15TH ANNUAL MATERNAL AND CHILD HEALTH EPIDEMIOLOGY (MCH EPI) CONFERENCE

MAKING METHODS AND PRACTICE MATTER FOR WOMEN, CHILDREN, AND FAMILIES

December 9-11, 2009 | Tampa, Florida

PROGRAM BOOK

This Conference is jointly sponsored by:
U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
Health Resources and Services Administration
Maternal and Child Health Bureau
CityMatCH

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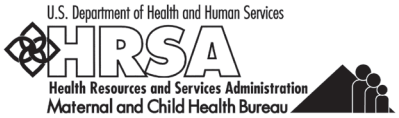
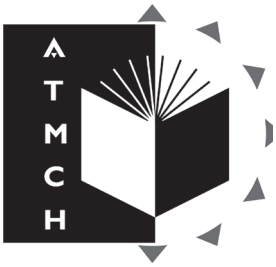
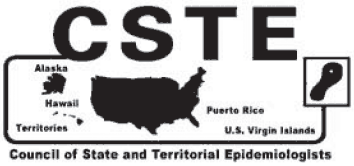


Silver Conference Partners





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Program Highlights

Conference Goals and Objectives

Organizers of the 15th Annual Maternal and Child Health Epidemiology (MCH EPI) Conference are excited about continuing to offer MCH professionals a platform to share experiences, enhance knowledge, and generate new ideas for promoting and improving the health of women, children and families. The 15th Annual MCH EPI Conference will bring together MCH professionals and public health practitioners from across the United Sates and the U.S.-Mexico Border. Hosted by the Centers for Disease Control and Prevention (CDC), Maternal Child Health Bureau/Health Services and Resources Administration (MCHB/HRSA) and City**M**at**CH**, this event will offer sessions led by researchers, federal officials, advocates, health care providers and staff of state MCH pPrograms. As always, it is our hope that this year's conference will prove yet another success and develop participants' analytic skills and knowledge base to promote program effectiveness.

During the conference, participants will recognize the importance of bridging epidemiologic methods and MCH practice for effective program development, delivery and evaluation. Conference discussions will focus on the application of MCH EPI methodologyepidemiologic methods to improve maternal and child health outcomes.

Registration Information

Registration will be open during the following hours in the Tower Pool Windows area :

Date:	**Time:**
Tuesday, December 8, 2009	5:00 PM – 7:00 PM
Wednesday, December 9, 2009	7:00 AM – 4:00 PM
Thursday, December 10, 2009	7:00 AM – 4:00 PM
Friday, December 11, 2009	7:30 AM – 12:00 PM

Program Highlights

Program At-A-Glance

Provides a quick overview of the entire program with room assignments.

Breakout Sessions, Workshops and Special Sessions

The concurrent, classroom-style breakout sessions are smaller in size and highlight various MCH topics. There will be opportunities to discuss each presentation as well as establish or improve partnerships. Valuable workshops and special sessions are also choices for breakout sessions. Please consult each day's agenda for the topics. Seating will be on a "first come, first serve" basis.

Plenary Sessions

The plenary sessions for all participants focus on different aspects of Maternal and Child Health (MCH). All plenary sessions are held in the AUDUBON ABC.

Poster Reception

This is a great opportunity to leisurely browse visual displays of MCH epidemiology work and talk directly with the author. The authors will be available to discuss their poster presentations on Wednesday, December 9, from 12:00 PM to 2:00 PM in the AUDUBON PAVILION . Posters are available for viewing from Wednesday morning through Thursday evening.

Career Mentoring Session for Students and Young Professionals

This opportunity is for students, interns, fellows, young professionals and those looking for a career change. It will be held on Wednesday, December 9, 5:30 PM to 7:00 PM in AUDUBON DEF. You will be able to discuss career tracks, learning opportunities, job possibilities and more with senior MCH epidemiologists from CDC, HRSA, March of Dimes, academia, and state/local public health agencies. This session is organized to have you meet several potential contacts/mentors, have preliminary conversations, and arrange potential times and mechanisms to connect for further discussions during the conference or afterwards. This is a rare opportunity to meet such a diverse set of nationally recognized leaders.

National Maternal and Child Health Epidemiology (MCH EPI) Awards Luncheon

Join the Coalition for Excellence in MCH Epidemiology as they present the 2009 awards celebrating this year's top achievement to improve the health of women and children. The awards will be presented during this year's National MCH EPI Award Luncheon on Thursday, December 10, 11:45 AM to 1:45 PM in the AUDUBON PAVILION.

Program Highlights

Job Board

If you would like to post a list of open positions at your agency or discover what positions are available, don't forget to stop by the designated Job Board throughout the conference.

Evaluation Forms

Conference organizers are requesting that all participants complete the overall conference evaluation form, which will be distributed during the National MCH EPI Awards Luncheon. It The evaluation form will also be available at the registration desk. Your feedback is important to planning future conferences.

Recreational Activities

The Tampa area offers great opportunities for entertainment. For further entertainment information, please do not hesitate to visit the hotel's concierge desk.

Cellular Phone and Pager Courtesy

As a courtesy to presenters and all meeting attendees, please turn ringers on phones and pagers OFF (or silent) during the conference sessions. Use of cellular phones is restricted to the meeting room foyers and public areas outside of all meeting rooms.

Program At-A-Glance

Monday, December 7, 2009 — Pre-Conference

8:00 AM - 5:00 PM	Pre-Conference Training: Practical Approaches to State MCH Data Records Linkage Practice: Supporting Policy and Programs
8:00 AM - 5:00 PM	Pre-Conference Training: Communicating Epidemiology Research Results Effectively to Intended Audiences
8:00 AM - 5:00 PM	Pre-Conference Training: Concentration in Basic Geospatial Methods for Public Health Professionals MCH Population Outcomes
8:00 AM - 4:30 PM	Pre-Conference Training: City**M**at**CH** PPOR Workshop

Tuesday, December 8, 2009 — Pre-Conference

8:00 AM - 5:00 PM	Pre-Conference Training: Practical Approaches to State MCH Data Records Linkage Practice: Supporting Policy and Programs
8:00 AM - 5:00 PM	Pre-Conference Training: Communicating Epidemiology Research Results Effectively to Intended Audiences
8:00 AM - 5:00 PM	Pre-Conference Training: Concentration in Basic Geospatial Methods for Public Health Professionals MCH Population Outcomes
8:00 AM - 12:00 PM	Pre-Conference Training: City**M**at**CH** PPOR Workshop
1:00 PM – 4:30 PM	Pre-Conference Training: City**M**at**CH** PPOR User Consultation
4:00 PM – 5:30 PM	CDC/HRSA Ad hoc Advisory Committee Meeting (Invitation Only)
5:30 PM – 7:30 PM	Opening Reception
6:00 PM – 8:00 PM	Scientific Review Panel Meeting (Invitation Only)

Wednesday, December 9, 2009 — MCH EPI Conference

8:15 AM - 8:30 AM	**Welcome Address**
8:30 AM - 10:00 AM	**Keynote Address: David Barker, MD, PhD, FRCP, FRS**
10:30 AM – 12:00 PM	**Breakout Session A** A1. Care Issues from Pregnancy to Birth

Program At-A-Glance (continued)

	A2. Workshop: Joinpoint Reregression Analysis for Trend Data
	A3. Scaling Up to Measure Un-Healthy Weight from Pregnancy Through Adolescence
	A4. Do Healthier Mothers Make Healthier Parents?
	A5. Encouraging Breastfeeding
	A6. It's No Accident: Injury and Violence among Children and Adolescents
	A7. Are CHSCN (Children with Special Health Care Needs) Being Left Behind?
12:00 PM – 2:00 PM	**Lunch, Poster Reception, and Exhibits**
2:00 PM – 3:30 PM	**Breakout Session B** B1. Vital Methods in Vital Statistics
	B2. Workshop: The 2007 National Survey of Children Health: Tips on Using the Data and Key Findings Related to Children Health and Health Care
	B3. What's Love Got to Do With It? Intimate Partner Violence (IPV)
	B4. Now I Lay Me Down to Sleep
	B5. How'd You Do That? Methodological Approaches
	B6. Factors Affecting Breastfeeding: Positive or Negative
	B7. Individual and Community Factors Associated with Preterm Birth
	B8. Lifestyle Factors and Behaviors in Pregnancy
3:45 PM – 5:15 PM	**Plenary I: The Life Course Perspective: Moving from Theory to Action**
5:30 PM – 7:00 PM	**Career Mentoring Session for Students and Young Professionals**
6:00 PM – 8:00 PM	**Open Invitation: Discussion with Tribal and Urban Epidemiology Programs**

Program At-A-Glance (continued)

