Infant Mortality Prevention: Updates from CDC

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Secretary's Advisory Committee on Infant Mortality

April 25, 2013

Outline

- CDC's Impact Pyramid for Infant Mortality Prevention
- Updates on CDC Activities
- Opportunities for Future Collaboration

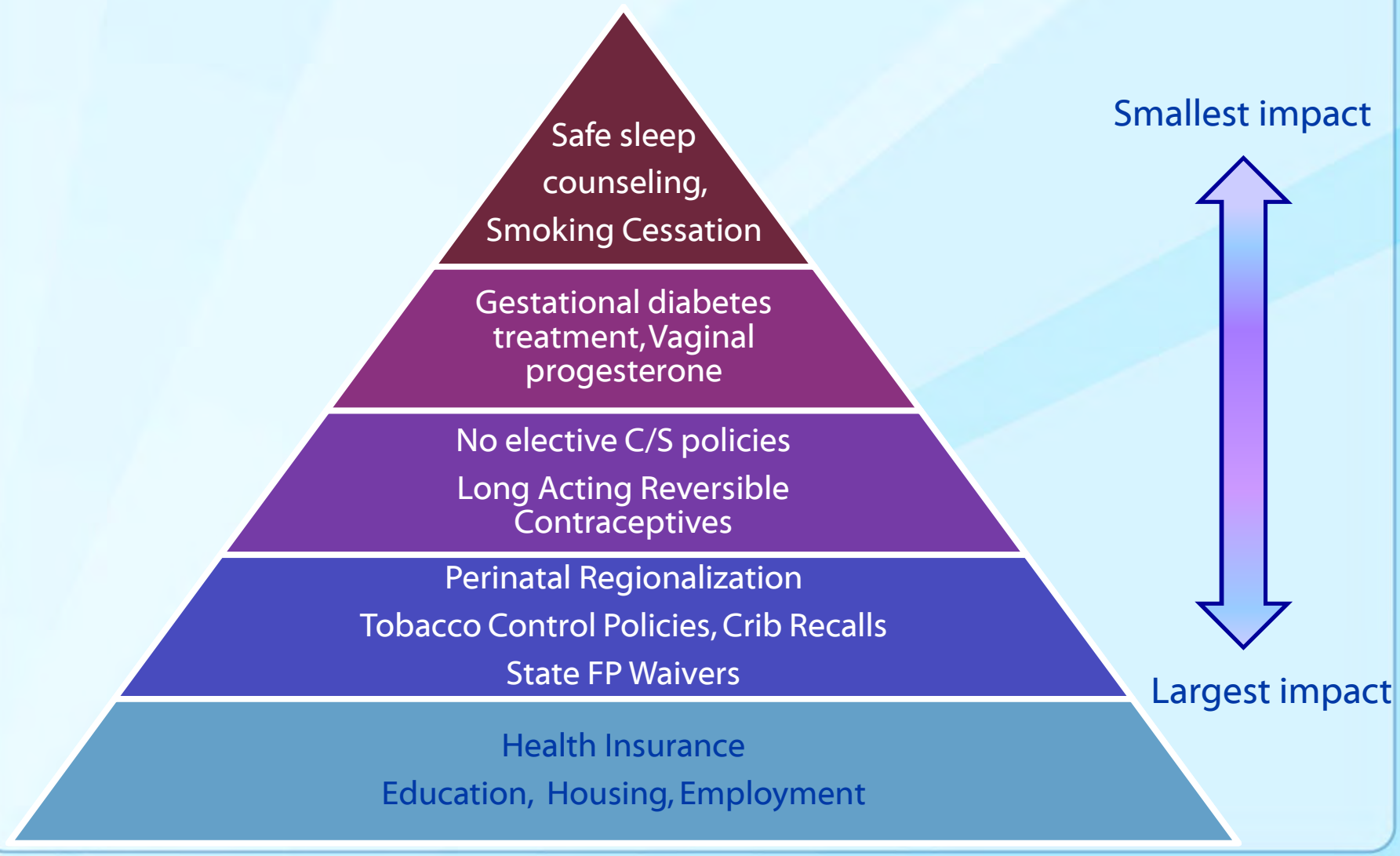
CDC's Impact Pyramid: Factors that Affect Health

