community issues. Respondents were told, "Keeping in mind yourself and the people in your neighborhood, pick the community issues that have the greatest effect on the quality of life in Durham County. Please choose up to 3."

- Top three community issues: 19% of respondents chose positive teen activities and 16% chose dropping out of school
- Top three risky behaviors that individuals participate in that impact the community: 22% chose having unsafe sex
- Top three community health problems: 10.5% chose teenage pregnancy

2009 Youth Risk Behavior Survey[18]

The Youth Risk Behavior Survey (YRBS) was given to randomly selected classrooms of middle and high school students in Durham Public Schools. The YRBS is a CDC survey designed to monitor priority risk behaviors related to tobacco use, unhealthy diet, inadequate physical activity, alcohol and other drug use, unintended pregnancy and sexually transmitted diseases, and unintentional injuries and violence. The full results are available at www.healthydurham.org or at these links: full report summary reports

Middle School:

- Durham middle schools students are more likely to receive sexual health education than students in North Carolina.

High School:

Figure 7.01(e) summarizes some of the YRBS survey data for Durham County, Central Region and North Carolina high school students.

- 55.6 % of Durham County high school students reported ever having sexual intercourse compared to 51% of North Carolina high school students.
- Of the students who reported ever having sexual intercourse, 40.4 % of Durham County high school had had sexual intercourse with one or more people in the past three months compared to 36.6% of North Carolina high school students.
- 20% of Durham County high school students reported sexual intercourse with four or more people during their lifetime compared to 15.7% of North Carolina high school students.

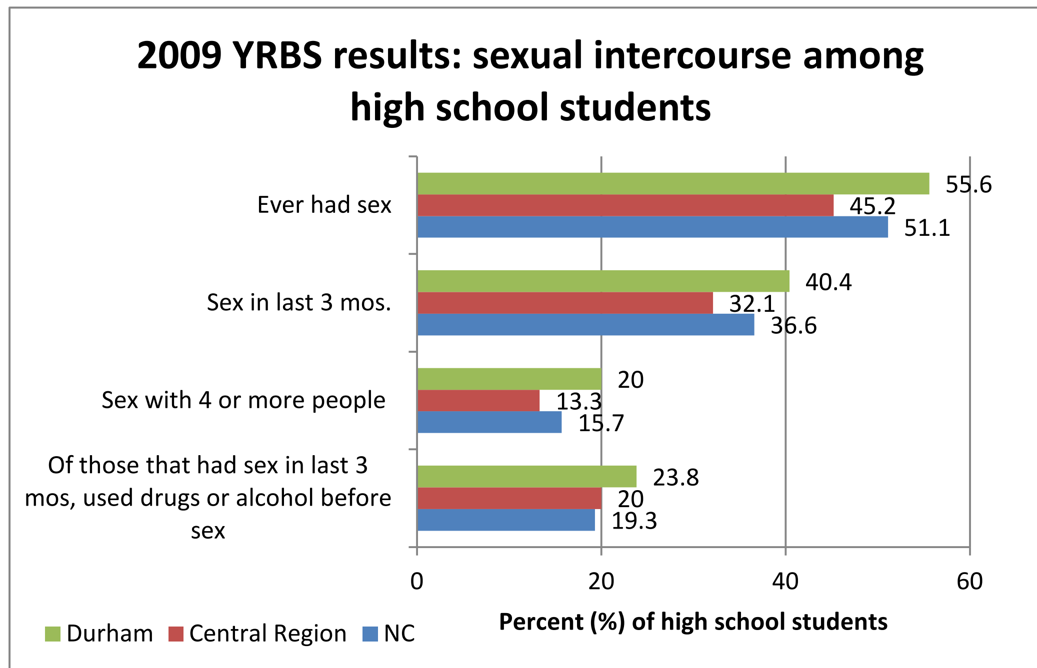


Figure 7.01 (e) 2009 YRBS results

Interpretations: *Disparities, gaps, emerging issues*

Durham County

- Racial disparities: In 2009, 86% of pregnant girls in Durham were African American or Hispanic.
- Repeat pregnancies: 31% of all adolescent pregnancies in 2009 were among girls ages 15-19 who had previously been pregnant.

North Carolina Pregnancy Risk Assessment Monitoring System (PRAMS)[19]

The North Carolina Pregnancy Risk Assessment Monitoring System (PRAMS), is a Centers for Disease Control and Prevention (CDC) initiative to reduce infant mortality and low birth weight. NC PRAMS is a random, stratified, monthly mail/telephone survey of North Carolina women who recently delivered a live-born infant. The PRAMS survey collects data on maternal behaviors and experiences before, during, and after pregnancy for a sample of North Carolina women. The data below is based on the responses of 4,355 mothers who delivered between January 1, 2006 and December 31, 2008 in the state of North Carolina and participated in the PRAMS survey two to four months after delivery. Specifically, it focuses on mothers who responded to the question, "Thinking back to just before you got pregnant, how did you feel about becoming pregnant?" Options for answers included, "I wanted to be pregnant sooner; I wanted to be pregnant later; I wanted to be pregnant then; I didn't want to be pregnant then or at any time in the future."

Unintended pregnancy: Education, income, race, age and marital status are all associated with unintended pregnancy. Women with less than a high school education are 1.6 times more likely to have an unintended pregnancy than women with greater than a high school education. Of those with an unintended pregnancy, 65.3% reported *other* as their marital status. In addition, as seen in Figure 7.01(f) African American women are 1.7 times more likely than white women to report their pregnancy was unintended (64.2% versus 37.8%).

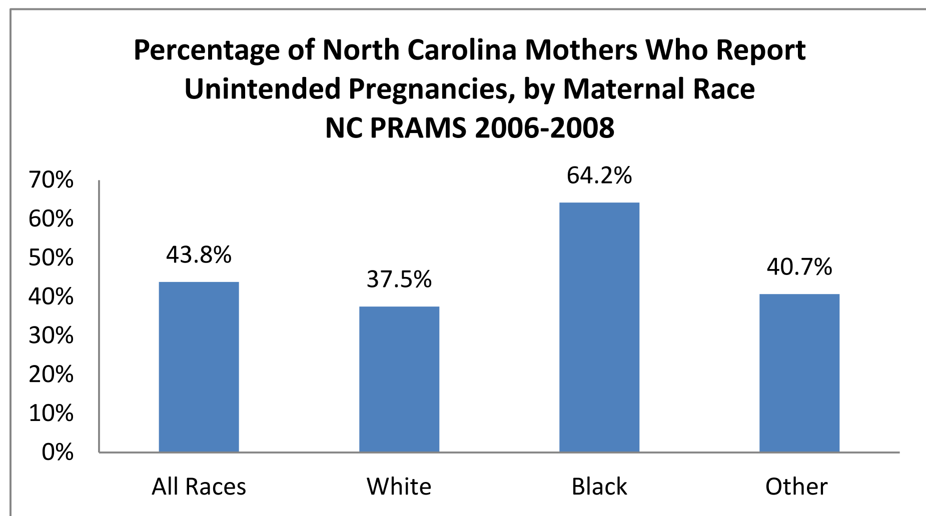
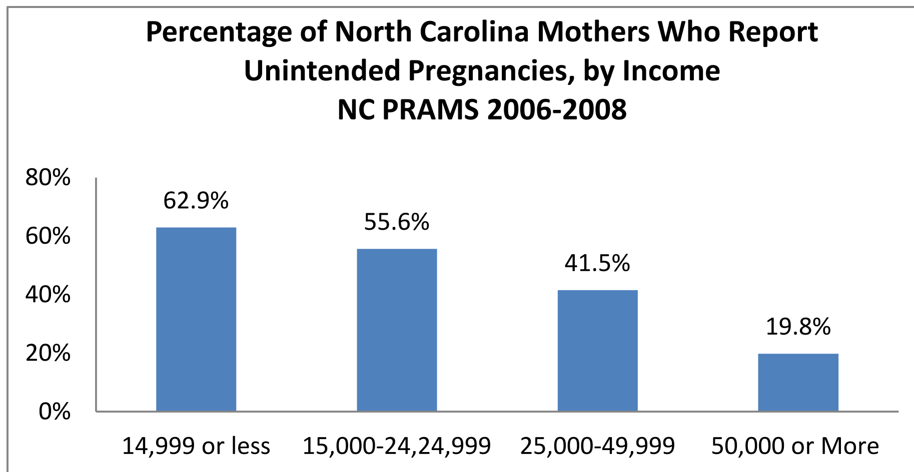


