




---

---

---

---

---

---

---

---

### Disclosures

- Neither Steffie Duginske nor Michaela Penix, nor their respective partners, have relationships with commercial companies that could be perceived as a conflict of interest (within the past 12 months).
- There will be no discussion of a product that is still investigational or not labeled for the use under discussion.
- Per ACCME Content Validity Value Statements: This talk is based on "evidence that is accepted within the profession of medicine" and all materials used "conform to the generally acceptable standards of experimental design, data collection, and analysis."
- All materials related to this discussion are not libelous or unlawful, will not cause harm or injury, and do not infringe on any copyright or other proprietary, personal, or contractual rights of any other party.

---

---

---

---

---

---

---

---

### Acknowledgements

- This training was developed by the North Carolina Preconception Health Campaign, a program of the North Carolina Chapter of the March of Dimes, under a contract and in collaboration with the North Carolina Division of Public Health, Women's Health Branch.
- This material was developed through support provided by the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Health, Office of Adolescent Health (grant #SP1AH000004).
- Area L AHEC for their support in providing continuing education credit for this webinar

---

---

---

---

---

---

---

---

## Acknowledgements



- Many thanks to these agencies and individuals for their generosity in sharing their resources in the area of early prenatal care and medical homes for women:
  - North Carolina Division of Public Health, Women's Health Branch
  - Merry-K Moos, FNP, MPH, FAAN
  - Alvina Long Valentin, RN, MPH
  - Sarah Verbiest, DrPH, MSW, MPH
- Specific resources used to guide the development of this training:
  - The National Preconception Curriculum and Resources Guide for Clinicians (Module 1: Preconception Care: What it is and what it isn't)




---

---

---

---

---

---

---

---

## Housekeeping



- Obtaining credits
  - Groups should email [krashied-henry@marchofdimes.org](mailto:krashied-henry@marchofdimes.org)
- Asking questions
- Accessing slides at a later date




---

---

---

---

---

---

---

---

## Objectives



- Understand the relationship between early prenatal care and opportunistic preconception health counseling
- Increase knowledge of the many components of prenatal care
- Increase knowledge about current status of prenatal care among young mothers
- Define adequacy in relation to prenatal care
- Establish how an agency can assess local prenatal care services and early entry barriers




---

---

---

---

---

---

---

---

### "Opportunistic" care



- Preconception care is for every woman of childbearing age every time she is seen
- Every woman, every time



© 2010 National Preconception Curriculum and Resource Guide for Clinicians (Module 1) <http://www.marchofdimes.com/programs/modules>

---

---

---

---


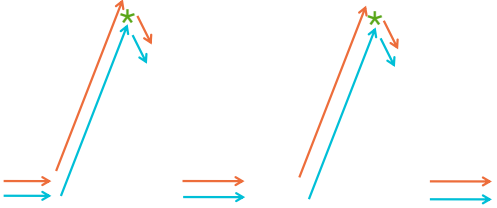
---

---

---

---

### From linear care...



Heiss, M.K. Connecting the Dots: Health Status Before Pregnancy and Pregnancy Outcomes 2011

---

---

---

---



---

---

---

---

### ...to a circle of care



Heiss, M.K. Connecting the Dots: Health Status Before Pregnancy and Pregnancy Outcomes 2011

---

---

---

---

---

---

---

---

## Be healthy before pregnancy



Message for all women of childbearing age:

- Remember, being in the best physical, emotional and financial position BEFORE pregnancy is best
- Make sure your future pregnancies are planned and intended
- Prenatal care should start as early as possible in pregnancy




---

---

---

---

---

---

---

---

## Both early and effective

- Two unique goals for adequate prenatal care:
  1. Making sure young women enter prenatal care during the first trimester
  2. Making sure young women continue to follow the recommended prenatal visit schedule




---

---

---

---

---

---

---

---

## Prenatal care schedule

Recommended prenatal care schedule:

- Weeks 4-28: 1 visit per month
- Weeks 28-36: Visits every 2 weeks
- Weeks 36-birth: Weekly visits until delivery




---

---

---

---

---

---

---

---

## Measures of adequacy

- Measures of adequacy of prenatal care
  - Kessner Index:** Looks at weeks of gestation and total number of visits. Classifies as: inadequate, intermediate and adequate.
  - Kotelchuck Index:** Looks at month of prenatal care initiation and total number of visits (compares number of expected visits to actual number of visits). Classifies as: inadequate, intermediate, adequate and adequate plus.