Thursday, December 10, 2009 MCH EPI Conference

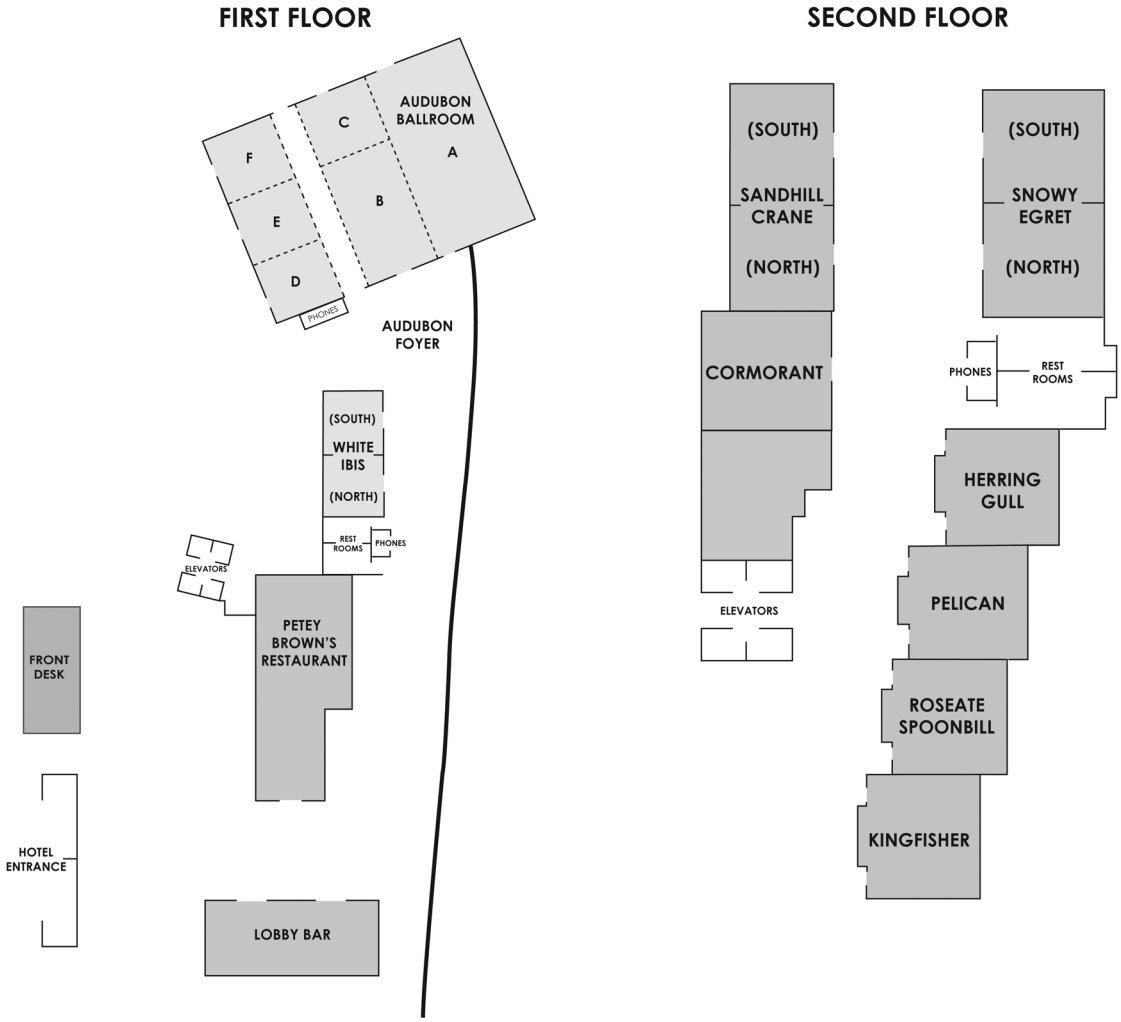
7:00 AM – 8:00 AM	**(Open Invitation) Discussion Group: MCH EPI Group (AMCHP/CSTE)**
8:00 AM – 8:30 AM	**Presentation of Conference Oral and Poster Awards**
8:30 AM – 10:00 AM	**Plenary II: Emerging Environmental Issues in Perinatal and Child Health: Questions, Quandaries and Quagmires**
10:15 AM – 11:45 AM	**Breakout Session C** C1. Special Session: Maternal Health in Developing Countries – The Role of U.S. Experts C2. Workshop: Enabling Linkages of MCH Data: An Introduction to FRIL Software C3. Heal the World: Addressing Disparities in Perinatal Interventions C4. It Takes a Village to Save a Child: Bridging the Gap Through Social Context C5. Definitions, Politics and Interventions of Family Planning C6. No Time Like the Present: Health Behaviors and Services Received During Pregnancy C7. Serving It Up: The "N" in CHSCN (Children with Special Health Care Needs)
11:45 AM – 1:45 PM	**National Maternal and Child Health Epidemiology Awards Luncheon**
1:45 PM – 3:15 PM	**Breakout Session D** D1. Taking a Bite Out of Women's Oral Health D2. Workshop: Preconception Health - From Concept to State Measurement D3. Exploring the Social Determinants of Child Health and Development D4. The Early Birth Catches the Risk D5. Epidemiology: A Tool to Improve Perinatal Care D6. Family Planning, Maternal Behaviors and Outcomes D7. Lifestyle Factors and Child Health Outcomes
3:30 PM – 5:00 PM	**Plenary III: Beginning with the End in Mind: Healthy Families Start with Family Planning (A Life Course Perspective)**
5:15 PM – 7: 00 PM	**Planning Committee Meeting (Invitation Only)**

Program At-A-Glance (continued)

Friday, December 11, 2009 **MCH EPI Conference**

7:00 AM - 8:30 AM	**Meeting with MCH EPI Assignees and State Supervisors (Invitation Only)**
8:30 AM – 10:00 AM	**Breakout Session E** E1. Improving MCH Systems of Care E2. Workshop: Using State Data for Advocacy and to Speak to Policy Makers E3. Smokin' U.S.A. E4. Preconception: Just for Her, Just in Case E5. Life Course Perspective: Not Just Water Under the Bridge E6. Too Much to Carry? The Burden of Chronic Disease in Pregnancy E7. Perinatal Care and Outcomes
10:30 AM – 12:00 PM	**Breakout Session F** F1. Influenza and Pregnancy: Updates on the H1N1 Situation
12:00 PM – 2:00 PM	**Open Invitation: Discussion with Tribal and Urban Epidemiology Programs**

Hotel Map


FIRST FLOOR
AUDUBON BALLROOM
A
B
C
D
E
F
PHONES
AUDUBON FOYER
(SOUTH)
WHITE IBIS
(NORTH)
REST ROOMS
PHONES
ELEVATORS
PETEY BROWN'S RESTAURANT
FRONT DESK
HOTEL ENTRANCE
LOBBY BAR
SECOND FLOOR
(SOUTH)
SANDHILL CRANE
(NORTH)
CORMORANT
ELEVATORS
(SOUTH)
SNOWY EGRET
(NORTH)
PHONES
REST ROOMS
HERRING GULL
PELICAN
ROSEATE SPOONBILL
KINGFISHER

2009 National MCH Epidemiology Awards

The Coalition for Excellence in MCH Epidemiology

The National Maternal and Child Health (MCH) Epidemiology Awards recognize individuals, institutions and leaders for making significant contributions to improve the health of women, children and families by:

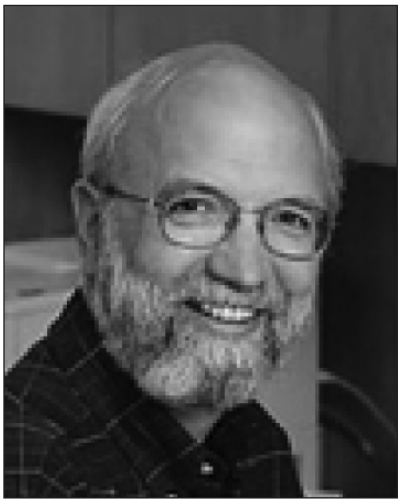
- Advancing public health knowledge through MCH epidemiology and applied research,
- Improving public health practice through the effective use of MCH data and epidemiology,
- Strengthening MCH public health practice through excellence in teaching and training in the use of data, epidemiologic methods and applied research, and
- Providing leadership to enhance the political will to advance public health knowledge and practice and the effective use of MCH data, epidemiology and applied research.

No one national organization represents and/or includes the field of MCH Epidemiology research and practice. Many organizations include MCH epidemiology researchers and practitioners as part of their membership and recognize the important contributions that epidemiologists bring to the Maternal and Child Health field. To provide distinguished national recognition for the excellent work, 16 national health organizations have formed the Coalition for Excellence in MCH Epidemiology to collectively sponsor the 2009 National MCH Epidemiology Awards including:

- **American Academy of Pediatrics (AAP), Epidemiology Section**
- **American Public Health Association (APHA), Maternal and Child Health Section**
- **Association of Maternal and Child Health Programs (AMCHP)**
- **Association of Schools of Public Health (ASPH), Maternal and Child Health Council**
- **Association of Teachers of Maternal and Child Health (ATMCH)**
- **Centers for Disease Control and Prevention (CDC), Division of Reproductive Health**
- **CityMatCH**
- **Council of State and Territorial Epidemiologists (CSTE)**
- **Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau**
- **Maternal and Child Health Journal**
- **National Association of County and City Health Officials (NACCHO)**
- **National Association for Public Health Statistics and Information Systems (NAPHSIS)**
- **National Birth Defects Prevention Network (NBDPN)**
- **National March of Dimes**
- **National Institute of Child Health and Development (NICHD)**
- **Society for Pediatric and Perinatarenatal Epidemiologic Research (SPER)**

For 2009, the Coalition recognizes seven individuals or organizations for their excellent contribution to Maternal and Child Health in four categories: Advancing Knowledge, Effective Practice, Outstanding Leadership and Young Professional Achievement.

Awardee



Greg Alexander Award for Advancing Knowledge
Allen James Wilcox, M.D., Ph.D.

Dr. Allen Wilcox has devoted his 30-year career to the study of fertility, early pregnancy and fetal development. He is a pioneering researcher in human reproduction, a lucid and entertaining teacher, and an influential figure in the field of epidemiology.

Dr. Wilcox has spent his career as a researcher in the Epidemiology Branch of the National Institute of Environmental Health Studies (NIEHS), and served for ten years as the head of this epidemiology research group. He holds an MD from the University of Michigan, a PhD in epidemiology from the University of North Carolina, and an honorary doctorate from the University of Bergen.

As one of the pioneers of reproductive and perinatal epidemiology, Dr. Wilcox has played a major role in defining this field. His study of very early pregnancy showed that one in four pregnancies ends in very early fetal loss. This landmark study is widely cited as the definitive description of early pregnancy loss in humans. Dr. Wilcox's work has cast light on other aspects of basic human biology, for example by demonstrating that women are fertile on the five days before ovulation and the day of ovulation itself.

Another theme of his research has been the analysis and interpretation of birth weight. He has published a series of papers that seriously question the utility of low birth weight as an outcome measure. This has led to a wider re-thinking of the analysis of birth weight, including a shift in WHO policy regarding the merits of birth weight as a measure of infant well-being. His most recent work has examined environmental and genetic factors important in cleft lip and palate. He and his colleagues have shown that maternal intake of folic acid at conception is important in the prevention not only of neural tube defects, but also of facial clefts.

Dr. Wilcox has played a strong leadership role in the field of epidemiology as a whole. He has served as president of the Society of Epidemiologic Research (SER) and the American Epidemiological Society. Since 2001 he has served as editor-in-chief of Epidemiology, one of the premier research journals in the field. Dr. Wilcox is in demand as a lecturer and teacher. He holds an adjunct professorship at the School of Public Health, University of North Carolina at Chapel, and has lectured and taught short courses in perinatal epidemiology all over the world. He is the author of a new textbook titled "Fertility and Pregnancy: An Epidemiologic Perspective," to be published in 2010 by Oxford University Press. Through his efforts to help establish reproductive epidemiology as an epidemiologic specialty, he has made major contributions to maternal and child health.