Figure 7.01 (f) Unintended pregnancies by race[20]



Women making less than $15,000 are 3.4 times more likely to have an unintended pregnancy compared to women making $50,000 or more.

Figure 7.01 (g) Unintended pregnancies by income[21]

Figure 7.01(h) shows that unintended pregnancies decrease as women get older.

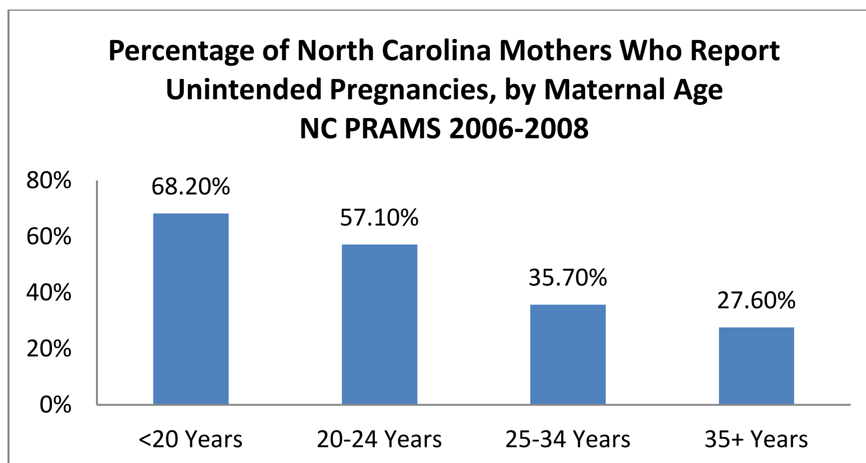


Figure 7.01 (h) Unintended pregnancies by maternal age[22]

Recommended Strategies

Table 7.01(c) **Evidence-based Resources and Promising Practices**[23]

Setting	Name and Website	Description
School	Postponing Sexual Involvement http://www.advocatesforyouth.org/storage/advfy/documents/sciencesuccess.pdf	Postponing Sexual Involvement is designed for use in eighth grade to augment course information on human sexuality, including contraceptive information.
School	Safer Choices http://www.advocatesforyouth.org/storage/advfy/documents/sciencesuccess.pdf	A two-year, HIV/STI and teen pregnancy prevention program with the primary goal of reducing unprotected sexual intercourse by encouraging abstinence among students who report having sex.
Community	Making Proud Choices! http://www.advocatesforyouth.org/storage/advfy/documents/sciencesuccess.pdf	This HIV risk reduction curriculum for urban, African American youth, ages 11 to 13, acknowledges that abstinence is the best choice.
Healthcare	Family Planning Services at Denver Metro Health Clinic http://www.naccho.org/topics/modelpractices/database/practice.cfm?PracticeID=104	Determine the effectiveness of initiating contraception in an STD clinic setting, the DMHC, in collaboration with the Colorado Department of Public Health and Environment's Women's Health Section (CDPHE), developed a Title X clinic at the STD clinic. The Title X clinic provides reproductive health care services to eligible women as part of their STD evaluation.

The following recommendations are from the North Carolina Prevention Action Plan:[24]

1) Ensure Students Receive Comprehensive Sexuality Education in North Carolina Public Schools (PRIORITY RECOMMENDATION)
- Local school boards should adopt an opt-out consent process to automatically enroll students in the comprehensive reproductive health and safety education program unless a parent or legal guardian specifically requests that their child not receive any or all of this education.

2) Expand the Availability of Family Planning for Low-income Families
- The North Carolina Division of Medical Assistance and Division of Public Health (DPH) should enhance access to family planning services for low-income families, including implementation of best practices for the Medicaid family planning waiver. The North Carolina General Assembly should appropriate $931,000 in recurring funds to DPH to purchase long acting contraceptives for low-income women who do not qualify for the Medicaid family planning waiver.

3) Continue and expand the Healthy Youth Act, which requires schools to provide 7th, 8th and 9th graders with medically accurate information on STD prevention, pregnancy prevention and healthy relationships.

4) Investigate and support implementation of science-based teen pregnancy prevention initiative. Refer to Office of Adolescent Health list of programs.

5) Identify funding sources to expand pregnancy prevention programs and sexual health services for adolescents and young adults.

Current Initiatives & Activities

- ***Durham County Health Department***
  The Family Planning Clinic offers several options for low-cost contraceptive services.

  Website: http://www.durhamcountync.gov/departments/phth/Community_Health_Ser.html#family planning
  Phone Number: (919) 560-7630

- ***Planned Parenthood of Central North Carolina***
  Professional staff provides high-quality, affordable sexual and reproductive health care for millions of women, men, and teens. Planned Parenthood of Central North Carolina provides Teen Voices and Joven a Joven Adolescent Pregnancy Prevention Programs. The programs follow a peer education model and are open to male and female adolescents 14-18 years old. The weekly sessions are three hours long and cover a broad range of adolescent health topics with a focus on sexual and reproductive health.

  Website: http://www.plannedparenthood.org/centralnc/local-education-training-2836.htm
  Phone Number: (919) 919-5402

- ***Department of Social Services (APP)***
  The **Adolescent Parenting Program** provides first time pregnant and parenting teens with support to prevent a second pregnancy, complete high school and prevent child abuse and neglect. Clients referred to this program are matched with an adult female volunteer through The Volunteer Center in a one-to-one relationship for at least a year.

  Website: http://www.durhamcountync.gov/departments/dssv/Family_Support/Community_Initiative.html

  Phone Number: (919) 560-8125

- ***DCAPP (Durham Coalition on Adolescent Pregnancy Prevention)***
  DCAPP is a non-profit organization with a mission to support, advocate, and develop strategies in our community that reduce adolescent pregnancy.

  Phone Number: (919) 560-7762

- ***T.E.A.S. (Together Everyone Accomplishes Something)***
  T.E.A.S is a five-year teenage pregnancy prevention program in which teens and their mentors are taught life skills education and information. They also participate in group activities, which will expose them to different life skills experiences. The teens are required to keep "Baby Think It Over", a baby simulator, for a designated period of time as well as participate in 20 hours of community service.