---

---

---

---

---

---

---

---

## Adequacy of prenatal care, Kotelchuck Index, 2012

	White	Black	Hispanic	Total
Adequate Plus	46%	40%	33%	42%
Adequate	34%	28%	30%	32%
Intermediate	7%	7%	11%	8%
Inadequate	11%	22%	24%	16%

- Adequate Plus: PC begun by 4<sup>th</sup> month, 110%+ of recommended visits
- Adequate: PC begun by 4<sup>th</sup> month, 80-109% of recommended visits
- Intermediate: PC begun by 4<sup>th</sup> month, 50-79% of recommended visits
- Inadequate: PC begun after 4<sup>th</sup> month OR <50% of recommended visits

NC State Center for Health Statistics, 2012 NC resident births and Kotelchuck Index

---

---

---

---

---

---

---

---

## Importance of prenatal care

- Adequate use of prenatal care is associated with:
  - Healthy birth weights
  - Decreased risk of preterm delivery
- Inadequate use of prenatal care is associated with increased risk of:
  - Low birth weight
  - Preterm delivery
  - Neonatal mortality
  - Infant mortality
  - Maternal mortality

Wise A. Scope NC Exam 2013 Leader. Secondary health of women. Prenatal Care. 21. 10-118. 2014




---

---

---

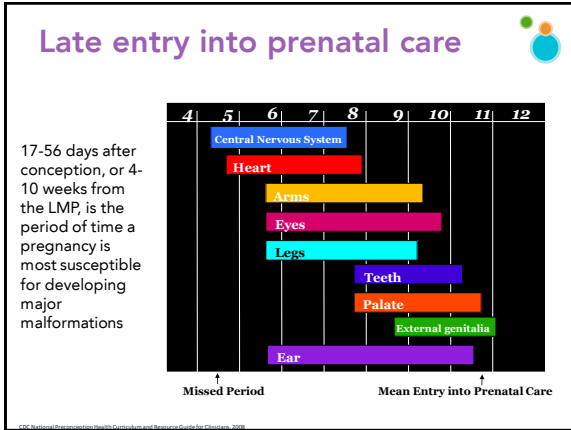
---

---

---

---

---




---

---

---

---

---

---

---

---

---

---

### Mothers not receiving prenatal care in the first trimester in NC, 2012

- 26.9% of mothers surveyed did NOT access first trimester prenatal care
- Rates for not receiving care in the first trimester are highest for:
  - Young mothers
  - African-American (34%) and Hispanic mothers (39%)
  - Unmarried women
  - Less education
  - Lower income levels

© 2012 North Carolina Department of Health and Human Services. All rights reserved. NC State Center for Health Statistics, 2012 Pregnancy Risk Assessment Monitoring System (PRAMS) 2012 NC Data Report Series.

---

---

---

---

---

---

---

---

---

---

### Access to prenatal care

- North Carolina mothers who reported they did not receive prenatal care as early as they wanted
  - 20% of mothers < 20 years of age
  - 27% of mothers ages 20-24 years
  - 16% of mothers ages 25-34 years
- Half of all young mothers reported experiencing barriers to obtaining prenatal care

© 2012 North Carolina Department of Health and Human Services. All rights reserved. NC State Center for Health Statistics, 2012 Pregnancy Risk Assessment Monitoring System.

---

---

---

---

---

---

---

---

---

---

## Barriers to prenatal care in NC



- Couldn't get an appointment
- No money or insurance
- Didn't have Medicaid card
- Unaware of pregnancy
- Transportation
- Didn't want pregnancy known
- Too many other things going on
- No child care
- Couldn't take time off from work or school
- Doctor or health plan would not start care earlier

NC State Center for Health Statistics, 2011. Pregnancy Risk Assessment Monitoring System. Heaman, M. J., Mullan, M., & Eber, L., et al. (2010). Barriers, motivators, and facilitators related to prenatal care utilization among newly-enrolled Medicaid recipients in North Carolina. *Journal of Community Health*, 35(2), 105-112.

---

---

---

---

---

---

---

---

---

---

## Prenatal care for African American Mothers in NC



- Less likely to start prenatal care in the first trimester
- Significantly more likely to experience at least one prenatal barrier compared to white mothers
  - 1 in 5 report not being able to get an appointment
  - 1 in 6 experience lack of money or insurance
  - 1 in 10 wanted to keep pregnancy a secret

NC DHHS Fact Sheet April 2011: NC African-American Maternal Health

---

---

---

---

---

---

---

---

---

---

## Important components of prenatal care and preconception health



- Identification & treatment of sexually transmitted infections
- Assessment of medication use
- Identification of environmental risks
- Achieving and/or maintaining healthy weight