Awardee

Effective Practice Award at the State Level

Maternal and Child Health Epidemiology Unit
Section of Women's Children's and Family Health, Division of Public Health
Alaska Department of Health and Social Services

The MCH Epidemiology Unit began in the early 1990's with a single person, Dr. Brad Gessner. Dr. Gessner came to Alaska to investigate very high myocarditis mortality rates among Alaska infants. While the data revealed that none were due to myocarditis, many positive public health actions—most notably the start of the Alaska Maternal-Infant Mortality Review—resulted from that initial investigation. Today, the Unit's mission is to provide reliable data on maternal and child health issues for use in planning and evaluating programs, preventing poor health outcomes, and guiding public health policy.

The MCH Epidemiology Unit collects a significant amount of data through six surveillance programs: PRAMS, CUBS (toddler health), MCH Indicators, Maternal Infant Mortality Review/Child Death Review, Birth Defects Registry, and SCAN (child maltreatment). The Unit also creates rich data sources by linking Medicaid, WIC, and vital record files to surveillance data. Their research focuses on identification of new public health issues, analysis of risk factors, understanding the etiology of diseases, and evaluating effectiveness of interventions. Their findings have led to recommendations tailored to Alaska-specific conditions. For example, a detailed risk factor analysis of infant deaths resulted in a recommendation about bed sharing that was different from one by the American Academy of Pediatrics. Last month, the state initiated a Safe Sleep Initiative with a wide variety of partners to develop safe sleep recommendations tailored to the Alaska community. Managing the Maternal-Infant Mortality Review is an example of supporting and nurturing a process that results in many positive outcomes: providing opportunities for health practitioners to interact on issues of serious concern, documenting causes of death to enable accurate risk factor analysis, and improving the administrative system of death investigations. Other new issues of concern brought to attention through the work of the MCH Epidemiology Unit include high rates of birth defects among the Alaska Native population, racial disparities in infant mortality, and risk factors of child neglect. The Unit's efforts have been translated into health initiatives, legislation, and administrative process improvements. Many research efforts are aimed at improving the health of children and Alaska Native children. Several projects, such as evaluating the clinical significance of CPT-1 deficiency (a metabolic disorder), evaluating the association of vitamin A deficiency and Hirschsprung's Disease, and evaluating the long term impact of the PCV-7 vaccine on all-cause pneumonia, have direct program impacts in the US and world-wide.

The Unit provides training to future epidemiologists by hosting CSTE and PHPS fellows from the US CDC, collaborating with EIS officers and providing supervision for MPH students from the University of Alaska.

Awardee

Special Recognition Award for Effective Practice at the Regional Level

Priscilla A. Guild, M.S.P.H.

Priscilla Guild retired in 2008 as the Deputy Director for Administrative Operations, Cecil G. Sheps Center for Health Services Research, and as adjunct faculty in the Department of Maternal and Child Health, School of Public Health, University of North Carolina at Chapel Hill. Ms. Guild has more than 30 years of experience in health statistics and its application to public health practice.

Ms. Guild deserves special recognition for effective practice at the regional level for her 22 years as a principal investigator and director of the Regional Network for Data Management and Utilization Project (RNDMU). Originally funded by the Maternal and Child Health Bureau of HRSA for six years, the initial goals of the project were to 1) strengthen state MCH agencies' capacity to identify factors contributing to high infant mortality, 2) strengthen MCH agencies' leadership role in planning, promoting, coordinating, and providing health care to address the problems identified, and 3) foster coordination and cooperation between state MCH agencies and state statistical agencies. The project started with the development of a minimum set of common perinatal indicators for the eight southeastern states in DHHS Region IV. The criteria for indicator inclusion were 1) clear rational/use for the indicator in planning and assessment of perinatal programs, 2) current capability of the states to produce the indicators, and 3) feasibility for future production capability. With funding in subsequent years from the Office of Population Affairs, the indicator set expanded to include additional measures related to family planning and women's health. Using state submitted data, RNDMU now provides 27 years of MCH data on 144 indicators, and serves as a model for states in other regions.

Under the creative leadership and expertise of Ms. Guild, real multidisciplinary and multi-agency partnerships have been developed to improve the health of women and infants in the southeastern region. This type of collaboration is frequently talked about but all too often not accomplished, let alone accomplished for nearly a quarter of a century. Ms. Guild has been the driving force for not only the data collection and quality control systems, but also for assisting states' staff to improve their use of data. Participating states have demonstrated their commitment to the collection of valid data and the production of reliable indicators over time. They have enhanced their use of indicators to monitor health status and services, and to adequately inform their program policy decisions.

The RNDMU project is an extremely valuable public health resource in the southeastern region and would not have been possible without Ms. Guild's direction, leadership and continued commitment.

Awardee

Excellence in Teaching Award
Donna M. Strobino, Ph.D.

Dr. Donna Strobino is Professor and Vice Chair of Education in Population, Family and Reproductive Health at the Bloomberg School of Public Health, Johns Hopkins University where she is also Director of the Maternal and Child Health Training Grant and the Maternal and Child Health Doctoral Epidemiology Training Grant.

Among her many academic roles, Dr. Strobino is renowned for her teaching and mentoring excellence. In honor of this excellence, she received the prestigious Johns Hopkins' Golden Apple Award for Excellence in Teaching in 1992 and received an Advising, Mentoring, and Teaching Award in 2006. At JHU, she has taught Issues in Perinatal Health since 1977, Clinical Aspects of Maternal and Newborn Health since 1988, Women's Health since 1998, Women's Health Policy since 2004, and Reproductive, Perinatal, and the Women's Health Research Seminar since 2001.

Dr. Strobino has served as a member or chair of countless HRSA, NIH, and CDC MCH-related review panels, including SPRANS, Title V, and Healthy Start. Several of her most influential publications include "A Strategic Framework for Infant Mortality Reduction: Implications for Healthy Start", "Charting a Course for the Future of Women's Health", "The FIMR Evaluation: Objectives, Concepts, Frameworks, and Methods", and the Annual Summary of Vital Statistics published in Pediatrics which she has coauthored since 1995. Her research interests and areas in which she has published extensively include pregnancy outcomes among disadvantaged women, childhood immunization, Healthy Steps, Fetal and Infant Mortality Reviews, and the consequences of maternal depression on children's growth and development.

While her contribution to MCH knowledge and practice is tremendous, her greatest legacy may be the scores of students she has taught and mentored. Because of her own dual training in demography and perinatal epidemiology, Dr. Strobino encourages her students to develop skills in complementary disciplines. She has advised 29 doctoral and 46 master students in her 33 year career, including some of the major names in the MCH field, and has served on numerous oral examination and final defense committees. Because of her commitment to excellence in teaching and the use of data to solve important questions in MCH public health practice, Dr. Donna Strobino is highly deserving of this Excellence in Teaching Award.

Awardee

Outstanding Leadership Award
Donna J. Petersen, Sc.D., M.H.S.

Dr. Donna Petersen, as a state MCH director, researcher, teacher, trainer, editor, and dean of a school of public health, has been devoted for more than 20 years to finding creative ways to inform policy with decisions based on data, and providing for a well-trained present and future workforce in MCH epidemiology at the local, state, and national levels.

Dr. Petersen is currently the Dean of the College of Public Health at the University of South Florida. She received her doctoral degree in Maternal and Child Health (MCH) at the Johns Hopkins University, School of Hygiene and Public Health. She has served on the faculty at the University of Minnesota and the University of Alabama, Birmingham. Her work in needs assessment is well known. She has not only written a textbook on the subject, but she has also taken a leading role in national needs assessments in MCH. In particular, her dedication to MCH epidemiology has lead to the development of high level training modules for Title V directors and staff and has had a positive impact on utilizing MCH epidemiology to enhance Title V needs assessments. These efforts have led to increased funding for training in MCH epidemiology.

Dr. Petersen has also provided leadership to the field of MCH epidemiology as the Editor-in-Chief for the Maternal and Child Health Journal. In this role, she has been able to expand the publishing methods and outcomes from basic and applied research in MCH epidemiology. Her leadership efforts to improve evidence-based MCH practices using appropriate epidemiological data have included working closely with the Maternal and Child Health Bureau and the Centers for Disease Control and Prevention. Also, she is a member of numerous advisory committees, has provided technical assistance and training to over half the states and this past year she served as a trainer for the Federal/State Maternal and Child Health Partnership Technical Assistance meeting on Title V 2010 Needs Assessment on improving data skills.

Dr. Petersen's leadership also includes her work in the classroom with students and with MCH practitioners. She has been a strong mentor working individually with many students and professionals and improving not just their MCH epidemiology skills but also helping them focus their lenses in the ways in which they view the issues to study. Dr. Petersen has been the advisor for more than 40 graduate students and served on numerous doctoral committees. The breadth and depth of Dr. Petersen's accomplishments in MCH epidemiology has strengthened this field and will have a long lasting effect.

Awardee

Young Professional Achievement Award
Brian Christopher Castrucci, MA

Mr. Brian Castrucci's leadership as a young professional in MCH demonstrates innovative uses of data to connect research and education with MCH programming. During his relatively short tenure at the Texas Department of State Health Services starting in early 2006, he has become a force for creating new and enhancing existing sources of MCH data and information, obtaining new funding for data collection and analysis and then using these findings in advocacy and programming. His skill in translating data into meaningful, usable information whether for bureaucrats or community members is exceptional. The partnerships developed through his work include both national and regional agencies, universities and community organizations.

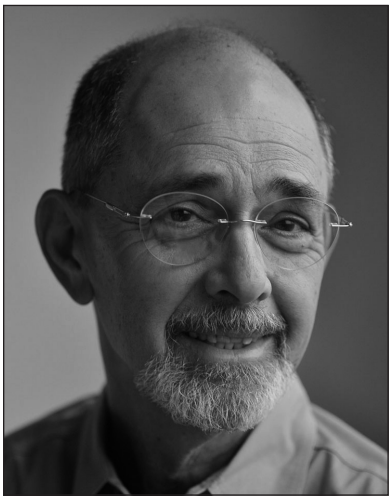
Mr. Castrucci was instrumental in establishing a new Texas-Mexico border initiative after 30 years of dormancy. He moved quickly to create momentum from a cross border demonstration project to advocate for an international collaboration involving the CDC, health leaders at state and national levels in Mexico. Through sharing binational reproductive health data he tirelessly led efforts that generated more sophisticated analyses and scholarly efforts, ultimately resulting in an entire issue of Preventing Chronic Disease dedicated to MCH in the border region.

