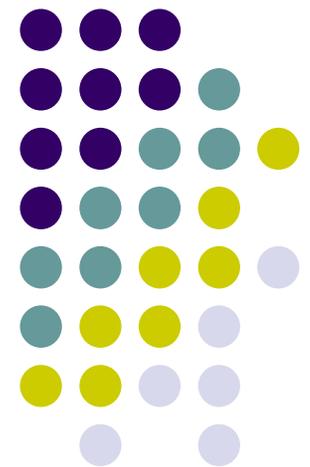


Connecting the Dots: Health Status Before Pregnancy and Pregnancy Outcomes

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DISCLOSURE STATEMENT



- I have had no financial relationships with commercial interests related to this topic in the last twelve months



Summary

- Prenatal care, the usual approach to prevention of poor pregnancy outcomes, is largely ineffective in meeting primary prevention needs of pregnant women and unborn children
- Impacting the health of the next generation requires new prevention approaches including an emphasis on women's health and the life course perspective



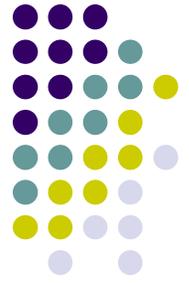


Prenatal Care: Unlikely to Impact Major Causes Infant Mortality/Morbidity

- Association of prenatal care with improved outcomes most likely represents a selection bias rather than causal relationship
- Despite increased access/utilization of prenatal care prematurity/low birth weight rates increase and disparities are essentially unchanged

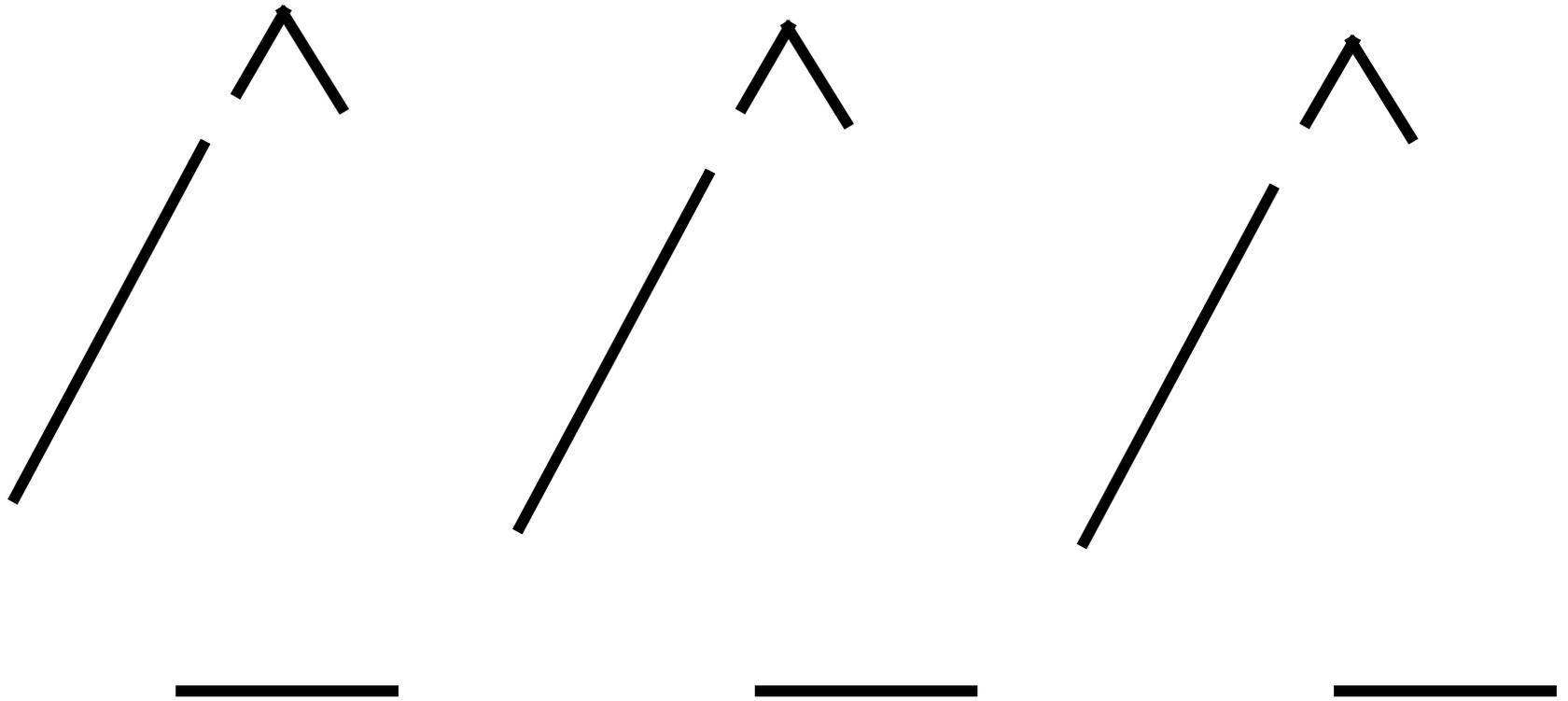
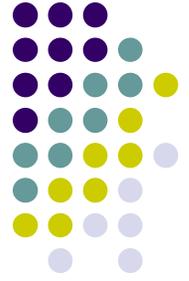
(NOTE: I am **not** arguing for the elimination of prenatal care. . .but that's another talk)