  Website: http://teasprogram.weebly.com/about-us.html
  Phone Number: (919) 560-7762

- **The Morning after Pill**

Available over the counter for any person age 17 years of age or older.

Section 7.02 *Access to birth control*

Overview

Access to birth control is about equality for women. Using birth control lets women plan when and whether to have a family. In fact, most women use birth control at some point in their lives.

The Title X Family Planning program ["Population Research and Voluntary Family Planning Programs" (Public Law 91-572)], was enacted in 1970 as Title X of the Public Health Service Act. Title X is the only federal grant program dedicated solely to providing individuals with comprehensive family planning and related preventive health services. The Title X program is designed to provide access to contraceptive services, supplies and information to all who want and need them. By law, priority is given to persons from low-income families.

In fiscal year 2010, Congress appropriated approximately $317 million for family planning activities supported under Title X. At least 90 percent of the appropriation is used for clinical family planning services as described in the statute and regulations (45 CFR Part 59).

Over the past 40 years, Title X family planning clinics have played a critical role in ensuring access to a broad range of family planning and related preventive health services for millions of low-income or uninsured individuals and others. In addition to contraceptive services and related counseling, Title X-supported clinics provide a number of related preventive health services such as: patient education and counseling; breast and pelvic examinations; breast and cervical cancer screening according to nationally recognized standards of care; sexually transmitted disease (STD) and Human Immunodeficiency Virus (HIV) prevention education, counseling, testing and referral; and pregnancy diagnosis and counseling. By law, Title X funds may not be used in programs where abortion is a method of family planning.

The Title X family planning program is intended to assist individuals in determining the number and spacing of their children. This promotes positive birth outcomes and healthy families. The education, counseling, and medical services available in Title X-funded clinic settings assist couples in achieving these goals.

Healthy NC 2020 Objective

There is not a Healthy NC 2020 Objective on Access to Birth Control.

Secondary Data: *Major findings*

In calendar year 2010, 90 Title X grantees provided family planning services to more than five million women and men through a network of more than 4,500 community-based clinics that include state and local health departments, tribal organizations, hospitals, university health centers, independent clinics, community health centers, faith-based organizations, and other public and private nonprofit agencies. In approximately 75% of U.S. counties, there is at least one clinic that receives Title X funds and provides services as required under the Title X statute.

The number of unintended pregnancies may be lessened as a wider range of birth control choices become available. This may also help decrease abortion rates and pregnancy-associated health risks. It is highly recommended by health experts in reproductive health field that women be offered and placed on the highest level of protection, which may be a long-acting reversible contraceptive that is more effective and has less chance of patient error. This will help decrease potential for unintended pregnancy while on a contraceptive method.[25]

Improved contraceptive choices, such as intrauterine devices (IUD's) are becoming highly popular. The IUD is as effective as tubal sterilization, but is less expensive, safer, more convenient and immediately reversible. Table 7.02 (a) summarizes some of the most popular birth control available.

Table 7.02 (a)

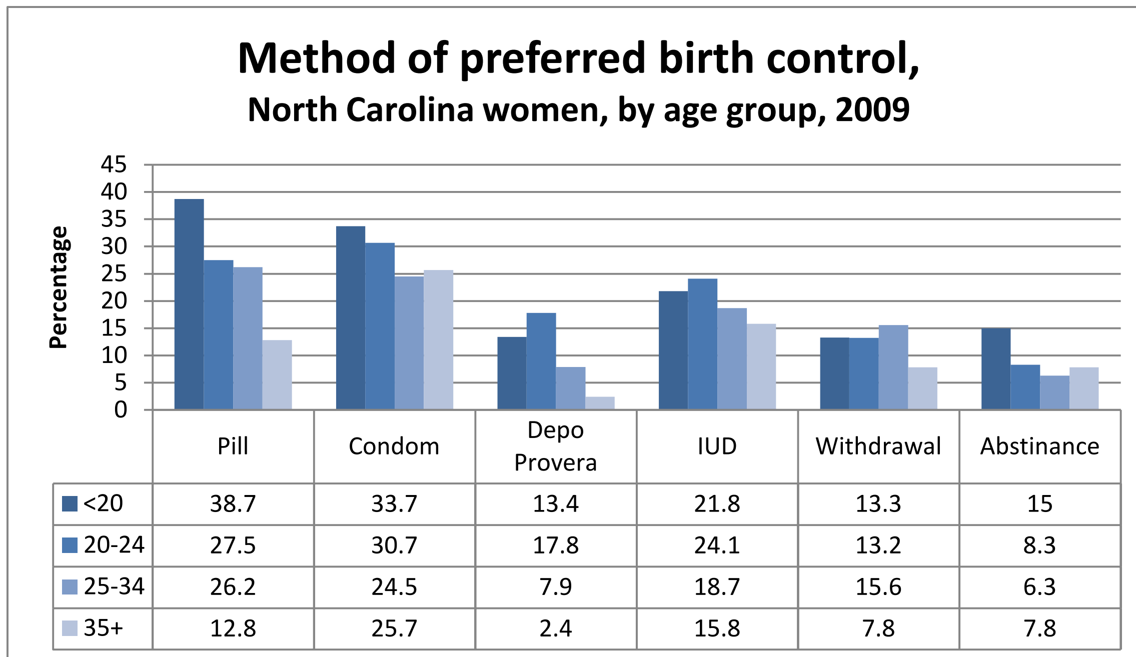
Current Birth Control Options	
• Abstinence	• IUD
• Cervical Ring	• Once a month shot
• Cervical Cap	• Pills (combined/ Mini)
• Condoms (Male and Female)	• Rhythm Method or Natural Family Planning
• Contraceptive Patch	• Shot once a month
• Depo-Provera (shot once every 3 months)	• Sponge
• Diaphragm	• Tubal Ligation
• Essure	• Vasectomy
• Implants	• Withdrawal

Primary Data

North Carolina Pregnancy Risk Assessment Monitoring System Survey Results: Contraception

The North Carolina Pregnancy Risk Assessment Monitoring System (PRAMS), is a Centers for Disease Control and Prevention (CDC) initiative to reduce infant mortality and low birth weight. NC PRAMS is a random, stratified, monthly mail/telephone survey of North Carolina women who recently delivered a live-born infant. The PRAMS survey collects data on maternal behaviors and experiences before, during, and after pregnancy for a sample of North Carolina women. This data is from 2009 and from a sample of 1,016 women across the state.

Figure 7.02(b) summarizes the responses to the following question by age group:
What kind of birth control are you or your husband or partner using now to keep from getting pregnant?



	Pill	Condom	Depo Provera	IUD	Withdrawal	Abstinance
<20	38.7	33.7	13.4	21.8	13.3	15
20-24	27.5	30.7	17.8	24.1	13.2	8.3
25-34	26.2	24.5	7.9	18.7	15.6	6.3
35+	12.8	25.7	2.4	15.8	7.8	7.8

Figure 7.02 (b) Method of preferred birth control[26]

The pill, condoms and IUDs, respectively, are the most popular choices for women trying to prevent a pregnancy. The youngest women by far prefer the pill while women over 35 years prefer condoms followed by IUDs.

2010 Durham County Community Health Opinion Survey Results[27]

The Durham County Community Health Opinion Survey randomly selected Durham County households. (Details on survey data collection are in Chapter 1 and all survey results are in Appendix G.)