His partnerships in Texas and in Philadelphia are similarly impressive in their scope, innovation and vision. His department collaborates with the University of Texas to survey school age children and parents about nutrition and physical activity. His data work with the Texas March of Dimes informed prevention programs to reduce African American infant mortality and morbidity that in turn engaged the faith communities in this effort.

Mr. Castrucci consistently keeps his eye on the science and uses data, both quantitative and qualitative, to inform MCH programs. During his time at the Philadelphia Health Department he used data to support the need for lactation consultants in hospitals and led the development of a SIDS risk surveillance system and redesign of infant and youth deaths reviews. His early interest in adolescent health continues today, using data to more effectively address teen health issues, such as smoking, using community collaboratives. Other efforts in Texas include improving the quality and quantity of data collected through WIC and other sources about infant feeding practices and establishing an Infant Sleep study. Typical for him, these were designed with the end in mind, to improve the services and messages about topics critical to infant health. He is a mentor to his staff, providing them with experiences, such as scholarly work, that builds their skills and stretches them intellectually. He willingly shares the spotlight with his staff and collaborators taking pride in their joint accomplishments.

Mr. Castrucci is recognized for his analytical execution, his integrity and "thoughtful communicative style." These talents that made him this year's deserving recipient of the Young Professional Achievement Award, and also make him a remarkable leader today and will serve him well into the future.

Awardee



Zena Stein and Mervyn Susser Award for Lifetime Achievement

Bernard Guyer, M.D., M.P.H.

Bernard Guyer is Zanvyl Krieger Chair in Children's Health at the Johns Hopkins Bloomberg School of Public Health. From 1998 to 2003, he was Professor and Chair of the Department of Population and Family Health Sciences at JHU having served as Chair of the Department of Maternal and Child Health from 1989-1998. Prior to this distinguished academic career, Dr. Guyer served as the Director of the Division of Family Health Services, Massachusetts Department of Public Health from 1979 to 1986. Dr. Guyer is one of the rare academics who has had a foot in both the academic and practice worlds, providing him with unique experiences and keen insights that have allowed him to make outstanding contributions to the field of Maternal and Child Health as well as MCH Epidemiology.

Dr. Guyer's career was shaped early during a medical-school research fellowship in Nigeria. He served as an EIS officer in Tennessee and returned to Africa with the Smallpox Eradication Program. In the early 80's, he established one of the first MCH research units within a public health department, setting a precedent for state MCH epidemiology to influence programs and policy through evidence-based research and evaluation. During this tenure, Dr. Guyer published six articles in the New England Journal of Medicine covering injury, reproductive mortality, and residential care for handicapped children. His 1982 article comparing neonatal mortality in Sweden to that in Massachusetts was first in attributing the higher U.S. infant mortality rates to higher rates of low birth weight.

After eight years in government, Dr. Guyer transitioned to academia at Harvard, and then Johns Hopkins. Working with multi-disciplinary teams of faculty and students, he has fostered innovation in the field as well as mentoring mid-career and junior faculty. His nearly 300 publications contribute to the research on childhood immunization and the prevention of childhood injury and infant mortality. In response to measles outbreaks during the early 90s, Dr. Guyer led investigations on the determinants of underimmunization, including structural, financial, and personal barriers. Most significantly, he was the first to uncover substantial missed opportunities to vaccinate within the health care system. This work culminated in an IOM report, of which he chaired, on immunization finance policies and practices, helping to bolster childhood immunizations to their now record high levels. His consultation is frequently sought on local, state, and national committees on child health and infant mortality.

In sum, Dr. Guyer has led a distinguished career for more than three decades devoted to improving the health of mothers and children, both domestically and abroad. The distinguishing feature of his career has been the use of rigorous data analysis and effective translation of data into action to improve the health and well-being of women, children and families. For his continual innovation, leadership, and cutting edge approach to tackling emergent public health problems, Bernard Guyer is honored with the MCH Epidemiology Lifetime Achievement Award.

Keynote Address

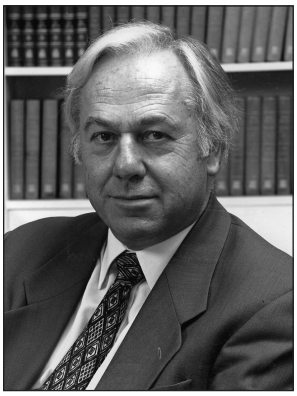
Wednesday, December 9, 2009, 8:30 AM – 10:00 AM

Fetal Origins of Chronic Disease

INTRODUCTION:

There is now a body of evidence showing that coronary heart disease and other chronic diseases originate through malnutrition during fetal life. This leads to lifelong changes in the body's structure and function, a phenomenon known as "fetal programming". Research into fetal programming has required novel studies in which birthweight has been used as an indicator of intra-uterine nutrition. It has been necessary to identify people now in later life whose size at birth was recorded at the time and who could be traced through their lives. Studies of this kind have shown that rates of coronary heart disease fall progressively across the normal range of birthweight. There are similar graded associations between birthweight and the disorders related to coronary heart disease - stroke, high blood pressure and type 2 diabetes. An important implication of the graded association between birthweight and later disease is that what are regarded as normal variations in the supply of energy and nutrients from mothers to their babies have profound long term effects on health. There is now evidence that malnutrition in utero initiates not only cardiovascular disease but certain forms of cancer, and it contributes importantly to lifespan and rates of ageeing. Fetal nutrition is determined by the mother's diet, body stores and metabolism, and by the placenta's ability to transfer nutrients to the baby. The placenta plays a major role in fetal programming, and its effects on later disease interact with those of maternal nutrition.

BIOGRAPHICAL INFORMATION:



David Barker, MD, PhD, FRCP, FRS

Dr. Barker is Professor of Cardiovascular Medicine at Oregon Health and Science University and Professor of Clinical Epidemiology at the University of Southampton, UK. Twenty years ago he showed for the first time that people who had low birth weight are at greater risk of developing coronary heart disease and diabetes. This is now widely accepted. It has led to a new understanding that chronic adult diseases are "programmed" by malnutrition in the womb. Dr. Barker's work is relevant around the world. In the Western world many babies are malnourished because their mothers eat diets that are unbalanced and monotonous, or because their mothers are either overweight or excessively thin. In the Third World many babies are malnourished because their mothers were chronically undernourished when they were young. Dr. Barker has lectured and written extensively on nutrition in the womb and its life-long consequences. He has received a number of international awards including the Danone Nutrition Award and the Prince Mahidol Prize.

Plenary Session I

Wednesday, December 9, 2009, 3:45 PM – 5:15 PM

The Life Course Perspective: Moving from Theory to Action

INTRODUCTION:

Despite a HP 2010 objective that unintended pregnancies be reduced to 30%, nearly half (49%) of the more than 6 million pregnancies that occurred in the United States in 2001 were unintended–a level that has remained unchanged since 1994 (Finer & Henshaw 2006). About half of these pregnancies end in abortion. Thirty to fifty percent of pregnancies that result in a live birth are unintended (Beck et al 2002). Mothers whose pregnancies are unintended are more likely to report smoking cigarettes, being exposed to secondhand smoke at home, and using illicit drugs 3 months prior to pregnancy, and to continue unhealthy behaviors after they know they are pregnant (Dott et al 2009). Further they are less likely to take folic acid in the month before or the month after conception (Dott et al 2009). Studies have shown that prevention of unintended pregnancy could reduce the number of very low birth weight infants delivered by 6000 per year (Hogue & Vasquez 2002); reducing low birth weight deliveries could have a substantial impact on infant mortality and infant morbidities such as cerebral palsy, mental retardation, visual impairments, and emotional, behavioral and academic problems. Further, it has been estimated that the direct medical costs of unintended pregnancy were US$5 billion in 2002 (Trussell 2007).

Rates of unintended pregnancy are an indication that current public health research, policies, and intervention strategies are not sufficient. Women are not being provided the services needed to meet their childbearing goals, and to support optimal health for mothers and infants. And yet we know that family planning and contraceptive use are effective and cost-efficient ways to prevent unintended pregnancy. One estimate showed that direct medical cost savings due to contraceptive use in 2002 were US$19 billion (Trussell 2007). Another study showed that for every $1 that the Federal government spends on family planning services, $4.02 is saved.

LEARNING OBJECTIVES:

1. To understand the critical importance of family planning and the prevention of unintended pregnancy to improving the health and well-being of mothers, infants and families.
2. To review the trends and determinants of unintended pregnancy, and identify the missed opportunities for intervention.
3. To describe the challenges and the opportunities that currently exist for renewed efforts to promote maternal and infant health through prevention of unintended pregnancy surveillance, research and practice.
4. To provide data that will support future MCH epidemiological research and interventions on the prevention of unintended pregnancy.

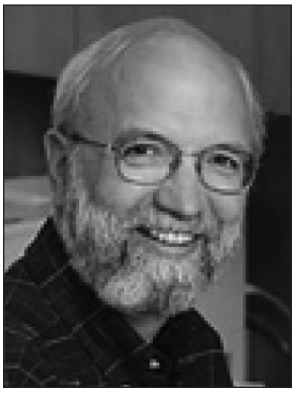
BIOGRAPHICAL INFORMATION:

Michael C. Lu, MD, MPH

Michael C. Lu is an associate professor of obstetrics & gynecology and public health at UCLA. Dr. Lu received his bachelor's degrees from Stanford University, master's degrees from UC Berkeley, medical degree from UC San Francisco, and residency training in obstetrics & gynecology from UC Irvine. He is widely recognized for his research, teaching and clinical care. Dr. Lu received the 2004 American Public Health Association Young Professional Award for his research on health disparities. He recently served on the Institute of Medicine Committee (IOM) on Understanding Prematurity, and is currently serving on the IOM Committee to Reexamine IOM Weight Guidelines. He is a member of the Centers for Disease Control and Prevention Select Panel on Preconception Care, and a lead investigator for the National Children's Study in Los Angeles. Dr. Lu teaches obstetrics and gynecology at the David Geffen School of Medicine at UCLA, and maternal and child health at the UCLA School of Public Health. He has received numerous awards for his teaching, including Excellence in Teaching Awards from the Association of Professors of Gynecology and Obstetrics. Dr. Lu sees patients at the faculty group practice in obstetrics and gynecology at UCLA Medical Center, and has been voted one of the Best Doctors in America since 2005.