Dominant Perinatal Prevention Paradigm



- Features categorical focus with little integration with woman's preexisting care or with her future health needs
- Initiated at first prenatal visit with
 - Risk assessment
 - Health promotion and disease prevention education
 - Prescription for prenatal vitamins
- Ends with the postpartum visit (if there even is one)

Current Approach to Reproductive Health Care





Features of Current Approach

- **Episodic**
- **Disjointed**
- **Inefficient**
- **Often ineffective. . .**
 - **. . .AND IT JUST DOESN'T MAKE SENSE**



“As attractive and relatively inexpensive as prenatal care is, a medical model directed at a 6-8 month interval in a woman’s life cannot erase the influence of years of social, economic, [physical] and emotional distress and hardship.”

Need for a New Approach to Address Poor Pregnancy Outcomes



- Early losses
- Fetal deaths
- Congenital anomalies
- Low birth weight (prematurity and growth restriction)
- Maternal morbidity and mortality
- Disparities in outcomes



**In obstetrics. . .
most of our outcomes or their
determinants are
already present before we ever
meet our patients**

Some Examples



- Intendedness of conception
- Interpregnancy interval
- Maternal age
- Exposure ART/ovulation stimulation
- Spontaneous abortion
- Abnormal placentation
- Chronic disease control
- Congenital anomalies
- Timing of entry into prenatal care



IMPORTANCE OF FIRST TRIMESTER ON PREGNANCY OUTCOMES

Evolution of a New Perinatal Prevention Paradigm



- Need to reach women before conception with the information they need to have the healthiest pregnancies and outcomes possible.
- Prevention paradigm of prenatal care starts with first prenatal visit:
 - History
 - Lab testing
 - Prevention education
- Why does the health care system require women to wait until entry into prenatal care to receive these services?

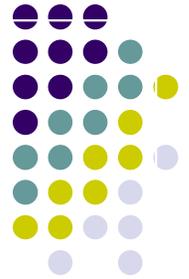
**Over time, it has come to be recognized
that**

**Prepregnancy Health Status and
Preconception Health Care**

provide pathways to



**the Primary Prevention of many poor
pregnancy outcomes beyond that
available through traditional prenatal
care**





Common Definitions

Preconception

- Health status and risks before first pregnancy; health status shortly before any pregnancy.

Periconception

- Immediately before conception through organogenesis

Interconception

- Period between pregnancies

North Carolina was the Pioneer for Programming in US



- Begun in 1984 in local health departments and subsequently replicated across the nation and Canada (public and private providers)

Evolution of a New Prevention Paradigm



- Preconception Health Promotion: A Focus for Obstetric Care (Moos & Cefalo, 1987)
- Preconception Health Promotion: A Women's Wellness Initiative (Moos, 2003)
- Where is the "W"oman in MCH? (Atrash, et al, 2008)

What Drove the Change?



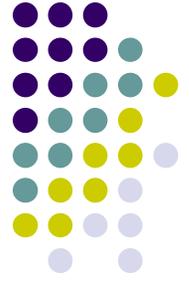
- 50% of pregnancies in the United States are categorized as unintended
- Healthy women have a higher likelihood of healthy outcomes
- The health status and habits of women in the US places them at risk for short and long term morbidities and early mortalities
- Promoting high levels of health in all women is likely to result in preconceptional health promotion for those who become pregnant
- Categorical care serves programs not people

Unintended Pregnancies



- The latest data indicates that ~50% of pregnancies are unintended
- Unintended pregnancies are not usually unwanted but, rather, mistimed
- Unintended pregnancies are associated with:
 - increased likelihood of abortion
 - exposures to potentially harmful substances
 - poor pre-pregnancy disease control
 - late entry to prenatal care
 - increased likelihood of low birth weight in offspring
 - maternal depression
 - reduced school completion and lower income attainment (if woman not married)

Who Is At Greatest Risk of Unintended Pregnancy?