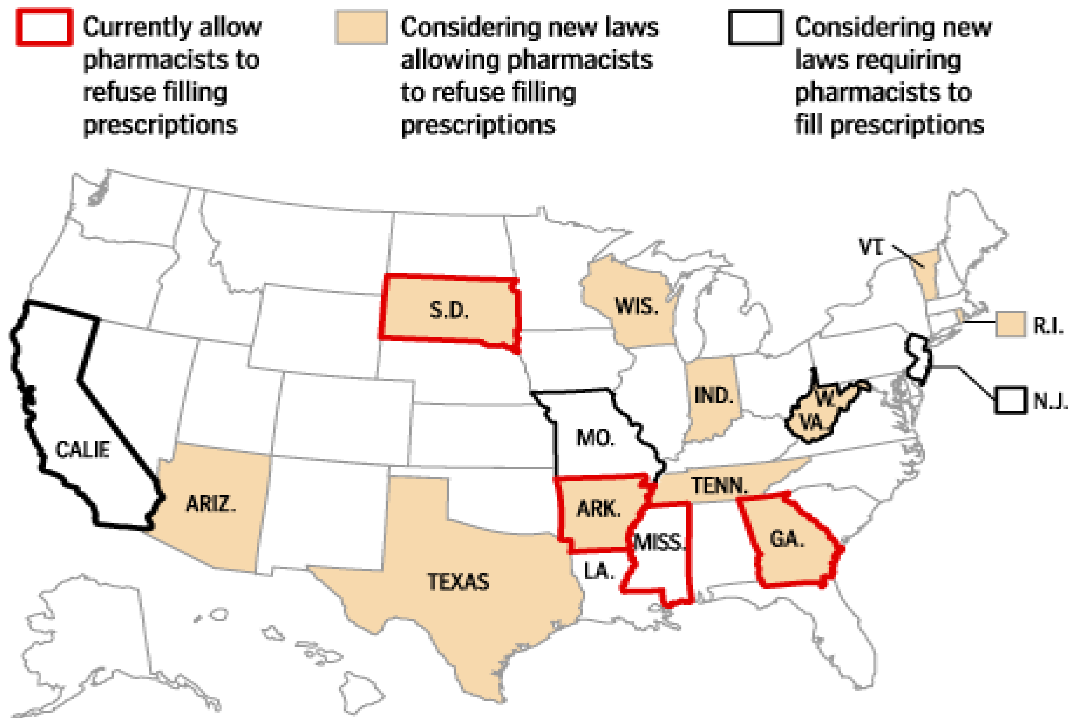
- 12 % of respondents reported having a problem filling a medically necessary prescription
- 35% report insurance did not cover what was needed
- 5% reported birth control as too expensive

Interpretations: *Disparities, gaps, emerging issues*

Essure is a permanent transcervical sterilization procedure for women developed by Conceptus Inc. It was approved for use in the United States on November 4, 2002. The benefits include: no hormones, surgery or down time to recover. The procedure can be performed in a doctor's office in 10 minutes. Most women, however, are unaware of this method of birth control.

A number of states have either passed laws or are considering laws that allow pharmacists to refuse to fill prescriptions, such as birth control and morning-after pills, that they feel violate their personal, moral or religious beliefs. Currently, North Carolina is not considering such a law as shown in Figure 7.02(c).

Figure 7.02(c)



Recommended Strategies

There are many ways to make sure that women get the birth control they need. Better access to birth control means fewer unintended pregnancies:

- Emergency contraception (EC) can prevent pregnancy if used up to five days after sex.
- Pharmacies should not be able to refuse to fill a woman's prescription for birth control.
- The government should make sure that low-income women can afford birth control at family-planning clinics.
- If an insurance company covers prescription drugs, it should cover prescription birth control.
- Pass legislation that will require pharmacies to provide access to and dispense birth control options regardless of religious or moral beliefs.
- Media Campaign for the Morning after Pill (Emergency Contraceptives).

If access to birth control methods is not a major obstacle, why are there so many unintended pregnancies? In "Unlocking the Contraceptive Conundrum," a literature review sponsored by the National Campaign to Prevent Teen and Unplanned Pregnancy in 2009, James Jaccard wrote

that many women are ambivalent about childbearing. This influences their decisions on acquiring birth control and consistent use of birth control. He recommends developing evidence-based best practices for contraceptive counseling and developing strategies for translating intentions into behaviors.

Current Initiatives & Activities

Residents of Durham County have several options for low-cost contraceptive services. The most widely used are the Family Planning Clinic at Durham County Health Department and Planned Parenthood of Central North Carolina in Durham. Both agencies accept Medicaid and both receive Title X funds. Title X is a federal grant program that makes it possible for these agencies to provide services on a sliding fee scale based on family size and income. There is also a grant funded family planning clinic at Duke University Medical Center that provides long-term contraception to postpartum women at low cost.

The Family Planning Medicaid Waiver "Be Smart" has been available in North Carolina for women 19 to 55 years and men 19 to 60 years with incomes up to 185% of the federal poverty level since 2005. This provides Medicaid to legal residents for family planning services. The program was set to end in 2010 but has been extended to June 30, 2011. N.C. Division of Medical Assistance has stated that the program will likely continue past that date in some form.

- ***Planned Parenthood of Central North Carolina***
  Professional staff provides high-quality, affordable sexual and reproductive health care for millions of women, men, and teens.

  Website: http://www.plannedparenthood.org/centralnc/
  Phone Number: (919) 919-5402

- ***Durham County Health Department***
  The Family Planning Clinic offers several options for low-cost contraceptive services.

  Website: http://www.durhamcountync.gov/departments/phth/Community_Health_Ser.html#far planning
  Phone Number: (919) 560-7630

Section 7.03 *Prenatal care*

Overview

Women who are pregnant should seek prenatal care with an obstetrician/gynecologist (OB/GYN), family practice doctor, a certified-nurse midwife or other health professional. Regular prenatal care helps to monitor a pregnancy and spot any potential health problems before they become serious. Some pregnant women may experience complications like gestational diabetes or preeclampsia, but with regular prenatal care, health issues can be better managed.

Providers may offer the following prenatal tests to ensure baby is growing and healthy. Some of these tests include:

- Amniocentesis (test for certain birth defects).
- Chorionic villus sampling or CVS (test for certain birth defects).
- Glucose screening (monitor blood sugar and test for gestational diabetes).
- Cystic fibrosis carrier screening (check for cystic fibrosis gene).
- Maternal blood screening (check for neural tube defects).

Healthy NC 2020 Objective

There is not a Healthy NC 2020 Objective for prenatal care.

Secondary Data: *Major findings*

The vast majority of women in Durham County access prenatal care. In 2000, 64 Durham mothers reported receiving no prenatal care, while in 2009 only 11 did not receive any prenatal care. Furthermore, the total number of births during this period increased from 3,768 to 4,423.[28] In Durham County, the initiation of prenatal care during the first trimester is fairly consistent across educational levels and race (ranging from 92% for none-or elementary education to 96% for 4 yr. college education.) However, in North Carolina, only 68% of women with an elementary education or less begin prenatal care during the first trimester.[29]

In Durham County, a mother's age does not predict when she begins prenatal care. In fact, 92% of women in all age groups (14 to 45+ years) initiated care during the first three months. This pattern is in sharp contrast to North Carolina data, which show only 83% of all ages (starting at age 11 years) initiated prenatal care during the first trimester.[30]

Timing of prenatal care, in addition to whether a woman receives any prenatal both impact birth weight. In Durham County, 36% or 4 of 11 of women with no prenatal care had low or very low birth weight babies. The number of very low and low birth weight babies drops to an average of 6% among women who received any prenatal care throughout their pregnancy. Table 7.03(a) summarizes birth outcomes among Durham County women in 2009 based on the month that prenatal care was initiated.