Neal Halfon, MD, MPH

Dr. Halfon, is director of the University of California, Los Angeles (UCLA) Center for Healthier Children, Families and Communities and also directs the Child and Family Health Program in the UCLA School of Public Health and the National Center for Infant and Early Childhood Health Policy. Dr. Halfon is professor of pediatrics in the David Geffen School of Medicine at UCLA; community health sciences in the UCLA School of Public Health and public policy in the UCLA School of Public Affairs. Dr. Halfon's recent conceptual work attempts to define a developmentally-focused model of health production across the life course and to understand the implications of life course health development for the delivery and financing of health care. His Life Course Health Development Model has been used to inform new approaches to health promotion, disease prevention and developmental optimization.



Allen James Wilcox, MD, PhD

Dr. Wilcox heads the Reproductive Epidemiology Group and his research falls into the following three areas: fertility, conception and early pregnancy; low birth weight; and environmental teratogens. He also is editor-in-chief of the journal, Epidemiology. He is a past president of both the American College of Epidemiology and the Society for Epidemiologic Research. Dr. Wilcox serves as Adjunct Professor of Epidemiology at the University of North Carolina at Chapel Hill. He earned an M.D. in medicine from the University of Michigan, an M.P.H. in Maternal and Child Health and a Ph.D. in epidemiology from the School of Public Health at the University of North Carolina at Chapel Hill. Dr. Wilcox came to the National Institute of Environmental Health Sciences in 1979, served twenty years in the U.S. Public Health Service, and 10 years as Epidemiology Branch Chief.

Mario Drummonds, MS, LCSW, MBA

Mr. Mario Drummonds is the Executive Director/CEO of the Northern Manhattan Perinatal Partnership, Inc., a Harlem-based maternal and child health agency working to improve the health status of pregnant and parenting women in Northern Manhattan. NMPP is the grantee agency for the Central Harlem Healthy Start Program. His twenty-seven years of professional experience ranges in the areas of program administration and planning. He brings to the table experiences with child welfare theory, practice and policy development, maternal & child health, social marketing, information technology and public policy development. Mr. Drummonds has traveled the nation assisting other Healthy Start projects to develop sustainability strategies and plans, worked with them to prepare their competitive Healthy Start applications and lectures on the theory and practice of building a public health social movement locally to decrease racial disparities in birth outcomes. He is a member of the faculty of HRSA's Quality Institute and a faculty member of the National Healthy Start Association Leadership Institute. HRSA has designated the Central Harlem Healthy Start program as a center of excellence in MCH service delivery while achieving outstanding birth outcomes. Mr. Drummonds completed his graduate education at Columbia University within the Schools of Social Work and Business Administration in 1980. Mr. Drummonds graduated from the Johnson & Johnson/UCLA Health Care Executive Program in the summer of 2004 at the John E. Anderson Graduate School of Management at UCLA. He has the ability to blend the best practices within the business, public health and social service fields to transform the lives of his clients and advance the social-economic development of his community.

Plenary Session II

Thursday, December 10, 2009, 8:30 AM – 10:00 AM

Emerging Environmental Issues in Perinatal and Child Health: Questions, Quandaries and Quagmires

INTRODUCTION:

Pollutant chemicals and hazards are widespread in the environment: land, water, air and food. These include carbon monoxide, mercury, lead, estrogenic agents, and more. Their potential mechanisms and effects on pregnancy and child development are broad based and include altering organogenesis, promoting preterm delivery, affecting endocrine functions, and interfering with cognitive development. The scientific literature on potential environmental agents is rapidly expanding but is of variable quality.

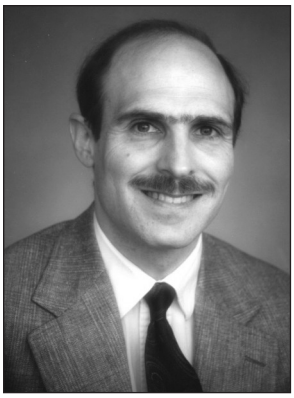
Are there serious population-based environmental threats to perinatal health? Is the level of scientific evidence sufficient to require broad-based public health action? Do we know how to respond? These are not easy questions to answer. Much of the current epidemiological literature leads to potential hypotheses for further study. Often information is used as much for advocacy as to move the scientific agenda forward. How should public health agencies respond? How can MCH epidemiologists help in responding?

The intent of this plenary session is to share highlights of current environmental evidence that call for attention as likely threats to perinatal and child health. The first presentation will highlight multiple environmental threats to perinatal and child health and the level of evidence to support considering these as threats. The second presentation will provide a thoughtful framework for considering the evidence prior to seeking broad-based public health action and suggest important steps for further evaluation before taking such action. The third presentation will be a response from a practicing local public health leader dealing with these environmental issues as they may impact perinatal and child health and the struggles of balancing the science and practice. The session will end with an open discussion of the current issues and debates.

LEARNING OBJECTIVES:

- To provide a brief overview of the evidence to support current environmental impacts on U.S. perinatal health.
- To demonstrate the need for these issues to be further investigated and addressed.
- To offer a framework and approach for considering current environmental evidence.
- To define the necessary steps for moving the field forward with further study.
- To describe the struggles of using this science in public health practice.
- To discuss and debate the current status of the issue.

BIOGRAPHICAL INFORMATION:

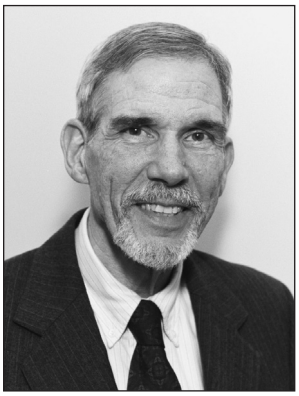


Mark Klebanoff, MD, MPH

Mark Klebanoff received his undergraduate, MD and MPH degrees from Johns Hopkins University and completed pediatric residency at the University of Rochester. He joined the NIH under the US Public Health Service Epidemiology Training Program, and has been a tenured Senior Investigator at NIH since 1987. From 1998 to 2008 he was Director of the Division of Epidemiology, Statistics and Prevention Research at the NICHD. His research has focused primarily on the intergenerational correlation of pregnancy outcomes and on genital tract infection as a cause of preterm birth. Dr. Klebanoff is an elected member of the American Epidemiological Society and the Johns Hopkins Society of Scholars, has served as President of the Society for Pediatric and Perinatal Epidemiologic Research, and is an Editor of the American Journal of Epidemiology. In 2005 he received the Advancing Knowledge Award from the Coalition for Excellence in MCH Epidemiology.

Pauline Mendola, PhD

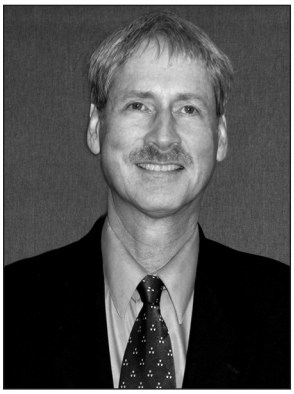
Pauline Mendola has a PhD in Epidemiology and Community Health from the University at Buffalo School of Medicine and Biomedical Science. She is currently the chief of the Infant, Child and Women's Health branch at the National Center for Health Statistics (NCHS) and serves as President of the Society for Pediatric and Perinatal Epidemiologic Research. Her research has focused attention on environmental factors that can impact pregnancy outcomes including birth defects, spontaneous abortion and preterm delivery. Prior to coming to NCHS in 2007, Dr. Mendola was an epidemiologist and branch chief at the Environmental Protection Agency for 10 years. She has studied the effects of contaminated sport fish consumption, drinking water contaminants, pesticide exposure, and exposure to persistent organic pollutants and has often "bridged the gap" between reproductive/perinatal researchers and environmental epidemiologists/toxicologists.



George Rhoads, MD, MPH

George Rhoads is Associate Dean, Professor, and Acting Chair of the Department of Epidemiology at the University of Medicine and Dentistry of New Jersey (UMDNJ) School of Public Health. Before joining UMDNJ in 1989 he served for seven years as Chief of the Epidemiology Branch of the National Institute of Child Health and Human Development, NIH. Dr. Rhoads is a graduate of Harvard Medical School and received his post graduate training in internal medicine at the University of Pennsylvania. He worked for 13 years in Hawaii studying the changes in disease patterns, especially cardiovascular diseases, in Japanese migrants and their descendents. While in Hawaii he earned an MPH and later served as Professor and Chair of the Department of Public Health Sciences at the former University of Hawaii School of Public Health. Dr. Rhoads has had a lifelong interest in the epidemiology and prevention of non-infectious diseases and has worked extensively in cardiovascular, maternal and child health, and cancer epidemiology. He has co-authored a number of papers exploring the extent and correlates of health disparities in these areas. More recently he has published several papers in the area of pharmaco-epidemiology. Since coming to New Jersey, Dr.

Rhoads has carried out a series of randomized trials exploring optimal ways to manage lead-exposed children. He served as Chair of the Steering Committee for the NIEHS-sponsored Treatment of Lead Exposed Children's Study, a large randomized study of chelation therapy, and serves currently as Chair of the CDC Advisory Committee on Childhood Lead Poisoning Prevention.



Kevin Sherin, MD, MPH

Kevin Sherin has been director of public health for the Orange County Health Department (OCHD) since 2004, which serves 1.1 Million people and 51 million tourists in Orlando. OCHD works to assure access, monitor and eliminate health disparities, and promote and protect health and prepare the community for disaster response. Sherin has been helping efforts in Orange County to improve access to prenatal care and eliminate birth outcome disparities. Recently he has been involved in controversies of a toxic landfill and citizen concerns about health effects and birth outcomes. Dr. Sherin is President of the American Association of Public Health Physicians. He serves as President of the FL Association of County Health Officers (FACHO) and as President-elect of the Orange County Medical Society. He serves on NACCHO's program planning committee and Global Climate Change workgroup. He also has teaching appointments as an Associate Professor at FSU College of Medicine, UCF College of medicine, and UCF's College of Health and Public Affairs. He is Vice President of the Board of the FL Public Health Institute. He graduated with honors from Notre Dame, Loyola Medical School, the University Of Illinois College Of Public Health, and completed a Family Medicine residency at UIC-affiliated MacNeal Hospital as chief resident. He is Board Certified in Preventive Medicine and Public Health and in Family Medicine. From 1994-2004, he directed the University of Illinois Family Medicine Residency at Advocate Christ Medical Center. From 1988-1994, he served as health Officer and Director of local health departments in Polk County Florida and DuPage County Illinois.