Source: Frieden TR. A framework for public health impact: The health impact pyramid. AJPH 2009

Infant Mortality Prevention Strategies

- Improving Women's Health prior to conception
- Treatment of chronic conditions in pregnancy
- Long acting reversible contraception (birth spacing)
- Safe infant sleep, injury prevention
- New models of care (e.g. Centering)
- Improving quality of perinatal care (e.g. reducing non-indicated C-Sections)
- Perinatal regionalization
- Health insurance, Employment

Illustration: Impact Pyramid for Infant Mortality Prevention



Source: Frieden TR. A framework for public health impact: The health impact pyramid. AJPH 2009

The Contribution of Cigarette Smoking to Infant Mortality

- Prenatal smoking occurs in 11.5% of all U.S. live births
- Smoking in pregnancy accounts for:
  - 23-34% of deaths due to SIDS
  - 5-7% of deaths from preterm-related causes
- Potentially preventable

Source: Dietz PM, England LJ, Shapiro-Mendoza CK, et al. Infant morbidity and mortality attributable to prenatal smoking in the U.S. Am J Prev Med 2010 Jul .38(1)

Smoking Cessation—The Tips Campaign

Office of Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion

Smoking Cessation— The Tips Campaign

- **Both of Terrie's children were born premature.**

"I can't help but think it was because of my cigarette smoking.

My fear now is that I won't be around to see my grandchildren graduate or get married."

Office of Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion

Newborn Screening for Critical Congenital Heart Disease (CCHD)

- **Newborn screening for CCHD by pulse oximetry recommended by the Secretary's Advisory Committee on Heritable Disorders in Newborns and Children in October 2010**
- **Represents about 25% of all congenital heart disease**
- **Estimated 300 or more infants with unrecognized CCHD discharged yearly from US newborn nurseries**
  - Risk for serious complications, including death, shortly after birth
- **Recommendation endorsed by Secretary Sebelius in September 2011 and CCHD screening added to the Recommended Uniform Screening Panel**