- While teens ages 15-19 report 82% of their pregnancies as unintended, they contribute only 12% to the total number of unintended pregnancies in this country.
- The rate of unintended pregnancy in 2001 was substantially above average for:
 - Women ages 18-24 (26% of the total number of unintended pregnancies)
 - Unmarried, particularly co-habiting women
 - Low-income women
 - Women who have not completed high school
 - Minority women



By definition, women/couples experiencing an unintended pregnancy will not have sought preconceptional health services—Therefore we need a means to reach women with the information they need in a timely manner.

Women's Health Status



- Major determinants of poor health status in women are also important risk factors for poor pregnancy outcomes. . . .
- There is little, if anything, that could be recommended in routine preconception counseling that would not benefit the woman's health, irrespective of future conceptions

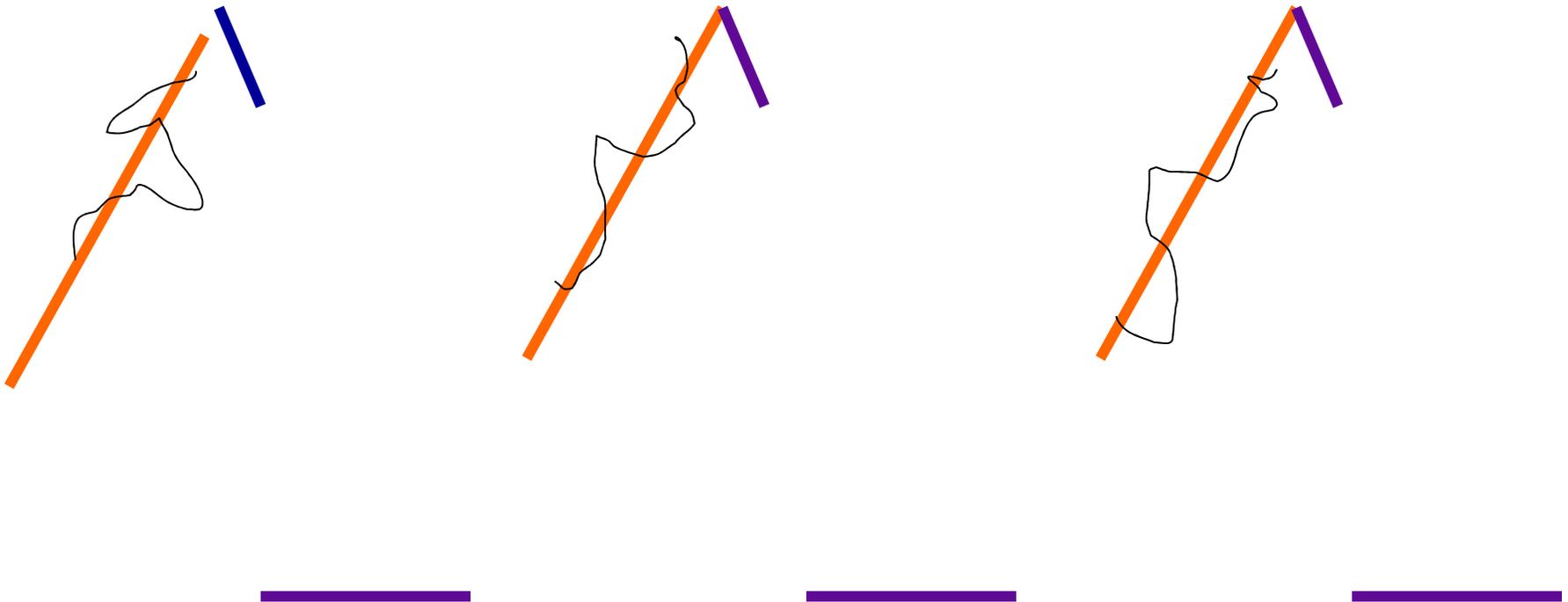
The Link Between Women's Health and Reproductive Outcomes:



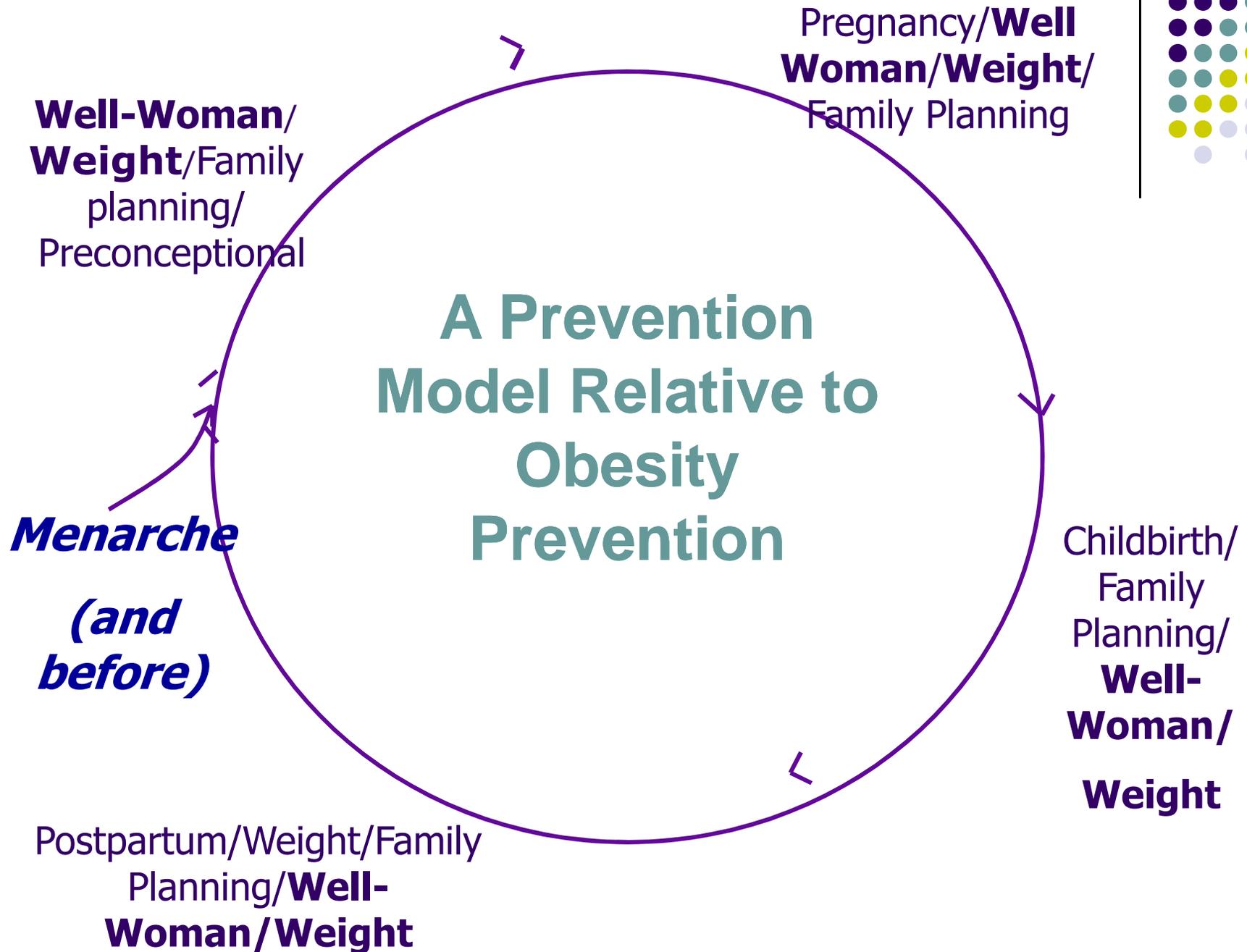
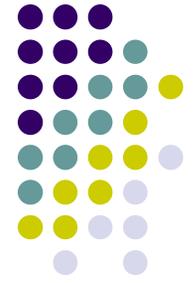
NUTRITIONAL STATUS: Overweight

- Obesity and Women's Health:
 - Diabetes
 - Hypertension
 - Cardiovascular disease
 - Disabilities
- Obesity and Pregnancy:
 - Glucose intolerance of pregnancy
 - Pregnancy induced hypertension
 - Thrombophlebitis
 - Neural tube defects
 - Prematurity

Usual Approach to Addressing Weight Status in Women of Reproductive Age



Orange lines=some but inconsistent guidance; purple lines=little, if any, guidance



SUBSTANCE USE: Tobacco



Tobacco Use and Women's Health:

Implicated in most of the leading causes of death for women:

- Heart disease (1)
- Stroke (2)
- Lung cancer (3)
- Lung disease (4)

Tobacco Use and Reproductive Health:

- Leading preventable cause of infant mortality
- Preventable cause of low birth weight and prematurity
- Associated with placental abnormalities



SUBSTANCE USE: Alcohol

- **Alcohol Use: Women's Health**

- Risk for MV and other accidents
- Risk for unintended pregnancy
- Risk for addiction
- Risk for nutritional depletions and inadequacies

- **Alcohol Use: Reproductive Health**

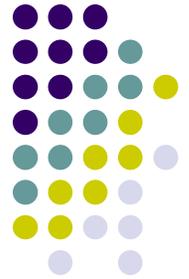
- Increased risk of delayed fertility
- Increased SABs
- FAS (only occurs with use days 17-56 of gestation)
- FAE



Categorical Care

- Silo organization results in missed prevention opportunities
 - Examples of “silos” in care of women of reproductive age
 - Prenatal care
 - Intrapartum care
 - Postpartum care
 - Contraceptive services
 - WIC
 - Nutrition counseling
 - Chronic disease care
 - Etc!!!