Plenary Session III

Thursday, December 10, 2009, 3:30 PM – 5:00 PM

Beginning with the End in Mind: Healthy Families Start with Family Planning (A Life Course Perspective)

INTRODUCTION:

A little more than a decade ago, Dr. David Barker proposed a theory on the effects of prenatal injury might have on adulthood development. More recently, several researchers have produced evidence to support the relationship between perinatal insults and postnatal disease, and further, that even conditions from a life-long exposure to the mother (and even previous generations) may affect the reproductive potential of both women and their offspring. This has been particularly true in maternal and child health given the unique opportunity to study complex relationships between exposures and outcomes across multiple pregnancies and across multiple generations. The life course perspective integrates two bodies of knowledge: early programming and cumulative pathways mechanisms and asserts that a woman's reproductive potential is the result of her experiences over a lifetime, including experiences prior to her own birth. Likewise, child and adult health is not just the product of developmental experiences during childhood or adulthood but are the consequence of exposures that cumulate over a lifetime and may even predate birth. In April 2006, CDC released recommendations to improve preconception health and health care in the United States with the goal of improving the health of women and couples before the conception of a first or subsequent pregnancy. As public health practitioners extend attention to earlier developmental periods in individuals, considering potential parents of the future, efforts to find evidence, and develop evidence-based interventions continues to prove challenging.

This life course perspective raises particular methodological challenges for both etiologic and applied epidemiologic research as the windows of exposure and effect for any given risk factor or hazard expands when a lifetime or multiple lifetimes of exposure/effect are considered and when the intersection of biological, social, psychological, and historical contexts are taken into account. Although current national and state surveillance systems provide point-in-time data for analysis of prevalence, incidence, and trends, these systems are not constructed for longitudinal analyses. With emerging emphasis on the life course approach to understanding disease etiology, exposures, and treatment, current surveillance systems must be modified to address these longitudinal issues.

LEARNING OBJECTIVES:

1. To provide practical examples of the life course perspective.
2. To describe study design and data set considerations related to the life course perspective.
3. To highlight the strengths and limitations of current systems and knowledge of life course approach methodologies.
4. To discuss implications for reporting, translation, and action steps based on the life course perspective.

BIOGRAPHICAL INFORMATION:

Christine Galavotti, PhD

Dr. Christine Galavotti is Chief of the Applied Sciences Branch in the Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion at the US Centers for Disease Control and Prevention (CDC). The Branch is home to approximately 60 health scientists, including epidemiologists, social scientists, statisticians, and economists. Branch scientists conduct surveillance, research and evaluation to inform public health programs, policies and practices in the areas of maternal and child health epidemiology, pregnancy risk, unintended and teen pregnancy prevention, and reproductive health.

Dr. Galavotti's research has focused on the design and evaluation of behavioral interventions to prevent unintended pregnancy, HIV and STDs among persons at risk. She joined CDC in 1988 in the Division of Sexually Transmitted Diseases as a co-investigator for the AIDS Community Demonstration Project, a large-scale community-based HIV prevention project in five US cities. This project was the first of its kind at CDC, requiring state-based public health departments to work directly with communities of men who have sex with men, commercial sex workers, injecting drug users (IDU), and female sex partners of IDUs. In 1991, she led the development of the Women and Infants Demonstration project, a multimillion dollar HIV prevention project focused on HIV positive women, women in drug treatment, and women in homeless shelters. In 1993 she moved to the Division of Reproductive Health to continue intervention research focused on both HIV and reproductive health in women. In 2000, she led the design, implementation, and evaluation of the Modeling and Reinforcement to Combat HIV/AIDS (MARCH) program, a program model that combines key aspects of individual behavior change with efforts to change social norms. CDC's Global AIDS Program has supported the application of this model to prevent HIV transmission and acquisition and increase use of HIV and reproductive health services in several countries in sub-Saharan Africa.

In recognition of her work, Dr. Galavotti has won numerous awards including the 2001 CDC Honor Award for International Health, the 2004 CDC Award for Excellence in Public Health Training, and the 2005 Secretary for Health Human Services Award for Distinguished Service. Most recently she received the 2009 CDC Award for Excellence in Behavioral and Social Science Research in Public Health.

Ward Cates, MD, MPH

Dr. Cates (Ward) attended Yale University, graduating in 1964 with a major in history. He received an Ehrman Scholarship to attend Kings' College, Cambridge University, Cambridge, England, where he obtained a masters degree in history in 1966. He returned to Yale University School of Medicine in 1966, graduating in 1971 with a combined M.D.-M.P.H. degree. His clinical training was in internal medicine at the University of Virginia Hospital in Charlottesville, Virginia. In 1974, Dr. Cates joined the Centers for Disease Control, Atlanta, Georgia, in its Abortion Surveillance Branch, where he was Chief of this unit between 1975 and 1982. In 1982, Dr. Cates became Director, Division of Sexually Transmitted Diseases. Under his leadership, the Division integrated HIV prevention activities into STD control programs. In 1991, he became Director, Division of Training at CDC to direct its scientific training functions, including the Epidemic Intelligence Service program and CDC's Preventive Medicine Residency. In 1994, he joined Family Health International in North Carolina, and currently serves as President, Research.

Dr. Cates is Board Certified in General Preventive Medicine, specializing in epidemiology. He is an Adjunct Professor of Epidemiology at the University of North Carolina, Emory University, and the University of Michigan's School of Public Health. He has authored or co-authored over 450 scientific publications, including 170 original contributions. He is the co-author of Contraceptive Technology, and was the co-editor of Sexually Transmitted Diseases, 2nd Edition. In addition, Dr. Cates has been on the editorial boards of eight scientific journals.

Dr. Cates is a Member of the Institute of Medicine, and a Fellow of the American College of Preventive Medicine. He is past President of the Society for Epidemiologic Research and the Association of Reproductive Health Professionals (ARHP). He has served on the Executive Boards of the American Public Health Association (APHA), the American STD Association (ASTDA), and the American College of Preventive Medicine (ACPM). He was Director of a WHO Collaborating Centre at CDC and also now at FHI, and was Chair of the Executive Committee for the NIH HIV Prevention Trials Network for over a decade.

In 1979, Dr. Cates was presented with the Shultz Award by APHA for his research contributing to the health of American women. In 1985 and 1990, he received the EEO Award from CDC and DHHS, respectively, for his contributions to diversity among his staff. In 1986, he was elected to the American Epidemiological Society. In 1987, he received the Christopher Tietze Humanitarian Award. In 1991, he was selected by Planned Parenthood Federation of America to receive the Arthur and Edith Wippman Scientific Research Award, the only non-bench scientist to have done so. In 1998, he was elected to the Institute of Medicine. In 2003, he received the Thomas Parran Award from the American STD Association. In 2004, he was chosen by the Yale School of Public Health for its Distinguished Alumnus Award. In addition, Dr. Cates has delivered a variety of named lectures, among them: John C. Cassell Memorial Lecture (Society for Epidemiologic Research), 1989; J. Roswell Gallagher Lecture (Society for Adolescent Medicine), 1990; Alan Guttmacher Lecture (ARHP), 1992; the Wade Hampton Frost Lecture (APHA), 1994; the John Atkinson Ferrell Lecture (UNC), 2002; the Alexander Langmuir Lecture (CDC), 2003; the Harry Feldman Lecture (American Epidemiologic Society), 2003; John C. Cutler Annual Global Health Lecture (UPitt), 2007, Morris Blum Memorial Lecture (UMinnesota), 2008; and Adamchak Public Policy Lecture (KSU), 2009.

Lawrence Finer, PhD

Larry Finer joined the Guttmacher Institute in 1998. As Director of Domestic Research, he is responsible for supervising Guttmacher's research portfolio of U.S.-focused projects on family planning services, contraceptive use patterns, pregnancy and abortion, and adolescent reproductive health. In addition, his project responsibilities have included updating U.S. estimates of unintended pregnancy, as well as overseeing Guttmacher's periodic census of abortion providers, which measures the incidence and availability of abortion nationwide. Dr. Finer has authored work on premarital sex, women's reasons for seeking abortion, multiple sexual partnerships and risk for sexually transmitted diseases, the services provided by U.S. family planning agencies and clinics, men's reproductive health, and the timing of first family planning visits. He also serves as a Senior Lecturer in the Department of Population and Family Health at Columbia University's Mailman School of Public Health. In 2004, he received the Outstanding Young Professional Award from the Population, Family Planning and Reproductive Health Section of the American Public Health Association. Dr. Finer came to Guttmacher after serving as a Social Science Analyst in the Demographic and Behavioral Sciences Branch of the National Institute of Child Health and Human Development. He received his A.B. in psychology from Harvard and his Ph.D. in population dynamics from the Johns Hopkins University School of Public Health.

Deborah Kaplan, PA, MPH

Deborah Kaplan is the Assistant Commissioner of the Bureau of Maternal, Infant and Reproductive Health at the New York City Department of Health and Mental Hygiene (DOHMH), where she has worked for the past eight years. The primary goals of the Bureau are to reduce teen pregnancy, make breastfeeding the norm, and promote health equity for mothers and infants. The Bureau addresses these goals through a range of initiatives and research, including partnerships with community-based organizations, hospitals and health care providers; implementation of evidence-based programs; program evaluation; and ongoing surveillance and analysis of vital statistics and survey data including the NYC Pregnancy Risk Assessment Monitoring System and the NYC Youth Risk Behavior Survey.

Key bureau initiatives include a multilevel breastfeeding initiative to increase hospital, community and workplace support for breastfeeding initiation and exclusivity; the Nurse-Family Partnership, an evidence-based nurse home visiting program for low-income first time mothers; the Cribs for Kids safe sleep program to reduce infant deaths due to accidental injury; and teen pregnancy prevention initiatives to increase access to reproductive health services, including contraceptives, at community and school-based health centers. The work of the Bureau is guided by a vision statement – "We envision a world where all people live healthy, fulfilling sexual and reproductive lives and where all children are wanted, born healthy, nurtured and loved."