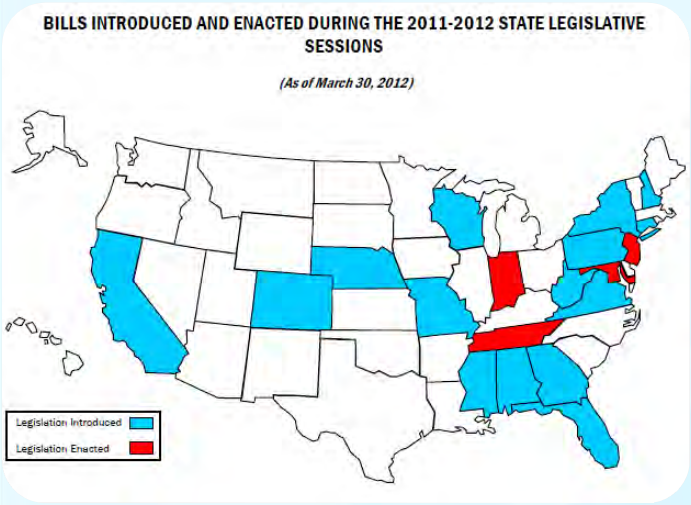
Progress on Implementing CCHD Screening

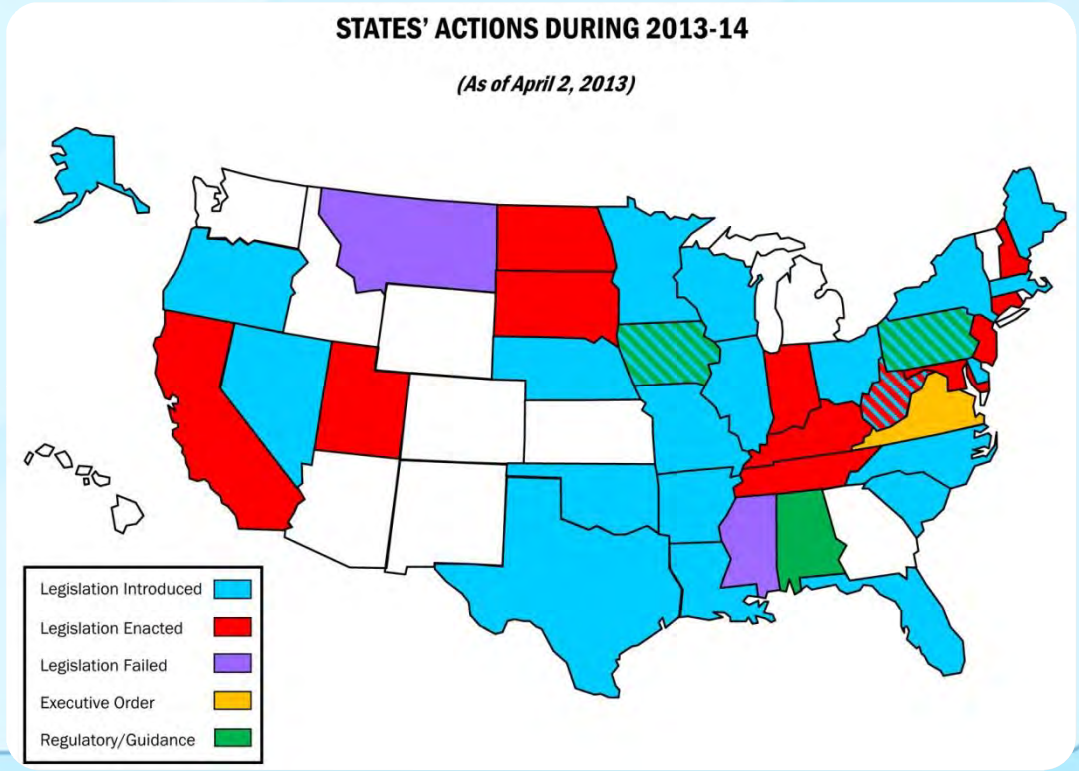
October 2010
SACHDNC
Recommendation

September 2011
HHS Secretary
Endorsement

March 2012

April 2013





CDC's Role: Newborn Screening for Critical Congenital Heart Disease (CCHD)

- CDC assigned three tasks by the Secretary:

1. Evaluate state surveillance and tracking to monitor the effectiveness of CCHD newborn screening programs
2. Conduct a cost-effectiveness analysis of newborn screening for the early identification of CCHD
3. Leverage an electronic health record framework for congenital heart defects, including CCHD

CDC Activities*: Newborn Screening for Critical Congenital Heart Disease (CCHD)

- **Assessment of state birth defects surveillance systems capacity to monitor effectiveness of CCHD screening**
  - *MMWR 2012; 61:849-853*
  - Identified barriers including the lack of relationships between state birth defects and newborn screening programs
- **Field investigations of CCHD screening in two states: one with mandated screening, one with voluntary screening**
  - New Jersey – In first 3 months, 98% of infants were screened and hospital staff reported that screening was easily added to other routine tasks – *MMWR 2013; 62:292-294*
  - Georgia – Barriers identified including no clear follow-up plan for babies who screen positive and concerns about costs to begin and maintain screening – *MMWR 2013; 62:288-291*

*Led by National Center for Birth Defects and Developmental Disabilities

CDC Activities*: Newborn Screening for Critical Congenital Heart Disease (CCHD)