Table 7.03(a) **Durham County Resident Births by Month Prenatal Care Began and Birth Weight in Grams, 2009**[31]

Month Prenatal Care Began	Birth Weight in Grams					% of low birth weight
	Very Low <1500	Low 1500-2499	Normal >=2500	Unknown	Total	
None	4	0	7	0	11	**36%**
First Month	54	235	2345	0	2634	**11%**
2nd Month	14	62	997	1	1074	**7%**
3rd Month	4	20	382	0	406	**6%**
4th Month	1	6	111	0	118	**6%**
5th Month	0	6	59	0	65	**9%**
6th Month	0	1	20	0	21	**5%**
7th Month	0	2	8	0	10	**20%**
8th Month	0	1	5	0	6	**17%**
9th Month	0	0	1	0	1	**0%**
Not Stated	2	9	66	0	77	
TOTAL	79	342	4001	1	4423	

There appears to be a relationship between the number of prenatal visits and whether the baby was born low or very low birth weight. As seen in Table 7.03(b), there is a steep decline in low birth weight among mothers who had seven or more prenatal visits.

Table 7.03(b) **Durham County Resident Births by Number of Prenatal Visits and Birth Weight in Grams for All Women, 2009**[32]

Number of Prenatal Visits	Birth Weight in Grams					% of Low birth weight
	Very Low <1500	Low 1500-2499	Normal >=2500	Unknown	Total	
None	4	0	7	0	11	36%
One	2	1	4	0	7	43%
Two	3	0	4	0	7	43%
Three	2	2	18	0	22	18%
Four	9	1	12	0	22	45%
Five	2	5	27	0	34	20%
Six	7	6	33	0	46	28%
Seven	3	4	56	0	63	11%

Eight	7	10	101	0	118	14%
Nine	10	15	131	0	156	14%
Ten	9	23	229	0	261	16%
Eleven	4	17	184	0	205	8%
Twelve	5	27	368	0	400	10%
Thirteen	2	35	226	0	263	8%
Fourteen	2	37	313	0	352	14%
Fifteen	5	44	292	0	341	11%
16 or more	2	107	1900	0	2009	5%
Not Stated	1	8	96	1	106	
TOTAL	79	342	4001	1	4423	

The Durham community has been somewhat successful in educating mothers across the educational and age spectrum about the importance of prenatal care; only 0.2% of all Durham women who gave birth in 2009 reported having no prenatal care at all.[33] However, there is still work to be done to reach minority women. While the initiation of prenatal care may not impact birth weight, the consistency of pre-natal visits throughout a pregnancy does.

Primary Data

2010 Durham County Community Health Opinion Survey[34]

The Durham County Community Health Opinion Survey asked community members to select their top three unhealthy behaviors in Durham County.

- Only 5.6% of respondents ranked “not getting prenatal care” as one of the top three

North Carolina Pregnancy Risk Assessment Monitoring System Survey

The North Carolina Pregnancy Risk Assessment Monitoring System (PRAMS), is a Centers for Disease Control and Prevention (CDC) initiative to reduce infant mortality and low birth weight. NC PRAMS is a random, stratified, monthly mail/telephone survey of North Carolina women who recently delivered a live-born infant. The PRAMS survey collects data on maternal behaviors and experiences before, during, and after pregnancy for a sample of North Carolina women. This data is from 2006-2008 and from a sample of 4,378 women across the state.

More than half (51%) of women less than 25 years old, reported experiencing barriers when trying to obtain prenatal care compared to 34.9% of 25-34 year olds and 31.5% of women 35 and older. Table 7.03(c) summarizes the barriers that women encountered, by age. The most commonly cited barriers were the inability to get an earlier appointment, lack of insurance or money and not wanting anyone to know about the pregnancy.

Table 7.03(c) **Prenatal Care Barriers**[35]

Barrier	<20 years	20-24 years	25-34 years	35 + years
I didn't want anyone to know I was pregnant	13.7%	10.9%	6.0%	5.4%
I didn't have my Medicaid card	14.1%	17.8%	8.9 %	6.6 %
I couldn't get an appointment earlier in my pregnancy	16.9%	22.5%	15.0%	10.6%
I didn't have enough money or insurance to pay for the visit	16.3%	19.2%	12.0 %	11.1%
I had no way to get to the clinic or doctor's office	9.7%	9.8%	5.7%	4.6%
The doctor or my health plan would not start care as early as I wanted	9.2%	11.4%	9.6%	6.7%
I couldn't get time off work	7.6%	8.8%	6.4%	3.3%
I had too many other things to do	7.7%	6.6%	4.9%	3.6%

Figure 7.03(a) shows where survey respondents received prenatal care, by age. The youngest women were more likely to seek care at the health department whereas women 25 and older were more likely to get care with a private medical provider.

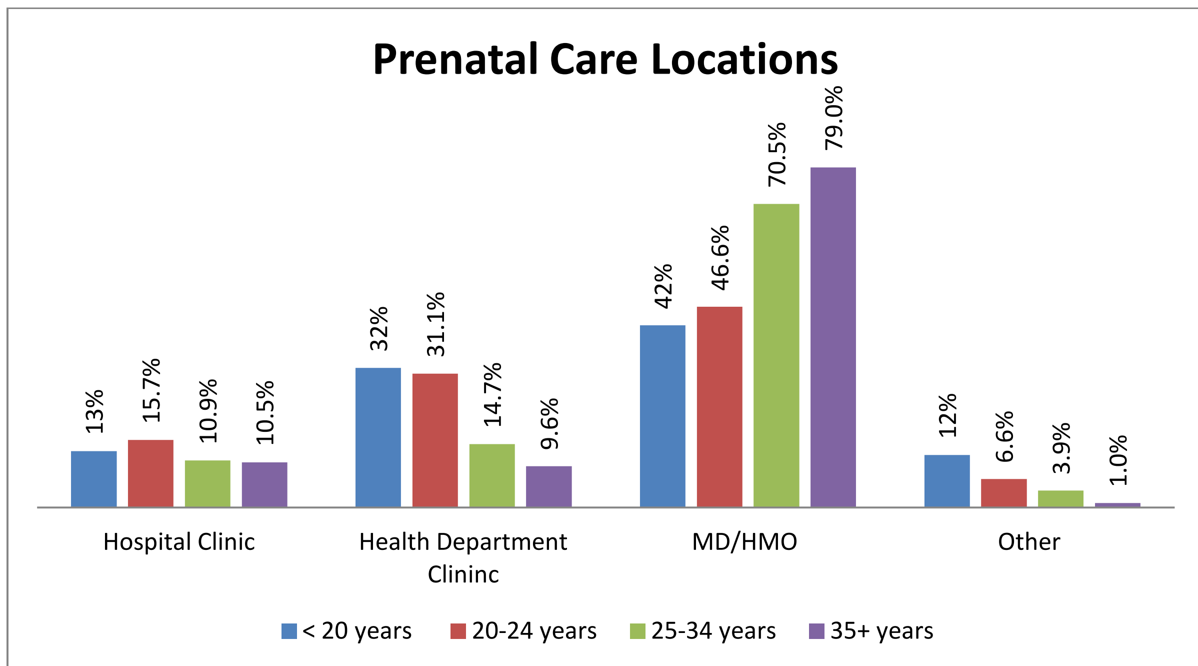


Figure 7.03(a) Prenatal care locations[36]

Recommended Strategies

Increasing access to prenatal care and encouraging the inclusion of preconception information into well-woman visits can contribute to healthy mothers and healthy babies.