Ms. Kaplan received her Bachelors of Science degree and physician assistant training from Johns Hopkins University, School of Health Services. She holds a Masters degree in Public Health/Community Health Education from Hunter College. She is currently enrolled in the Doctoral in Public Health Program at the City University of New York Graduate Center. She has over thirty years public health experience in clinical care, health education, program development and program leadership, with a focus on adolescent and reproductive health.

Ms. Kaplan's focus on sexual and reproductive health stems from her lifelong commitment to and passion for reproductive rights. In 2008 she was the recipient of the Shirley Gordon Public Policy Leadership Award from the Family Planning Advocates of New York State, in recognition of her role in shaping public policy in New York State to further the goal of universal access to confidential, quality reproductive health care.

Sarah Brown, MSPH

Sarah Brown is the CEO of The National Campaign to Prevent Teen and Unplanned Pregnancy, a private, non-profit initiative organized in 1996 that focuses on preventing both teen pregnancy and unplanned pregnancy among young adults. Before co-founding the National Campaign, she was a senior director at the Institute of Medicine, where she led studies on a wide variety of issues in maternal and child health, and in reproductive health as well.

She has served on numerous advisory committees and boards nationwide, speaks frequently on issues of teen sex and unplanned pregnancy, and regularly appears in the television, radio, and print media.

Sarah Brown has received numerous awards, including the Institute of Medicine's Cecil Award for Excellence in Research and the Martha May Elliot Award of the American Public Health Association.

Time	Session	Room/Presenter
7:00 AM – 8:00 AM	**Light Breakfast**	**Audubon Foyer**
8:15 AM – 8:30 AM	**Welcome Address**	**Audubon ABC**
	Wanda Barfield, MD, MPH Captain, U.S. Public Health Service MCH EPI Team Leader Division of Reproductive Health, Applied Sciences Branch National Center for Chronic Disease Prevention and Health Promotion Centers for Disease Control and Prevention	
	Michael Kogan, PhD Director, Office of Data and Program Development Maternal and Child Health Bureau Resources and Services Administration	
8:30 AM – 10:00 AM	**Keynote Address - Fetal Origins of Chronic Disease** **Keynote Speaker: David Barker, MD, PhD, FRCP, FRS**	**Audubon ABC**
10:00 AM – 10:30 AM	**BREAK**	
10:30 AM – 12:00 PM	**Breakout Session A**	
A1.	**Care Issues from Pregnancy to Birth** **Moderator: Bill Sappenfield, MD, MPH**	**Snowy Egret**
	A Study of the Relationship between Health Insurance Coverage with not Getting Prenatal Care as Early as Wanted: Louisiana PRAMS, 2000-2004	Blessing Dube
	Recurrence of and Risk Factors for Breech Presentation in Consecutive Pregnancies	Jane Ford
	Trends in Rates of Neonatal Circumcision in the United States, 1998-2005	Lee Warner
	Predictors of Insufficient Sweat Production during Confirmatory Testing for Cystic Fibrosis, Michigan Newborn Screening	Mary Kleyn
A2.	**WORKSHOP: Joinpoint Regression Analysis for Trend Data**	**White Ibis North**

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
A3.	**Scaling Up to Measure Un-Healthy Weight from Pregnancy Through Adolescence** **Moderator: Mary Balluff, MS, RD, LMNT**	**Audubon DE**
	Low Pregnancy Weight Gain and Small for Gestational Age: A Comparison of the Association Using Three Different Measures of Small for Gestational Age	Patricia Dietz
	Racial/Ethnic Disparities in Prevalence of Childhood Obesity—Texas, 2004-2005	Gita Mirchandani
	Pilot Study of an Approach for Estimating Population-Based Body Mass Index in Ohio Seventh Graders	Heidi Scarpitti
	Child and Adolescent Weight Status Compared to Parent and Self Perceived Weight Status in a Chicago Pilot Study	Tracie Smith
A4.	**Do Healthier Mothers Make Healthier Parents?** **Moderator: Lo Berry, MA, LTFP**	**Sandhill Crane**
	Postpartum Depression among Missouri Women, 2007	Venkata Garikapaty
	Ethnic Differences in Perceptions of Motivators and Barriers to Postpartum Weight Loss Efforts Among Low Income Women	Lorraine Walker
	An Examination of the Relationship between Childhood Maltreatment, Preterm Delivery, and Gestational Length of Pregnancy	Lillianne Lewis
	Is There an Association Between Breastfeeding Duration and Maternal Weight Retention at One Year Postpartum, and Does Breastfeeding Intensity Modify the Relationship?	Deborah Dee
	Vitamin D Intake and Endometrial Cancer Risk in Postmenopausal Women in the Iowa Women's Health Study	Sarah Klawitter
A5.	**Encouraging Breastfeeding** **Moderator: Loretta Fuddy, ACSW, MPH**	**White Ibis South**
	Breastfeeding Initiation and Continuation by Maternal Characteristics among Women Receiving WIC Benefits and those Eligible for WIC but not Enrolled, PRAMS 2000-2005	Nan Ruffo

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
	Maternity Care Practices and Breastfeeding among Women Delivering a Live-Born Infant: Evidence from the Pregnancy Risk Assessment Monitoring System, 2004-2006	Indu Ahluwalia
	The Effect of Immediate Postpartum Depo Provera Receipt on Breastfeeding Duration	Elizabeth Brownell
A6.	**It's No Accident: Injury and Violence among Children and Adolescents** **Moderator: Sally Fogerty, BSN, MEd**	**Cormorant**
	Projectul Luminita: A Pilot Study of Pediatric Injury Risk in a Roma Community	Ann Wallis
	Youth Violence Risk Factors among Preadolescents in Puerto Rico: From Research to Intervention	Melissa Mercado Crespo
	Child and Caseworker Reports of Maltreatment and the Risk of Suicide-Related Outcomes: Results from a National Study	Deborah Stone
A7.	**Are CHSCN (Children with Special Health Care Needs) Being Left Behind?** **Moderator: Reem Ghandour, DrPH, MPA**	**Herring Gull**
	Do Healthy People 2010 Indicators Show Improvement for Children with Special Health Care Needs? Trends Across Two Children's Health Surveys: NS-CSHCN and NSCH	Erin Foster
	Healthcare Access and Quality among Children with Mental Health Impairment	Janice Bell
12:00 PM – 2:00 PM	**Lunch, Poster Reception, and Exhibits**	**Audubon Pavilion**
2:00 PM – 3:30 PM	**Breakout Session B**	
B1.	**Vital Methods in Vital Statistics** **Moderator: Stephanie Ventura, MA**	**Audubon DE**
	Different Meanings of Missing Birth Certificate Data: Metropolitan Racial Segregation Modifies the Association Between Missing Risk Factor Fields and Very Preterm Birth in Black Women	Michael Kramer
	Birthweight for Gestational Age Distributions Differ According to Measures Used to Assign Gestational Age	William Callaghan

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
	Impact of Prematurity and Neonatal Stress Measured by Apgar Score on Analyte Concentrations Used for Newborn Screening	Steven Korzeniewski
	Florida Investigation of Late Preterm and Cesarean Delivery: Are Birth Certificates Accurate?	Heather Clayton
B2	**WORKSHOP: The 2007 National Survey of Children Health: Tips on Using the Data and Key Findings Related to Children is Health and Health Care**	**Herring Gull**
B3.	**What's Love Got to Do With It? Intimate Partner Violence (IPV)** **Moderator: Martha Coulter, MSW, MPH, DrPH**	**White Ibis North**
	Intimate Partner Violence Among Recently Pregnant Women in Hawaii – Data from the Hawaii Pregnancy Risk Assessment Monitoring System, 2004-2007	Emily Roberson
	Prevalence of Intimate Partner Violence in an Abortion Clinic Population	Audrey Saftlas
	Policy Implications of Traumatic Pregnancy - Associated Death	William Winter
	The Epidemiology of Acute Poisonings in Women of Reproductive Age and During Pregnancy, California, 2000-2004	Candace McClure
B4.	**Now I Lay Me Down to Sleep** **Moderator: Lyn Kieltyka, PhD**	**Sandhill Crane**
	Factors Associated with Use of the Non-Supine Infant Sleep Position – Results from the Canadian Maternity Experiences Survey	Deshayne Fell
	Sleeping Practices in Los Angeles Mommy & Baby's Project by Race & Ethnicity	Paymon Ebrahimzadeh
	Bedsharing Practices Differ by Breastfeeding Status and Race	Lillian Funke
B5.	**How'd You Do That? Methodological Approaches** **Moderator: Deborah Rosenberg, PhD**	**White Ibis South**
	Practical Considerations for Multivariable Modeling in the Context of Generating Average Population Attributable Fractions	Deborah Rosenberg

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
	An Approach to Automated Variable Selection for Logistic Regression using Complex Sample Survey Data	Ruben Smith
	Linking PRAMS with Child Maltreatment Reports to Identify Populations at Risk	Jason Parrish
	Using Linked Hospitalization Data to Examine Factors Associated with Survey Non-Response - Massachusetts Pregnancy Risk Assessment Monitoring System, 2005	Susan Manning
B6.	**Factors Affecting Breastfeeding: Positive or Negative** **Moderator: Brian Castrucci, MA**	**Cormorant**
	Breastfeeding Awareness and Attitudes of Texans, 2007	Jamie Clark
	The Effect of Maternal Obesity and Depression on Breastfeeding Initiation	Ushma Mehta
	The Paradox of Workplace Re-entry and Breastfeeding	Ann Dozier
	The Effect of Maternity Leave Length and Time of Return to Work on Breastfeeding Initiation and Duration	Chinelo Ogbuanu
B7.	**Individual and Community Factors Associated with Preterm Birth** **Moderator: Stephanie Pollard, MPH, MT**	**Snowy Egret**
	Preterm Birth Risk Associated with Maternal Residence in an Ethnic Enclave among Seven Ethnic Groups in New York City	Susan Mason
	Black-White Differences in Preterm Birth: The Importance of State and Local Factors	Ashley Schempf
	Views of Urban African Americans Regarding the Importance of Life Course Factors to Birth Outcomes	Angela Rohan
B8.	**Lifestyle Factors and Behaviors in Pregnancy** **Moderator: Paul Eke, PhD, MPH**	**Pelican**
	Defining Binge Drinking Among Reproductive Women in Hawaii – Disaggregating the Data	Rebecca Shor
	Perinatal Factors and Outcomes Among Women with Different Smoking Behaviors During and After Pregnancy, Maryland, 2001-2007	Lee Hurt
	Sickle Cell Disease and Pregnancy Outcomes among Women of African Descent	Danielle Barradas