- **Survival study of infants with CCHD showed that survival up to one year has improved over time, however, the chance of infant death is still high –** *Pediatrics, April 2013.*
  - Provides important information about survival of infants with CCHDs from 1979-2005, before screening started
  - Identifies what factors affect survival
- **Other activities in progress:**
  - Time-motion studies and resource utilization questionnaire to assess hospital cost burden as part of the NJ field investigation
  - Collaboration with the National Library of Medicine and the National Heart, Lung and Blood Institute to map CCHD conditions to various coding systems to facilitate meaningful data exchange between stakeholders

*Led by National Center for Birth Defects and Developmental Disabilities

Perinatal Quality Improvement

- **CDC is funding 3 state perinatal collaboratives**
  - California, Ohio, New York
- **Increasing Interest -- March Webinar**
  - 176 registrants, from 35 states
- **Next Webinar: Today! (don't worry—it's archived)**
- **Responses to the "Describe your interest in PQCs" :**

"Founding member and member of executive board for PQCI - Perinatal Quality Collaborative of Illinois. Responsible for leading Neonatal QI projects. Currently leading PQCI involvement in NCABSI project."

"We have a perinatal collaborative in process here in WA State and want to know what other states are doing."

Perinatal Quality Collaboratives

- **Responses indicate we are reaching the right people**

"I am the consultant hired from our state chapter of March of Dimes to help build the newly formed Kansas Perinatal Quality Collaborative."

"As the marketer, I always want to see what other state collaboratives are doing. We are a young collaborative, and I am trying to generate strategic ideas for building membership."

"Utah is in the process of developing a PQC. We are currently in the recruitment phase so this will be very helpful information."

"We are in the beginning phase of creating a Georgia Perinatal Quality Collaborative."

Source: http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PQ

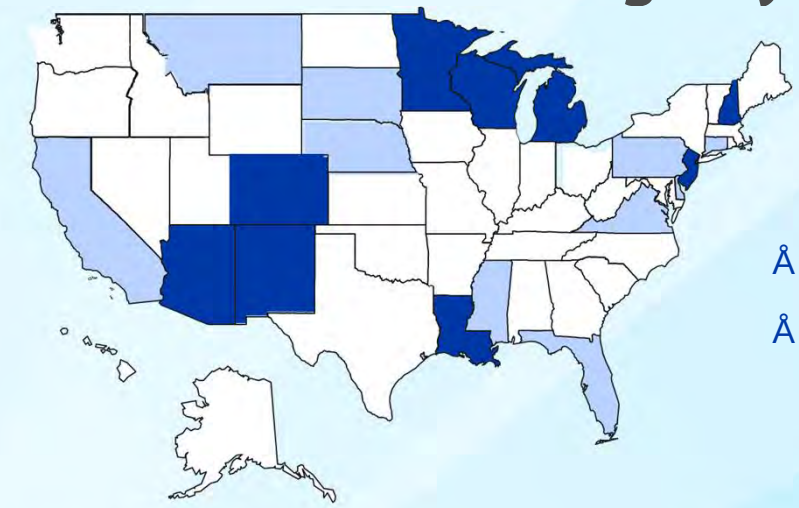
CDC's Sudden Unexpected Infant Death (SUID) Initiative

Accomplishments:

- **Created standardized SUID investigation form for medicolegal investigators**
- **Trained more than 20,000 medicolegal professionals to conduct comprehensive SUID investigations**
- **Initiated state-based SUID Case Registries, building on existing state and local Child Death Review programs**
- **Provide technical assistance to SUID Case Registry state grantees to use their data to:**
  - Improve systems that investigate deaths and serve families
  - Promote Safe Sleep education activities

CDC's Sudden Unexpected Infant Death (SUID) Initiative: Next Steps

- **Expand the SUID Case Registry to new states**



States: 19, Nebraska negotiating

- Dark blue = state grantee
- Light blue = voluntarily collecting SUID data

- **Collaborate with NIH (NHLBI, NINDS) to use the SUID Case Registry program to build Sudden Cardiac Death and Sudden Unexpected Death in Epilepsy Registries**