Moving beyond Pre-natal Health to Preconception Health

Poor pregnancy outcomes associated with nicotine and alcohol use, obesity, pre-existing medical conditions, and use of specific over the counter drugs (teratogens) are still prevalent. During the first 4-10 weeks after conception, the fetus is most susceptible to problems. Prenatal care, which usually begins at week 11 or 12 of a pregnancy, comes too late to prevent many serious maternal and infant health problems. Therefore preconception care, which includes pre-pregnancy planning, screenings and risk-reduction interventions, is vital.[37]

Current Initiatives & Activities

The Durham County Health Department offers the evidence-based CenteringPregnancy program. CenteringPregnancy is group prenatal care in which women of similar gestational age come together in small groups (usually 8 to 12) to receive their care. The program incorporates health assessment, education, and support and has been shown to improve health outcomes for women and their infants. CenteringPregnancy has been available at the Durham County Health Department since 2004. The service continues to grow, but its growth has been dependent on grant funding.

The Healthy Parents/Healthy Babies sub-committee of the Partnership for a Healthy Durham is providing opportunities for expectant women to exercise and receive nutritional information through a project funded by the March of Dimes and offered through the Durham County Department of Public Health

There are public and private prenatal care providers in Durham County. Most providers accept Medicaid for prenatal services. The prenatal clinic at Durham County Health Department accepts Medicaid and also provides services on a sliding fee scale based on family size and income:

- ***Durham Regional Hospital (Duke University Health System)***
  http://www.durhamregional.org/
  (919) 470-4000

- ***NC Women's Hospital (UNC Health Care)***
  http://www.ncwomenshospital.org
  (919) 966-4131

- ***The Birth Place (Duke University Health System)***
  http://www.durhamregional.org/services/birth_place
  (919) 470-4000

- ***Harris & Smith OB-GYN (Harris and Smith Obstetrics and Gynecology)***
  http://www.harrissmith.com
  (919) 471-1573

- ***Lincoln Community Health Center***
  http://www.lincolnchc.org
  (919) 956-4000

- ***Women's Health Alliance***
  This clinic was previously known as the Durham Women's Clinic.
  http://www.durhamwomensclinic.com
  (800) 760-1873

- ***Highgate Family Medical Center (UNC at Chapel Hill)***
  http://www.unchealthcare.org/site/healthpatientcare/community_practices/Highate_Family
  (919) 361-2644

- ***Department of Obstetrics and Gynecology (UNC at Chapel Hill)***
  http://www.med.unc.edu/obgyn
  (919) 966-2131

Section 7.04 *Substance use during pregnancy*

Overview

According to the Centers for Disease Control and Prevention (CDC), babies who are born to women who smoke have a greater chance of being born prematurely, are more likely to be born with low birth weight, and are more likely to die of Sudden Infant Death Syndrome (SIDS).[38] Drinking alcohol during pregnancy can lead to birth defects, and no amount of drinking has been proven to be safe.[39] According to the March of Dimes, studies suggest that the heavy use of marijuana during pregnancy may result in premature births and in learning difficulties as the children get older.[40]

Healthy NC 2020 Objective

Maternal and Infant Health

Healthy NC 2020 Objective[41]	Current Durham	Current NC	2020 Target
1. Reduce the percentage of women who smoke during pregnancy	5.4% (2009)[42]	10.2 % (2009)[43]	6.8 %

Secondary Data: *Major findings*

In Durham County, 5.4% of all mothers smoked during pregnancy in 2009 and 8.9% of minority mothers smoked. This is much lower than the 10.2% of pregnant women in North Carolina who smoked during pregnancy. Durham also has a lower percentage of smoking during pregnancy than its peer counties: Cumberland County at 8.5%, Guilford County at 8.1%, and Wayne County at 13.4%. However, Durham's 2009 rate does not indicate a positive trend. The rate of mothers who smoked during pregnancy was an average of 3.9% between the years 2003 to 2006.[44] Figure 7.04(a) shows how the number of women who smoked during pregnancy has increased almost every year.

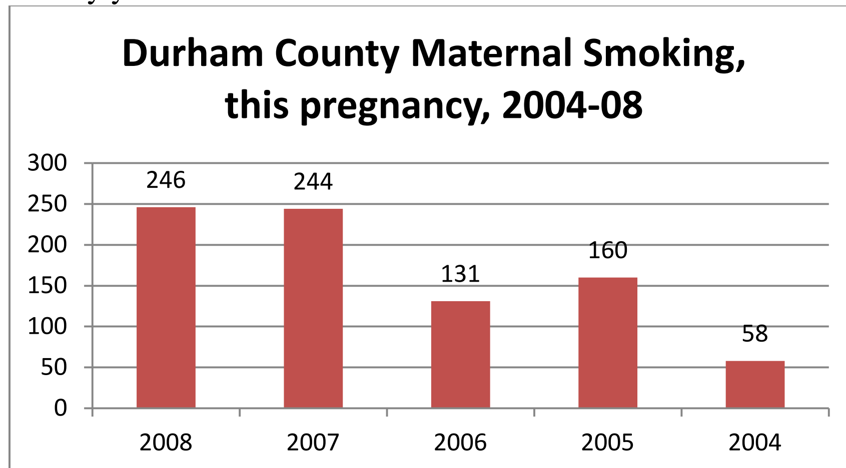


Figure 7.04(a) Maternal smoking, this pregnancy

Primary Data

2010 Durham County Community Health Opinion Survey Results[45]

Among the adult male and female respondents, most of whom were not pregnant, but were currently smoking:

- 43% of those surveyed who smoke say they would go to a doctor for help quitting.
- 38% said they would go to a doctor for drug/alcohol abuse problems.

Interpretations: *Disparities, gaps, emerging issues*

The number of minority women in Durham County who report smoking during pregnancy (163) is higher than that reported by white women (74), but it is still lower than the numbers statewide. Smoking may contribute to the higher number of minority low birth weight infants.

Recommended Strategies

Table 7.04(a) **Evidence-Based Resources and Promising Practices**[46]

Setting	Name and Website	Description
Individual	Baby & Me Tobacco Free http://www.naccho.org/topics/modelpractices/database/practice.cfm?PracticeID=147	The Baby & Me - Tobacco Free Program addresses the need to reduce smoking in pregnant women and increase cessation duration to at least one-year afar the birth of the baby.
Individual	Nurse-Family Partnership http://nrepp.samhsa.gov/ViewIntervention.aspx?id=88	Nurse-Family Partnership (NFP) is a prenatal and infancy nurse home visitation program that aims to improve the health, well-being, and self-sufficiency of low-income, first-time parents and their children."
Community	Tennessee Intervention for Pregnant Smokers (TIPS) http://www.etsu.edu/tips/documents/TIPS_Progress_Report.docx	The TIPS program was funded in 2007 by Governor Bredesen's Office of Children's Care Coordination, for a total of $1.4 million for a four year period. The program goal is to improve birth outcomes in Northeast Tennessee by reducing rates of pregnancy smoking and smoke exposure.