Missed Opportunities Abound



- In 2005 KFF report:
 - Just over 50% of women surveyed had talked to a health care professional in the last 3 years* about diet, exercise or nutrition
 - Fewer than 50% had talked about calcium intake (43%), smoking (33%) and alcohol (20%)
 - Only 31% of women ages 18-44 had talked with a provider about their sexual history in the preceding three years.

* A NCHS study (2001) found women average 3.8 encounters with the health care system **each** year



Discussion of more specific topics was even more rare:

- STDs (28%)
- HIV/AIDS (31%)
- Emergency contraception (14%)
- Domestic and dating violence (12%)



Thus, the evolution. . .

- Higher levels of women's wellness will result in healthier women across the lifespan
- By focusing on women's wellness preconceptional health promotion will be achieved
- Higher levels of women's wellness will increase the likelihood of healthier pregnancy outcomes for those women who do become pregnant
- A move away from categorical service delivery will result in fewer missed opportunities



If you take care of women of reproductive age, it's not a question of whether you provide preconception care, rather it's a question of what kind of preconception care you are providing.

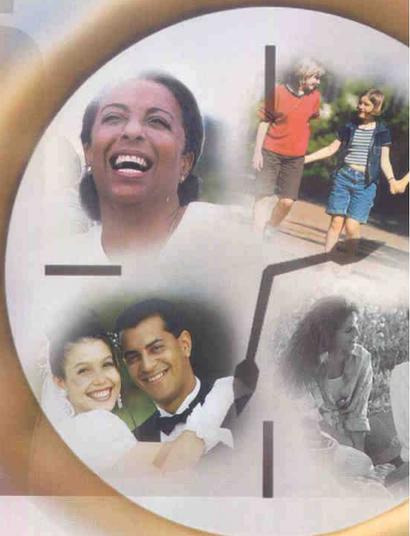
Joseph Stanford and Debra Hobbins

National Momentum Grows



- CDC convenes Select Panel on Preconception Care and Health Care in 2005
- CDC and Select Panel release National Recommendations on Preconception Health and Health Care, 2006

National Summit on Preconception Care

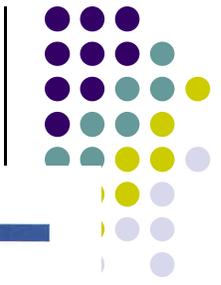


June 21 - 22, 2005

The Atlanta Marriott Century Center
Atlanta, Georgia



of Dim
Saving babies, together



MMWR™

Morbidity and Mortality Weekly Report

Recommendations and Reports

April 21, 2006 / Vol. 55 / No. RR-6

Recommendations to Improve Preconception Health and Health Care — United States

A Report of the CDC/ATSDR Preconception Care
Work Group and the Select Panel
on Preconception Care

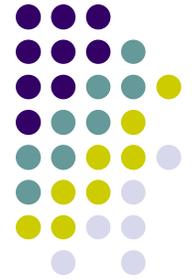
INSIDE: Continuing Education Examination

DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

Goals for CDC/Select Panel Initiative to Improve Preconception Health



- **Goal 1:** Improve the knowledge, attitudes and behaviors of men and women related to preconception health
- **Goal 2:** Assure that all US women of childbearing age receive preconception care services—screening, health promotion and interventions—that will enable them to enter pregnancy in optimal health
- **Goal 3:** Reduce risks indicated by a prior adverse pregnancy outcome through interventions in the interconception period
- **Goal 4:** Reduce disparities in adverse pregnancy outcomes

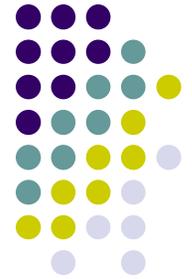


- Five Workgroups of Select Panel established
 - Clinical Practice
 - Public Health and Community-Based Programs
 - Consumer Education and Social Marketing
 - Public Policy and Finance
 - Research