Promoting Preconception Health: "Show your love" Campaign

http://www.cdc.gov/preconception/showyourlove/index.html

Preconception Health: Core Indicators

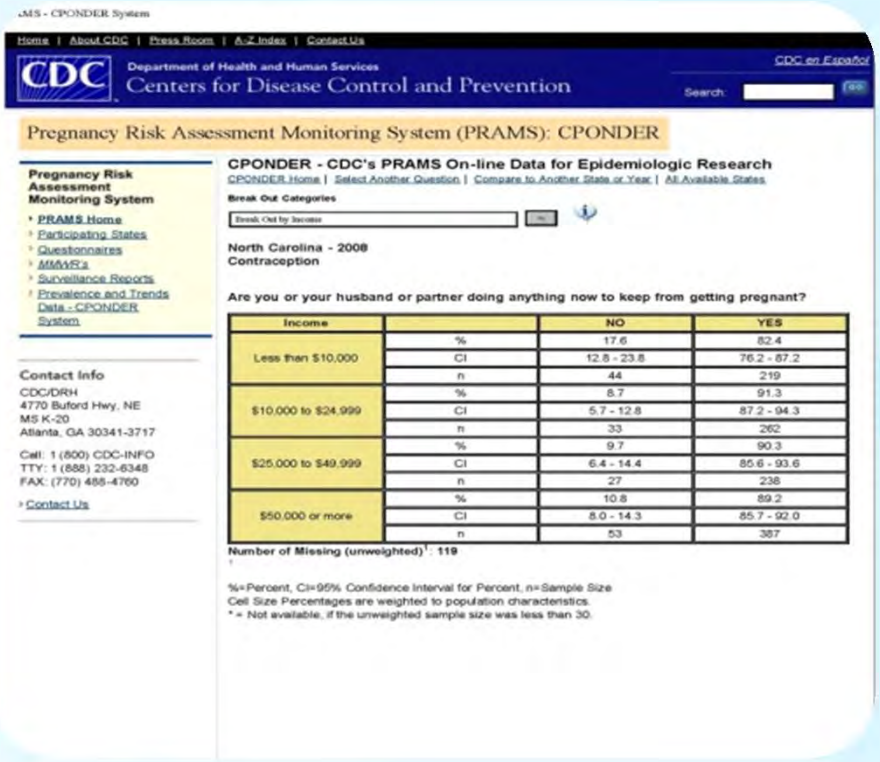
- Seven participated on the Core State Preconception Health Indicators Working Group *
  - California, Delaware, Florida, Michigan, North Carolina, Texas, and Utah

- Eleven domains of preconception health were identified (with 45 indicators):
  1. general health status and life satisfaction,
  2. social determinants of health,
  3. health care,
  4. reproductive health and family planning,
  5. tobacco, alcohol and substance use,
  6. nutrition and physical activity,
  7. mental health,
  8. emotional and social support,
  9. chronic conditions,
  10. infections, and
  11. genetics/epigenetics.

Source: * Core State Preconception Health Indicators; A Voluntary, Multi-State Selection Process; Danielle L. Broussard, William B. Sappenfield, Chris Fussman, Charlan D. Kroelinger, Violanda Grigorescu; Maternal and Child Health J. 2011;15(2):158-168."

Preconception Health: Core Indicators (cont.)

- PRAMS is the data source for 24 of the 45 core indicators
- CPONDER is a web-based query system created to easily access data collected through PRAMS.



MS - CPONDER System

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CDC Department of Health and Human Services Centers for Disease Control and Prevention

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Search:

Pregnancy Risk Assessment Monitoring System (PRAMS): CPONDER

Pregnancy Risk Assessment Monitoring System

- PRAMS Home
- Participating States
- Questionnaires
- MMWRs
- Surveillance Reports
- Prevalence and Trends Data - CPONDER System

Contact Info

CDC/DRH
4770 Buford Hwy, NE
MS K-20
Atlanta, GA 30341-3717

Call: 1 (800) CDC-INFO
TTY: 1 (888) 232-6348
FAX: (770) 488-4760

- Contact Us

CPONDER - CDC's PRAMS On-line Data for Epidemiologic Research

CPONDER Home | Select Another Question | Compare to Another State or Year | All Available States