---

---

---

---

---

---

---

---

---

---

Sexually Transmitted Infection (STI)	Impact on Pregnancy, Fetus, and/or Delivery
Chlamydia	Untreated can cause prematurity, pink eye, & breathing problems for the baby
Gonorrhea	Untreated can cause blindness, joint infections, & blood infections for the baby
Genital Herpes	Can be transmitted during vaginal delivery & cause blindness, brain damage, & death of baby
HPV—Genital Warts	Can be uncomfortable during pregnancy
Bacterial Vaginosis	May increase a woman's chances of premature rupture of membranes & preterm delivery
HIV/AIDS	Risk of transmission to the baby
Syphilis	Untreated can cause blindness, brain damage & death of baby in addition to prematurity, stillbirth, and congenital malformations
Hepatitis B	Untreated can infect baby at delivery and later cause liver disease or liver cancer; also increases risk for infant becoming a Hepatitis B carrier

Copyright © L. C. et al. Sexually Transmitted Diseases, In Williams: Obstetrics, 24th Edition, New York, McGraw-Hill Medical/Publishing Division, 2005, pages 1201-1202; Workowski, K.A., Berman, S.M. Sexually Transmitted Diseases Treatment Guidelines, 2008. Morbidity and Mortality Weekly Report.

---

---

---

---

---

---

---

---

---


---

---

---

## Medication

Because nearly half of all pregnancies in North Carolina are unintended, medication use should be monitored carefully during women's childbearing years




---

---

---

---

---

---

---

---

---


---

---

---

## Medications and pregnancy

- Medications known to cause serious birth defects if taken during pregnancy:
  - Isotretinoin
  - Thalidomide
- Medications for the following conditions should be closely monitored for women of childbearing age:
  - Asthma
  - Epilepsy
  - High blood pressure
  - Depression



U.S. Centers for Disease Control and Prevention, updated July 2011

---

---

---

---

---

---

---

---

---

---

---

---



## Environmental Risks

Several environmental risks are associated with increased risk for poor maternal and/or infant outcomes and should be addressed as early as possible during prenatal care and throughout pregnancy

- **Tobacco use**
- Alcohol use
- Illicit drug use
- Exposure to some toxins (e.g. lead exposure)
- Experience high levels of stress
- Experiencing violence




---

---

---

---

---

---

---

---

## Maternal smoking during pregnancy

Smoking during pregnancy is **the single most modifiable risk factor** for poor birth outcomes




---

---

---

---

---

---

---

---

## Maternal smoking during pregnancy

- Increased risk for mother of:
  - Preterm birth
  - Ectopic pregnancy
  - Placental complications
  - Spontaneous abortion
  - Stillbirth
- Increased risk for child of:
  - Low birth weight (causal association – twice as likely in smokers)<sup>1</sup>
  - Sudden infant death syndrome<sup>1</sup>
  - Childhood respiratory illnesses<sup>2</sup>
  - Learning disabilities and conduct disorders<sup>1</sup>

<sup>1</sup>Waters and smoking: A report of the Surgeon General. U.S. Dept. of Health and Human Services, Public Health Service, Office of the Surgeon General, Washington, DC, 2002.  
<sup>2</sup>Yu, P.E. et al., Prevalence of asthma and wheezing in public schoolchildren: association with maternal smoking during pregnancy. *Annals of Allergy, Asthma and Immunology* 75(3): 30-34, 1997.  
 1. Hwang, G.C., Spitzer, R.L., The Association of Maternal Smoking with Infant Mortality and Low Birth Weight in North Carolina. *1999*. 2(10): 1045-1050. 2. K. Karger, M.D., North Carolina State Center for Health Statistics, Raleigh, NC.  
 3. The epidemiology of asthma in non-smokers. *2000* 10: 1045-1050. *Journal of Allergy and Clinical Immunology*. 104(5): 1045-1050, 2000.

---

---

---

---

---

---

---


---

## Smoking during pregnancy

In North Carolina in 2005-2009, 70,529 women, or 12%, who had a live birth reported smoking during pregnancy.

**Current clinical guidelines:**

"Whenever possible pregnant smokers should be offered person-to-person psychosocial interventions that exceed minimal advice to quit. Clinicians should offer effective tobacco dependence interventions to pregnant smokers at the first prenatal visit as well as throughout the course of pregnancy."