Some of the Work that Has Been Accomplished



- The Clinical Content of Preconception Health published (evidence-based recommendations)
- The National online Preconception Curriculum and Resources Guide for Clinicians established (www.beforeandbeyond.org)
- The third National Summit on Preconception Health to be held in Tampa, June, 2011



- Ad Hoc Committee of Select Panel providing guidance and direction around reproductive life planning (webinar available on www.beforeandbeyond.org)
- National Healthy Start Programs (104) involved in learning collaboratives to identify best practices around interconception care
- Every Woman sites for reaching consumers have been created in many states(CA, FL, NC and SE state consortium

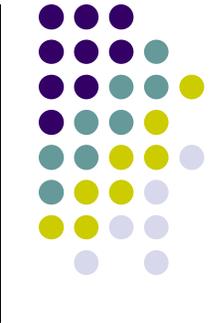


- California (March of Dimes, ACOG, state preconception office) creating new evidence based guidance to maximize the benefits of the postpartum visit
- Many supplements/articles/protocols have been published (many available on www.beforeandbeyond.org)

Complementary Initiatives



- Interest in fetal origins of disease (the “womb to tomb” framework)



Complementary Initiatives



- Interest in fetal origins of disease (the “womb to tomb” framework)
- Growing interest in life course perspective beyond preconception health promotion and pregnancy outcomes

Two Explanatory Models Foundational to the Life Course Perspective



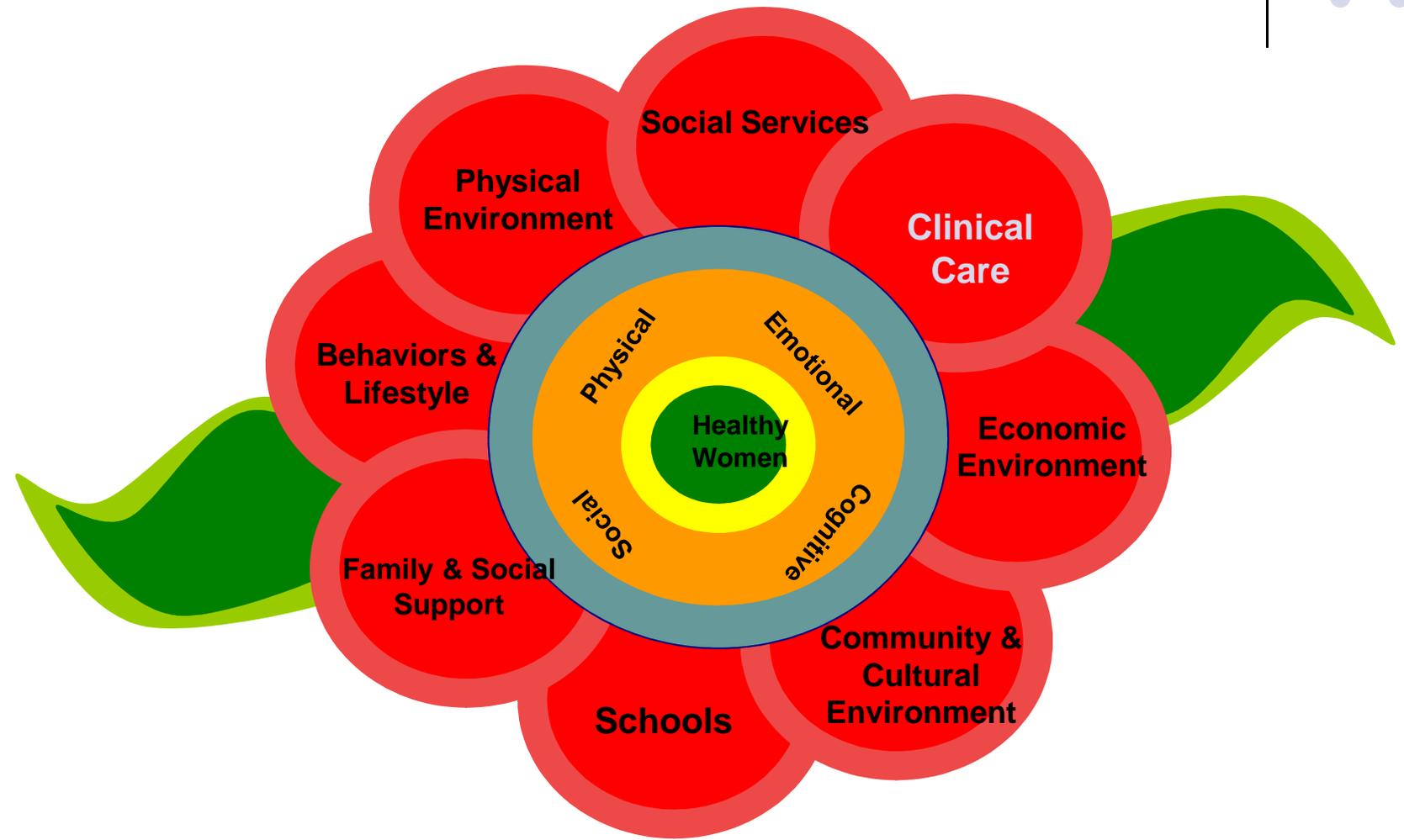
- Early Programming Model:
 - Posits that early life exposures (including in-utero exposures) influence health status throughout lifetime as well as reproductive outcomes
- Cumulative Pathways Model
 - Posits that chronic accommodation to stress results in wear and tear on the body's adaptive systems thus affecting health status over time and, thus, reproductive outcomes