Break Out Categories

Break Out by Income

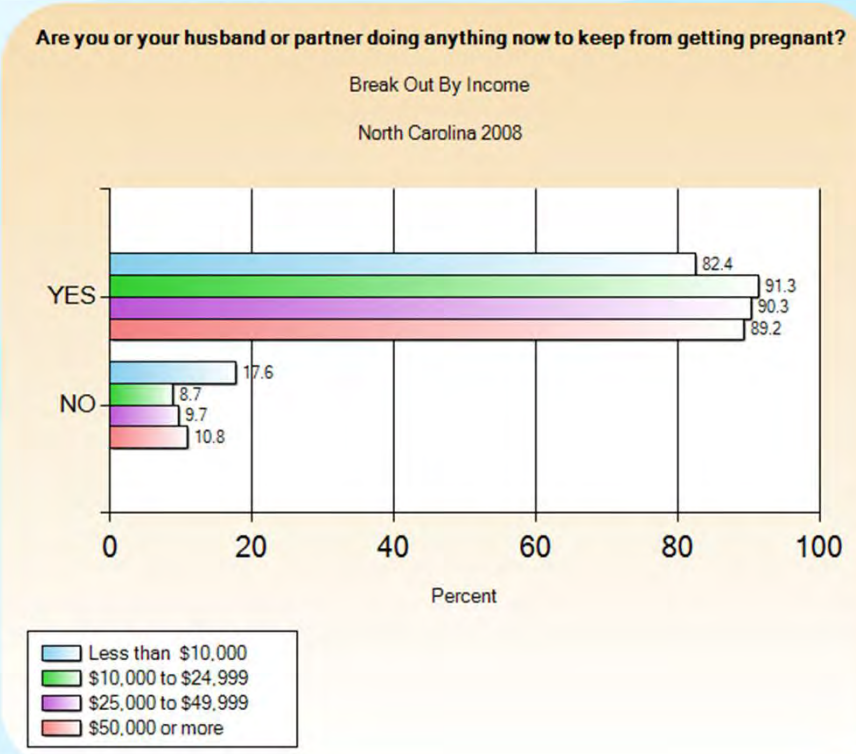
North Carolina - 2008
Contraception

Are you or your husband or partner doing anything now to keep from getting pregnant?

Income		NO	YES
Less than $10,000	%	17.6	82.4
	CI	12.8 - 23.8	76.2 - 87.2
	n	44	219
$10,000 to $24,999	%	8.7	91.3
	CI	5.7 - 12.8	87.2 - 94.3
	n	33	262
$25,000 to $49,999	%	9.7	90.3
	CI	6.4 - 14.4	85.6 - 93.6
	n	27	238
$50,000 or more	%	10.8	89.2
	CI	8.0 - 14.3	85.7 - 92.0
	n	53	387

Number of Missing (unweighted)[1]: 119

%=Percent, CI=95% Confidence Interval for Percent, n=Sample Size
Cell Size Percentages are weighted to population characteristics.
* = Not available, if the unweighted sample size was less than 30.