Women who receive counseling to quit are more likely not to smoke during pregnancy. One of the evidence-based approaches to help women stop smoking is called "The 5 A's." This stands for "Ask, Advise, Assess, Assist, and Arrange." This counseling method is promoted by QuitlineNC (1-800-QUIT-NOW) which is jointly funded by the North Carolina Health and Wellness Trust Fund and the North Carolina Department of Health and Human Services. Health department prenatal clinics in the state use this approach to help their pregnant patients stop smoking.

Current Initiatives & Activities

- ***Health Education Division of the Durham County Health Department***

The DCHD offers smoking cessation programs.

Phone Number: (919) 560-7765

- ***Duke Alcohol Rehab Family Care Program - Smoking***

Employers offer resources to encourage their employees to stop smoking and drinking. Pregnant women with other substance abuse issues may be referred also.

Phone Number: (919) 416-7251.

- ***The Horizons Program***

Offers education and support to pregnant and postpartum women with substance abuse problems.

Phone Number: (919) 966-9169

Section 7.05 *Infant mortality*

Overview

Infant mortality refers to a baby who was born alive, but died before reaching his or her first birthday. The infant mortality rate is often used to measure the overall health of a community. There has been an increase in infant mortality rates for both whites and minorities. In 2009, 37 infants died in Durham County, 21 of which were minorities and 16 of which were white. The minority infant death rate in Durham is 11.5 per 1,000 and the white infant death rate is 6.2 per 1,000.[47] There continues to be a significant racial disparity in infant mortality, as over half of infant deaths in Durham between 2005 and 2009 happened in African American families.

Two conditions that lead to most of infant mortality are prematurity (born four or more weeks before the due date) and low birthweight (born weighing less than 2500 grams). Children who are born too small or too early can also have developmental and other health problems throughout their lifetime. Congenital anomalies (birth defects) are the second leading cause of infant deaths in Durham, followed by acute illnesses such as blood stream infections or pneumonia. Other factors associated with infant mortality include, but are not limited to:

- Health of the mother and family throughout their lives, including chronic diseases like diabetes and high blood pressure
- Family healthcare, including prenatal care and management of medical risks before conception
- Emotional factors, such as high levels of stress or degree of social support
- Nutrition
- The physical environment, such as exposure to pollution or contaminants
- Minority status, particularly African Americans
- Poverty

Healthy NC 2020 Objective

Maternal and Infant Health

Healthy NC 2020 Objective[48]	Current Durham	Current NC[49]	2020 Target
1. Reduce the infant mortality racial disparity between whites and African Americans	2.85 (2005-09)[50]	2.45 (2008)	1.92
2. Reduce the infant mortality rate (per 1,000 live births)	7.0 (2005-09)[51]	8.3 (2005-09)	6.3

Secondary Data: *Major findings*

Table 7.05(a) summarizes the 2009 number of infant deaths, births and the infant mortality rates among whites and minorities in North Carolina, Durham County and Durham's three peer counties.

Table 7.05(a) **2009 Infant mortality rate report**[52]

Residence	Infant deaths			Infant births			Infant mortality rates		
	White	Minority	Total	White	Minority	Total	White	Minority	Total
North Carolina	487	519	1,006	90,005	36,780	126,785	5.4	14.1	7.9
Durham	16	21	37	2,593	1,830	4,423	6.2	11.5	8.4
Cumberland	29	30	59	3,726	2,470	6,196	7.8	12.1	9.5
Guilford	17	47	64	3,349	2,801	6,150	5.1	16.8	10.4
Wayne	8	14	22	1,036	625	1,661	7.7	22.4	13.2

Table 7.05(b) summarizes the number of infant deaths and the infant mortality rates among whites and minorities in North Carolina, Durham County and Durham's three peer counties for 2005-2009.

Table 7.05(b) **NC infant death rates per 1,000 live births 2005-2009 by county**[53]

Residence	Total infant deaths	Total infant death rate	White infant deaths	White infant death rate	Minority infant deaths	Minority infant death rates
North Carolina	5289	8.3	2764	6.0	2525	14.0
Durham	152	7.0	51	4.0	101	11.4
Cumberland	302	10.5	126	7.4	176	15.0
Guilford	309	10.0	115	6.6	194	14.3
Wayne	87	9.9	31	5.5	56	17.7

Figure 7.05(c) visually displays the 2005-2009 infant mortality rates. Durham County's rate of 7.0 per 1,000 live births is lower than its three peer counties and the State.

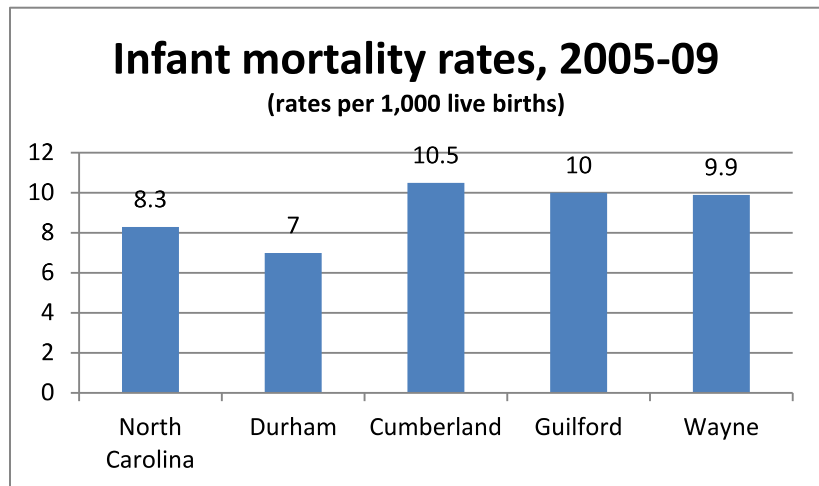


Figure 7.05(c) Infant mortality rates, 2005-09

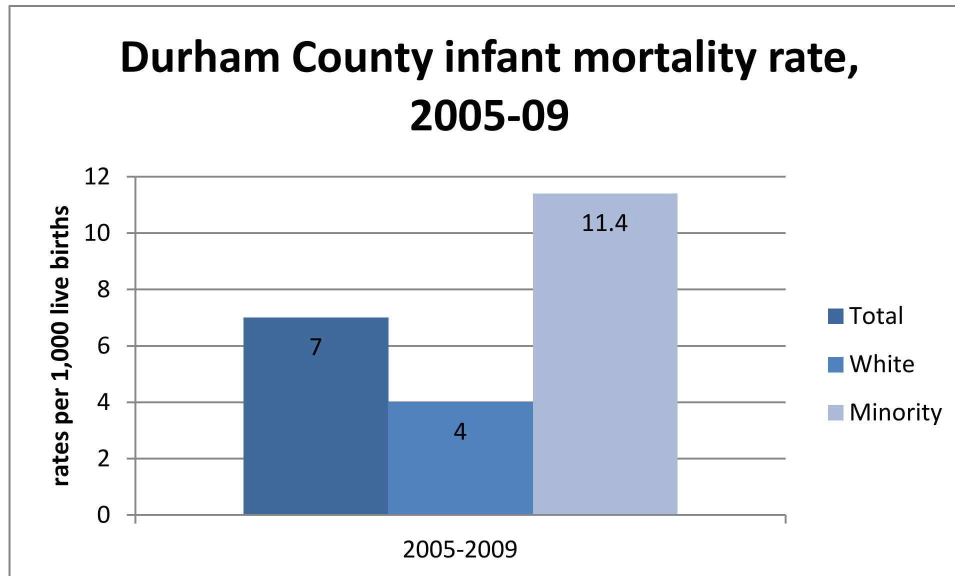


Figure 7.05(d) shows the wide racial disparity that exists in Durham County. Minorities have an infant mortality rate that is 2.85 times higher than whites.[54]

Figure 7.05(d) Durham County Infant mortality rate, 2005-09

Interpretations: *Disparities, gaps, emerging issues*

Racial Disparities: Although minorities make up 41% of all Durham births, they account for approximately 57% of all infant deaths and low birth weight babies. Blacks are the minority group that are most impacted.