Complementary Initiatives



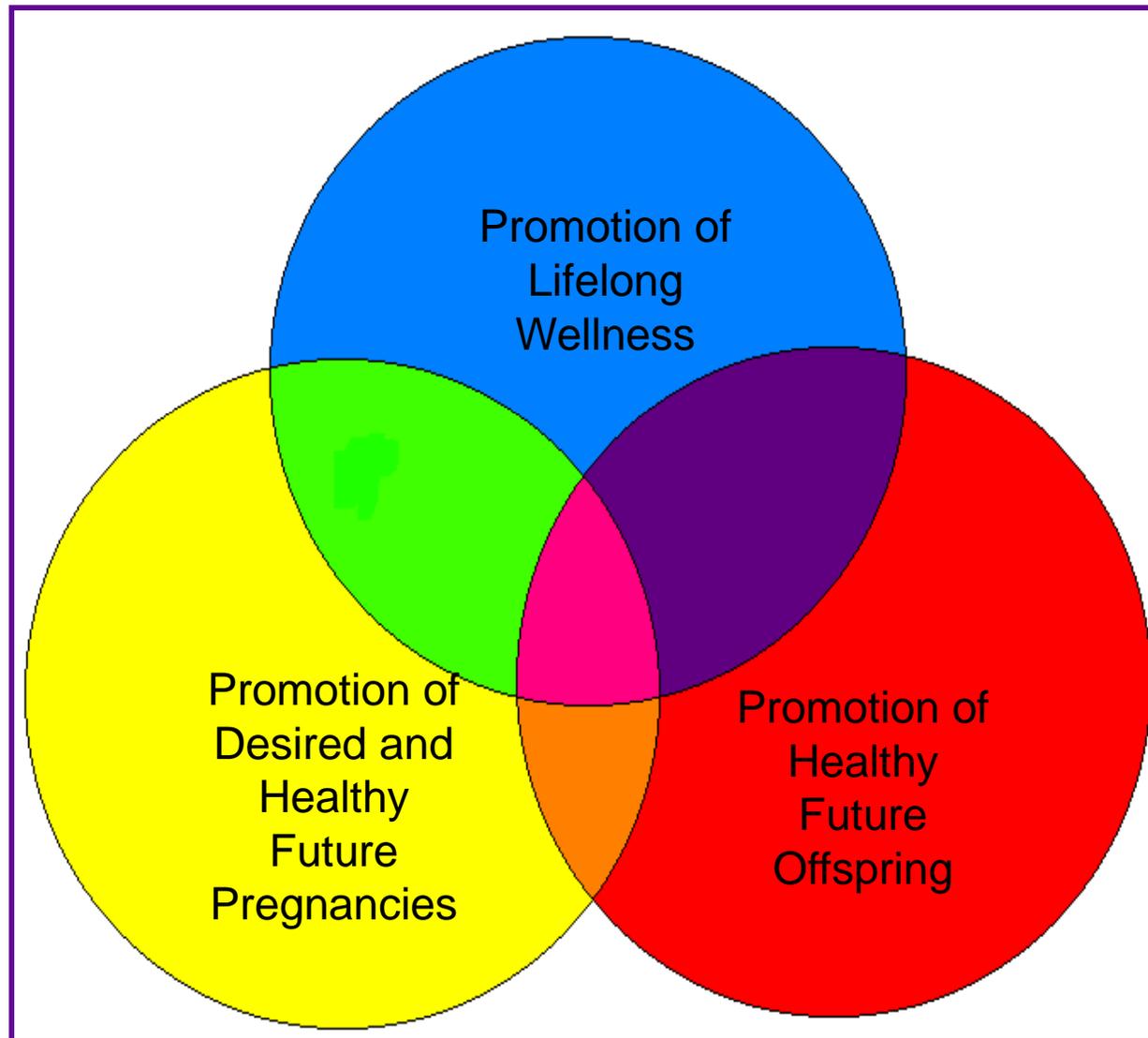
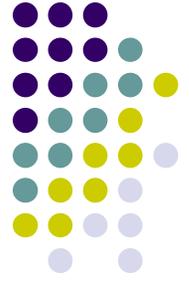
- Interest in fetal origins of disease (the “womb to tomb” framework)
- Growing interest in life course perspective beyond preconception health promotion and pregnancy outcomes
- Increasing investigations of social determinants of health and their impact on racial disparities in health outcomes