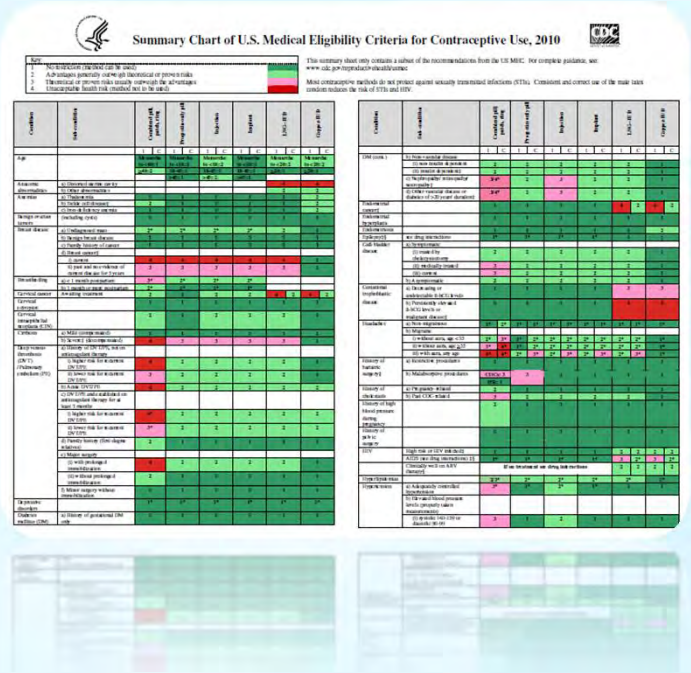
Preconception Indicators in CPONDER

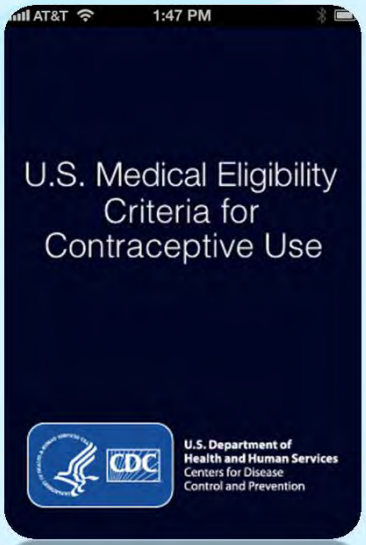
Domain	CPONDER Indicator	Indicator Description	Question in PRAMS	Core or Standard Years Available	Which States
Chronic Conditions: Diabetes	Indicator of whether mother reported having diabetes that began before recent pregnancy (years 2009-2011)	Percentage of women aged 18–44 years having a live birth who had ever been told by a health care provider that they had Type I or Type II diabetes before their most recent pregnancy	Before you got pregnant with your new baby, were you ever told by a doctor, nurse, or other health care worker that you had Type I or Type II diabetes?	PRAMS Core 2009–2011	All PRAMS states
Chronic Conditions: Hypertension	During the 3 months before you got pregnant with your new baby, did you have high blood pressure (hypertension)?	Percentage of women aged 18–44 years having a live birth who reported that they had hypertension during the 3 months before their most recent pregnancy	During the 3 months before you got pregnant with your new baby, did you have any of the following health problems? High blood pressure (hypertension)	PRAMS Standard 2004–2008 (6 states) PRAMS Standard 2009–2011 (10 states)	Years 2004–2008: DE, FL, MD, MN, WI, WV Years 2009–2011: DE, HI, MD, MI, MN, MO, UT, WI, WV, WY
Health Care Postpartum Checkup	Since your new baby was born, have you had a postpartum checkup for yourself?	Percentage of women aged 18-44 years having a live birth who had a postpartum checkup	Since your new baby was born, have you had a postpartum checkup for yourself? (A postpartum checkup is the regular checkup a woman has about 6 weeks after she gives birth).	PRAMS Standard 2004–2008 (18 states)	Years 2004–2008: AR, GA, HI, MA, MN, MO, NJ, NYC, NY, OH, RI, SC, TN, VT, WA, WI, WV, WY Years 2009–2011: AR, GA, HI, MA, MI, MN, MO, NJ, NYC, NY, OH, RI, TN, TX, UT, WA, WI, WV

Source: TBI

Reducing Teen & Unintended Pregnancy

Tools, wheels and apps!


