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
Clinical Interventions
Long-lasting Protective interventions
Changing the Context
Socio-economic Factors

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

Smoking Cessation—The Tips Campaign

A Tip from a Former Smoker

Record Your Voice for Loved Ones While You Still Can.

It is Oral, Head & Neck Cancer Awareness Week. You can quit. Call 1-800-QUIT-NOW.

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

BILLS INTRODUCED AND ENACTED DURING THE 2011-2012 STATE LEGISLATIVE SESSIONS
(As of March 30, 2012)

STATES’ ACTIONS DURING 2013-14
(As of April 2, 2013)

LEGISLATION INTRODUCED
LEGISLATION ENACTED
LEGISLATION FAILED
EXECUTIVE ORDER
REGULATORY/GUIDANCE
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 PQCIs”:

  “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

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

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

States: 19, Nebraska negotiating
Promoting Preconception Health: “Show your love” Campaign

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

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.
# Preconception Indicators in CPONDER

<table>
<thead>
<tr>
<th>Domain</th>
<th>CPONDER Indicator</th>
<th>Indicator Description</th>
<th>Question in PRAMS</th>
<th>Core or Standard Years Available</th>
<th>Which States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Conditions: Diabetes</td>
<td>Indicator of whether mother reported having diabetes that began before recent pregnancy (years 2009-2011)</td>
<td>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</td>
<td>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?</td>
<td>PRAMS Core 2009–2011</td>
<td>All PRAMS states</td>
</tr>
<tr>
<td>Chronic Conditions: Hypertension</td>
<td>During the 3 months before you got pregnant with your new baby, did you have high blood pressure (hypertension)?</td>
<td>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</td>
<td>During the 3 months before you got pregnant with your new baby, did you have any of the following health problems?</td>
<td>PRAMS Standard 2004–2008 (6 states)</td>
<td>Years 2004–2008: DE, FL, MD, MN, WI, WV Years 2009–2011: DE, HI, MD, MI, MN, MO, UT, WI, WV, WY</td>
</tr>
<tr>
<td>Health Care Postpartum Checkup</td>
<td>Since your new baby was born, have you had a postpartum checkup for yourself?</td>
<td>Percentage of women aged 18–44 years having a live birth who had a postpartum checkup</td>
<td>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).</td>
<td>PRAMS Standard 2004–2008 (18 states)</td>
<td>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</td>
</tr>
</tbody>
</table>

Source: TBI
Reducing Teen & Unintended Pregnancy

Tools, wheels and apps!

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

Preventing Repeat Teen Births

Although teen birth rates have been falling for the last two decades, more than 390,000 teens, ages 15–19, gave birth in 2010. Teen pregnancy and childbirth can carry high health, emotional, social, and financial costs for both teen mothers and their children. Teen mothers want to do their best for their own health and that of their child, but some can become overwhelmed by life as a parent. Having more than one child as a teen can limit the teen mother’s ability to finish her education or get a job. Infants born from a repeat teen birth are often born too small or too sick, which can lead to more health problems for the baby.

Repeat teen births can be prevented.

Health care providers and communities can:
- Help sexually active teen mothers gain information about and use of effective types of birth control.
- Counsel teens that they can avoid additional pregnancies by not having sex.
- Connect teen mothers with support services that can help prevent repeat pregnancies, such as home visiting programs.

Repeat teen birth is the end of a teen pregnancy ending in a baby birth between ages 15 and 19.

See page 4 for more information.

Visit www.cdc.gov/teenpregnancy
Partnerships

Using Epidemiology to Improve Maternal and Child Health
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—Perinatal 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!