The FDA recently approved the new 17P drug known as Makena™ for use in preventing recurring preterm birth. Women who are pregnant with a singleton pregnancy and who have a history of a previous singleton spontaneous preterm birth between 20^0 and 36^6 weeks gestation are eligible. Treatment should be initiated between 16 and 21^6 weeks gestation. In cases where a woman has begun her prenatal care late, injections may be started up to 23^6 weeks gestation. In order to prevent late preterm birth, 17P should be administered until 36^6 weeks gestation. While this is not a desirable situation, 17P should continue to be given on a weekly basis. The woman may need additional assistance and support in completing the full course. While the risk of delivery appears to increase with cessation of 17P, the benefit of partial therapy still outweighs the risk of no therapy.

Recommended Strategies

A Kids Count Indicator Brief, "Preventing Low Birthweight," from July 2009 funded by the Annie E. Casey Foundation states that strategies employed during pregnancy are not enough to prevent low birth weight. It requires a lifespan approach that takes into account medical, socioeconomic, and environmental factors. Programs and policies in the following areas can help prevent poor pregnancy outcomes, which often lead to infant deaths.

- Improving the accessibility and affordability of healthcare of women before and between pregnancies can help women manage chronic health
- Promoting and encouraging well-woman visits, before and between pregnancies

- Smoking cessation in women during pregnancy
- Encouraging and promoting the use of a multivitamin with folic acid pre and interconceptionally
- Early and regular prenatal care
- Use of 17-P injections during pregnancy, as recommended by a physician[8]
- Continue the multivitamin distribution. Encourage women of childbearing age to develop a reproductive health plan so that a pregnancy is intentionally started when a woman is in optimal health to improve her chances of having a good birth outcome.

Table 7.05(c) **Evidence-based and promising practice resources**[55]

Setting	Name and Website	Description
Community	Back to Sleep Campaign http://www.nichd.nih.gov/sids/ http://www.nchealthystart.org/backtosleep/index.htm	To educate parents, caregivers, and health care providers about ways to reduce the risk for Sudden Infant Death Syndrome (SIDS). The campaign was named for its recommendation to place healthy babies on their backs to sleep.
Individual	What About Mom? http://www.naccho.org/topics/modelpractices/database/practice.cfm?PracticeID=436	The goal of this program is to lower the overall infant mortality rates and low birth rates by providing free ICC services to high-risk new mothers in the unique setting of a pediatrician's office.

Current Initiatives & Activities

The Healthy Parents Healthy Babies committee received a March of Dimes grant focusing on healthy weight and healthy lifestyles in the postpartum period. A postpartum group, modeled after CenteringPregnancy is being developed and will be implemented by a nutritionist and physical activity specialist.

- ***Durham County Health Department***
  - Family Planning Clinic: provides access to birth control methods
  - Medical Nutrition Therapy: Individual nutrition counseling provided to women during pregnancy or postpartum, and for infants and children of all ages.
  - CenteringPregnancy: group prenatal care
  - SIDS training for child care professionals
  - Pregnancy Care Management: Provides maternity care coordination to women of low income during pregnancy and up to 6 weeks postpartum

Website: http://durhamcountync.gov/departments/phth/General_Information.html
(919) 560-7600

- ***NC Pregnancy Medical Home (PMH)***

The Division of Medical Assistance (DMA), in partnership with Community Care of North Carolina (CCNC) and other community stakeholders including Medicaid providers, local health departments, and the Division of Public Health, created a program that provides pregnant Medicaid recipients with a Pregnancy Medical Home (PMH). The goal is to improve birth outcomes in North Carolina by providing evidence-based, high-quality maternity care to Medicaid patients. This is done by modeling the PMH after the enhanced primary care case management (PCCM) program developed by CCNC. PMH practices agree to work toward quality improvement goals. Pregnant Medicaid patients at risk of poor birth outcome are identified through standardized risk screening and are referred for pregnancy care management to address those risk factors. Local health departments, working in partnership with CCNC networks, provide individualized pregnancy care management services. The level of service provided is in proportion to the individual's identified needs. Care managers closely monitor the pregnancy through regular contact with the physician and patient to promote a healthy birth outcome. Care managers are an integral part of the patient's care team.

Website: http://www.ncdhhs.gov/dma/pmh/PMHSpecialBulletin.pdf
Phone Number: (919) 384-6428

- ***Durham Connects***

  Provides in-home visitations to mothers of all newborns in Durham County. Links parents and babies with resources and support within the community.

  Website: www.durhamconnects.org

- ***Healthy Parents Healthy Babies committee***

  Interdisciplinary committee focused on preventing infant mortality.

  Website: http://www.healthydurham.org

- ***Welcome Baby***

  Provides education and support programming to parents of young children to encourage proper infant care and development.

  Website: http://www.welcomebaby.org

- ***WIC***

  Provides food vouchers and nutrition counseling for pregnant, breastfeeding and postpartum women, infants and children up to age five. Staff available for nutrition and breastfeeding consultations and classes. Limited electric breast pump loans are available for WIC participants. Participants must meet income guidelines.

  Website: http://www.nutritionnc.com

- ***Healthy Start Foundation***

Non-profit organization dedicated to reducing infant mortality and improving the health of women through public education, training of professionals, advising policy-makers.

Website: http://www.nchealthystart.org

- ***March of Dimes***
  Non-profit organization that supports the reduction of infant mortality by supporting local preconception and interconception health projects.

  Website: http://www.marchofdimes.com

- ***North Carolina Preconception Health Campaign***
  Website: http://www.getfolic.com

- **Child Care Coordination for Children (CC4C)**
  A state-wide program that provides home or childcare visits for children who are at-risk of social, medical or developmental concerns in the first five years of life. Nursing and social work staff provides support, education and community resource information. All services are free.

Contributors

#	Name of Section	Name, Credentials	Affiliation
7.01-7.05	Reproductive health chapter	Mel Downey-Piper, MPH, CHES	Durham County Health Department, Partnership for a Healthy Durham, Coordinator
7.01-7.05	Reproductive health chapter	Pat Harris	Welcome Baby Family Resource Center, Program Coordinator
7.01-7.05	Reproductive health chapter	Sarah Nahm, MPH, RD, LDN	(formerly at the) Durham County Health Department, Public Health Nutritionist
7.01-7.05	Reproductive health chapter	Vickie White, RN	Durham County Health Department, Program Manager

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