PEMMS 2005, NC Birth Cohort for Health Statistics, NC Births 2005-2009 # and % of North Carolina live birth reported smoking pregnancy

---

---

---

---

---

---

---


---

---

---

## What providers can do

- Move beyond screening and recommendations
- Provide brief smoking cessation counseling and use pregnancy-specific self-help materials
- Use the 5 A's regularly with preconception, pregnant and postpartum patients
- Connect patients with support such as the NC Quitline and a medical home



How Well are Doctors Screening and Counseling? 2008 Study. Clinical Practice Guidelines. U.S. Department of Health and Human Services. 2008

---

---

---

---

---

---

---


---

---

---

## Women in North Carolina & Weight, 2013

- 60.4% of women in NC of childbearing age (18-44) are overweight or obese
- 50.4% of young women ages 18-34 are overweight or obese
- 25.6% of high school females are overweight or obese
- There is also a racial disparity in weight status
  - 56.4% of white women are overweight or obese
  - 74.7% of African-American women are overweight or obese
  - 55.1% of other minorities are overweight or obese



NC Behavioral Risk Factor Surveillance System 2010-2012 NC Youth Risk Behavior Survey 2011

---

---

---

---

---

---

---

---

---

---

## Pregnancy risks

- Increased pre-pregnancy BMI is associated with increased risk of:
  - Preeclampsia
  - Gestational Diabetes
  - Gestational Hypertension
  - C-section
  - Induction of labor
  - Postpartum hemorrhage




---

---

---

---

---

---

---

---

## And for the baby...

- Macrosomia
- Preterm delivery
- Poor APGAR scores
- NICU admission
- Shoulder dystocia
- Late fetal death
- NTDs (Anencephaly and spina bifida)




---

---

---

---

---

---

---

---

## The cycle repeats

- Babies born to overweight mothers are more likely to become obese children
- The likelihood that overweight children will become obese adults is almost nine times higher than the risk for children who are not overweight




---

---

---

---

---

---

---

---

### Weight gain during pregnancy

Prepregnancy Weight Category	Body Mass Index	Recommended Range of Total Weight Gain (lb)	Recommended Range of Weight Gain * in 2 <sup>nd</sup> & 3 <sup>rd</sup> Trimesters (lb) (Mean Range [lb/wk])
Underweight	Less than 18.5	28-40	1 (1-1.3)
Healthy Weight	18.5-24.9	25-35	1 (0.8-1)
Overweight	25-29.9	15-25	0.6 (0.5-0.7)
Obese (all classes)	30 and greater	11-20	0.5 (0.4-0.6)

\*Calculations assume a 1.1-4.4lb weight gain in the first trimester

ACOG. 2013. Weight gain during pregnancy. <http://www.acog.org/Resources/AndPublications/CommitteeOpinions/Committee-on-Obstetrics-Practice/Weight-Gain-During-Pregnancy>

---

---

---

---

---

---

---

---

---

---

- ### Circle of Care Resources
- Pregnancy Medical Home
    - Community Care of North Carolina: <http://www.communitycarenc.com/population-management/pregnancy-home/>
  - Patient-Centered Medical Homes
    - North Carolina Academy of Family Physicians: <http://www.ncafp.com/2014/resources/pcmh/main>
  - Centering Pregnancy Model
    - <http://centeringhealthcare.org/pages/centering-model/pregnancy-overview.php>
    - Dr. Carmen Strickland, North Carolina Centering Pregnancy Consortium, [cgstrick@wakehealth.edu](mailto:cgstrick@wakehealth.edu)

---

---

---

---

---



---

---

---

---

---

- ### Improving service delivery
- How early is prenatal care defined in your agency?
  - What happens at the pregnancy test visit?
  - How do women know when it is the right time to access prenatal care?
  - How do women know where to go to access prenatal care?
- 


---

---

---

---

---

---

---

---

---

---

### Improving service delivery

- When does your practice give patients information about risk behaviors (alcohol, smoking, cat litter, etc.), medication use, healthy weight and preventive measures to ensure a healthy pregnancy and birth outcome?
- Do all women receive this information in a way that can be tracked?
- Who provides this information?
- What method of information sharing is used?




---

---

---

---

---

---

---

---

### The circle of care for women




---

---

---

---

---

---

---

---

### March of Dimes North Carolina Preconception Health Campaign Contacts



Questions? Comments?

---

---

---

---

---

---

---

---

### Only one webinar left!

- The Affordable Care Act: Services that support women of childbearing age
  - April 16, 2015
  - 2:00pm-3:30pm
  - Register at [EveryWomanNC.com](http://EveryWomanNC.com)




---

---

---

---

---

---

---

---

### Thank you!

- For more information about the Campaign and other preconception health topics visit, [EveryWomanNC.com](http://EveryWomanNC.com)
- Find us on Facebook: <http://www.facebook.com/everywomannc>
- Follow us Twitter: @everywomannc




---

---

---

---

---

---

---

---

### March of Dimes North Carolina Preconception Health Campaign

- A statewide initiative aimed at improving birth outcomes in NC by reaching out to women with important health messages before they become pregnant
- Formerly functioned as the NC Folic Acid Campaign
- Goals of the Campaign are to reduce infant mortality, birth defects, premature birth, and chronic health conditions in women, while also aiming to increase intended pregnancies in NC
- Seeks to raise awareness and inspire positive action among the general public, health care professionals, and community agencies




---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---