A Clinical Approach to Impacting the Life Course Cannot Stand Alone



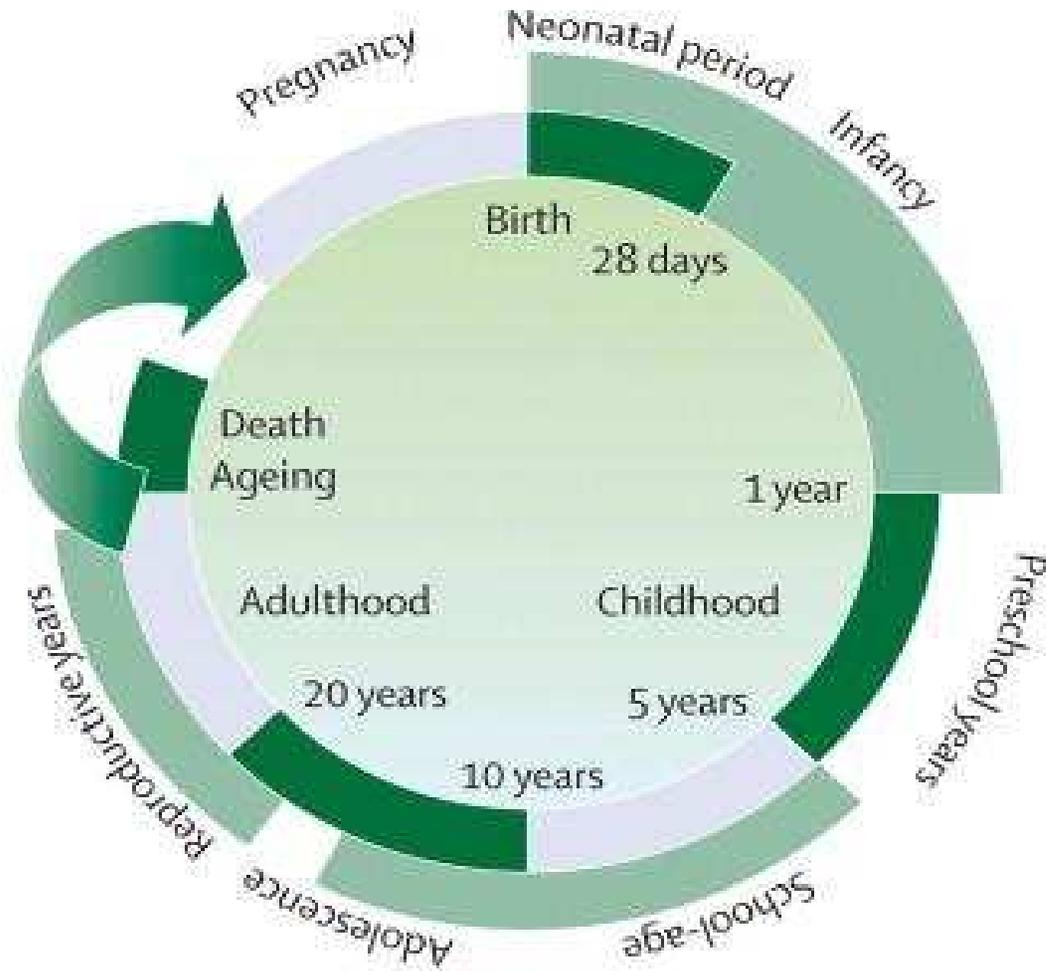
Used with permission of The Nemours Foundation, Division of Health and Prevention Services. Adapted from the 2005 Delaware Children's Health Chartbook.

The Goal: Making a Difference in the Life Course





A



Source: The Lancet
Volume 370, Oct. 13, 2007
Page 1360



**The child cannot wait. Many things we
need can wait, but she cannot. . . To her
we cannot say “tomorrow” her name is
today.**

G.Mistral



Neither the child nor the woman

Λ can wait. Many things we need can wait, but they cannot...To them, we cannot say “tomorrow” for their names are “today”.

With hopeful forgiveness
from G. Mistral