Summary Chart of U.S. Medical Eligibility Criteria for Contraceptive Use, 2010



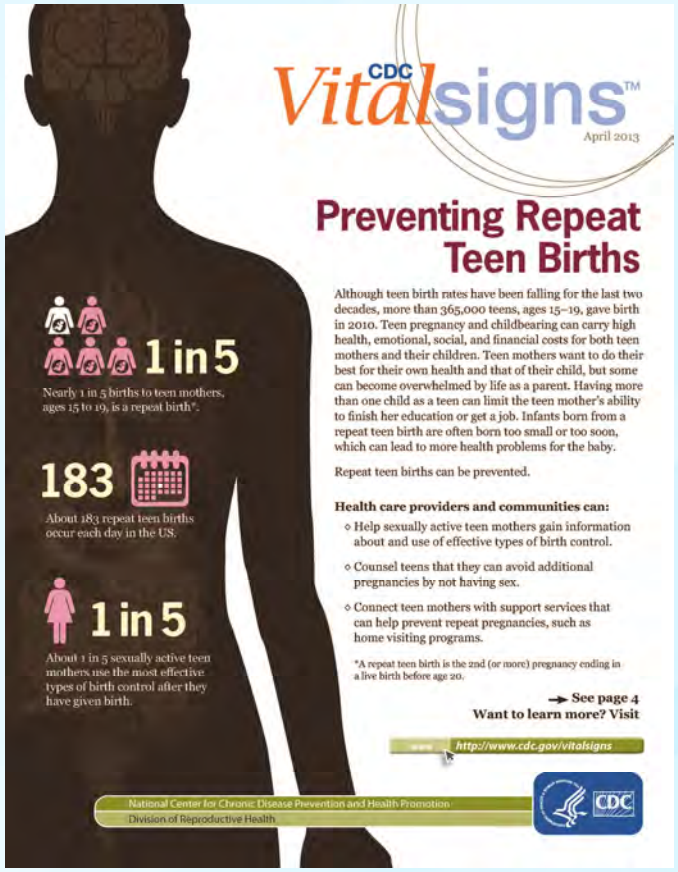
Available online at www.cdc.gov/reproductivehealth

Coming Soon!
U.S. Selected Practice Recommendations (SPR) for Contraceptive Use

- **Guidance for health care providers on common, yet complex issues in management of contraception**
  - Due be published in CDC's MMWR in May
  - Systematic reviews published in May 2013 issue of *Contraception*

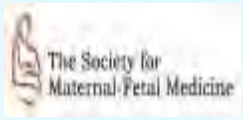
- **Examples of guidance**
  - When to start contraception
  - "Quick start" - starting a woman on contraception on the same day as her visit
  - What exams and tests are needed (or not needed) before starting contraception

CDC's Teen Pregnancy Winnable Battle: Improving Social Determinants of Health



www.cdc.gov/teenpregnancy

Partnerships



Opportunities for Future Research and Collaboration

- **COIIN**
  - Data for decision making
- **Maternal Mortality Initiative**
- **Surveillance of Preventive Services**
- **Tips from Smokers Campaign**
- **CDC**
  - National linkage of ART with vital records
  - States Monitoring ART (SMART collaborative)
    - 10 states represent 50% of ART births
    - ART a significant contributor to multiple gestation, very preterm, and low birth weight births
  - Surveillance of non-ART fertility treatments

Collaborative on Innovation and Improvement Network (COIIN): CDC Participants

Division of Reproductive Health

COIIN Co-Team Leads

- Wanda Barfield: Director—P erinatal Regionalization Team
- Carrie Shapiro Mendoza: Senior Scientist—Safe Sleep Team

COIIN Technical, Data, and State Leads

- Dabo Brantley: Epidemiologist, Applied Sciences Branch
- Elizabeth Conrey: CDC Assignee, Ohio Department of Health
- David Goodman: Epidemiologist, Field Response Branch*
- Laurin Kasehagen: CDC Assignee, CityMatCH
- Lyn Kieltyka: CDC Assignee, Louisiana Department of Health
- Brian Morrow: Statistician, PRAMS
- Cheryl Robbins: Epidemiologist, Maternal/Infant Health Branch
- Angela Rohan: CDC Assignee, Wyoming Department of Health
- Van Tong: Epidemiologist, Maternal/Infant Health Branch

*Proposed new branch within DRH; pending approval.

Thank you!