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
	Trends in Maternal Diabetes in Chicago by Race/Ethnicity and Age, 1989-2005	Margarita Reina
	Newborn Inpatient Care Days and Charges Associated with Maternal Substance Use: New Jersey	Sandy Deshpande
3:30 PM – 3:45 PM	**BREAK**	
3:45 PM – 5:15 PM	**PLENARY SESSION I - The Life Course Perspective: Moving from Theory to Action Moderator: Michael Lu, MD, MPH**	**Audubon ABC**
5:15 PM – 5:30 PM	**BREAK**	
5:30 PM – 7:00 PM	**Career Mentoring Session for Students and Young Professionals**	**Audubon DEF**
6:00 PM – 8:00 PM	**Open Invitation: Discussion with Tribal and Urban Epidemiology Programs**	**White Ibis**

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
7:00 AM – 8:00 AM	**Light Breakfast**	**Audubon Foyer**
7:00 AM – 8:00 AM	**(Open Invitation) Discussion Group: MCH EPI Group (AMCHP/CSTE)**	**Sandhill Crane**
8:00 AM – 8:30 AM	**Presentation of Conference Oral and Poster Awards**	**Audubon ABC**
8:30 AM – 10:00 AM	**Plenary II - Emerging Environmental Issues in Perinatal and Child Health: Questions, Quandaries and Quagmires** **Moderator: Mark Klebanoff, MD, MPH**	**Audubon ABC**
10:00 AM – 10:15 AM	**BREAK**	
10:15 AM – 11:45 AM	**Breakout Session C**	
C1.	**SPECIAL SESSION: Maternal Health in Developing Countries – The Role of U.S. Experts**	**White Ibis North**
C2.	**WORKSHOP: Enabling Linkages of MCH Data: An Introduction to FRIL Software**	**Sandhill Crane**
C3.	**Heal the World: Addressing Disparities in Perinatal Interventions** **Moderator: Eugene Declercq, PhD**	**Snowy Egret**
	Racial and Ethnic Variations in Temporal Changes in Fetal Deaths and First Day Infant Deaths	Martha Wingate
	Disparities in Receipt of Antenatal Steroids and Surfactant Replacement Therapy in Preterm Birth: Data from the National Vital Statistics System	Michelle Osterman
	Is Acculturation a Factor in High Cesarean Birth Rates on the US-Mexico Border?	Jill McDonald
	Explaining Racial and Ethnic Disparities in Cesarean Section Rates, 1998-2006	Eugene Declercq
C4.	**It Takes a Village to Save a Child: Bridging the Gap through Social Context** **Moderator: Karen Hughes, MPH**	**Audubon DE**
	Measuring the Gap of Massachusetts Infant Mortality Rates: Racial Disparities by Individual and Contextual Levels of Socio-Economic-Status and by Maternal Occupation	Isabel Cáceres

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
	Reduction of Racial Disparities in Low Birth Weight in the Context of Education, Employment and Equal Access to Care: An Example in the U.S. Military	Wanda Barfield
	Paternity Status and Disparities in Infant Mortality Before and After Welfare Reforms in Wisconsin: Analysis of Data from the City of Milwaukee	Emmanuel Ngui
	Exposure to Perceived Racism in the Public Setting and Birth Outcome among African-American Women	Kristin Rankin
C5.	**Definitions, Politics and Interventions of Family Planning** **Moderator: Michael Kramer, PhD, MS, PA-C**	**White Ibis South**
	Intergenerational Cycle of Teen Pregnancy: How We Can Help Families Break Free	Kate Sullivan
	The Title X Family Planning Program: A Historical Examination of the Political Challenges and Support by Presidential Administration, 1970-2008	Cheryl Vamos
	Florida Healthy Start Services and Effective Postpartum Contraceptive Use	Leticia Hernandez
	Expanding Understanding of Unintended Pregnancy: The London Measure of Unplanned Pregnancy in California	Moreen Libet
C6.	**No Time Like the Present: Health Behaviors and Services Received during Pregnancy** **Moderator: Letitia Williams, MPH**	**Cormorant**
	Self-reported HIV Testing during Pregnancy in 28 States, Pregnancy Risk Assessment Monitoring System (PRAMS), 2004-2006	Leslie Harrison
	Provider Advice to Women on Weight Gain during Pregnancy	Tanya Williams
	Maternal Characteristics that Influence Drinking Cessation upon Becoming Pregnant	Leigh Tenkku
C7.	**Serving It Up: The "N" in CHSCN (Children with Special Health Care Needs)** **Moderator: Russell Kirby, PhD, MS, FACE**	**Herring Gull**
	Epidemiology of Children with Special Health Care Needs: Approaches and Opportunities	Russell Kirby

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
	What Factors are Associated with State Performance on Provision of Transition Services to Children with Special Health Care Needs?	Laurin Kasehagen Robinson
	The Impact of Co-Morbid Congenital Anomalies on the Timeliness of Hearing Screening and Diagnosis for Infants With Hearing Loss in Virginia, 2002-2006	Derek Chapman
11:45 AM – 1:45 PM	**National Maternal and Child Health Epidemiology Awards Luncheon**	**Audubon Pavilion**
1:45 PM – 3:15 PM	**Breakout Session D**	
D1.	**Taking a Bite Out of Women's Oral Health** **Moderator: Gina Thornton-Evans, DDS, MPH**	**Sandhill Crane**
	Racial Disparities in Maternal Oral Health Experiences in 10 States, Pregnancy Risk Assessment Monitoring System, 2004-2006	Sunah Hwang
	Risk Factors for Insufficient Oral Health Care during Pregnancy	Kristen Marchi
	Access to Preventive Dental Care by Pregnant Medicaid Recipients, Iowa 2005-2006	Debbie Kane
	Geographic Differences in Preventive Dental Cleaning among Pregnant Women in South Carolina, 2004-2007	Nathan Hale
D2.	**WORKSHOP: Preconception Health - From Concept to State Measurement**	**Snowy Egret**
D3.	**Exploring the Social Determinants of Child Health and Development** **Moderator: Mei Lin, MD, MSc**	**White Ibis North**
	Socioeconomic Status, Child Enrichment Factors, and Cognitive Deficit among Preschool-Age Children: Results from the Follow-Up of Growth and Development Experiences Study	Deborah Christensen
	Socioeconomic Status and Middle Childhood Health and Development: Variations by SES Measure and Race	Amani Nuru-Jeter
	The Burden of Childhood Asthma in Puerto Rico	Alejandro Amill-Rosario
	Television Viewing and Overweight Prevalence among 3rd Grade Students in Ohio, 2006-2008	Reena Oza-Frank

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
	The Effect of Acculturation on Healthy Lifestyle Characteristics -Data from the School Physical Activity and Nutrition Study, 2004-2005	Catherine Lind
D4.	**The Early Birth Catches the Risk** **Moderator: Dave Goodman, MS, PhD**	**Audubon DE**
	Racial Disparity in the Rate of Late Preterm Births (34-36 wks): The Effect of Traditional Sociodemographic and Medical Risk Factors	Kristin Rankin
	Medical Intervention and the Preterm Birth Rate: A Review of National Trends, 1991-2006	Marian MacDorman
	Massachusetts Mothers at Increased Risk for Delivering Late Preterm Infants	Maria Elena Hood
	History of Pregnancy Termination As A Risk Factor For Preterm Birth in Virginia, 2000-2007	Derek Chapman
D5.	**Epidemiology: A Tool to Improve Perinatal Care** **Moderator: Ruth Ann Shepherd, MD, FAAP, CPHQ**	**White Ibis South**
	Lowering Fetal and Infant Death: Racial/Ethnic Differences in Access and Utilization of Obstetric Care—Texas, 2000-2004	Gita Mirchandani
	Contribution of Cesarean Delivery and Induction of Labor to Delivery Prior to 39 Weeks Gestation: New Jersey, 1997-2005	Charles Denk
	Hospitals Matter: Differential Rates of Cesarean Section across Hospitals in Massachusetts	Isabel Cáceres
	Being Born at the Right Place: Definitions and Data Collection on Neonatal Levels of Care	Wanda Barfield
D6.	**Family Planning, Maternal Behaviors and Outcomes** **Moderator: Sujatha Prabhakaran, MD, MPH**	**Cormorant**
	Beyond Planning: Racial and Income Disparities in Unintended Pregnancy and Prenatal Cigarette Use	Kristin Voegtline
	Factors Associated with Uptake of Postnatal Care in Shamva District of Mashonaland Central Province, 2009	Masimba Mwazha

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
	Examining the Influence of Socio-Demographic Variables on the Use of Contraception after Abortion in the United States Using the 2002 National Survey of Family Growth	Megan Ivankovich
	Predictors of Repeat Pregnancy among Michigan Adolescents Ages 10-19 Years Served by the Special Supplemental Nutrition Program for Women, Infants & Children (WIC), 2003-2007	Patricia McKane
D7.	**Lifestyle Factors and Child Health Outcomes** **Moderator: Susan Manning, MP, MPH**	**Herring Gull**
	Risk Factors of Soda and Other Sugar Sweetened Beverages among 2 Year Olds: Findings from a Population-Based Survey	Bernice Raveche
	Infant Secondhand Smoke Exposure in Louisiana, 1998-2004: Trend and High Risk Population	Yan Liang
	Factors Associated with HIV Infection among Children Born to Mothers Participating in the Prevention of Mother to Child Transmission (PMTCT) Programme at Chitungwiza Hospital, Zimbabwe	Stella Ngwende
	Measuring Level of Anaemia among Health Workers as an Approach to Control Anaemia Among Children in Gyanpur Block of Uttar Pradesh State, India	Prakash Kotecha
3:15 PM – 3:30 PM	**BREAK**	
3:30 PM – 5:00 PM	**Plenary III - Beginning with the End in Mind: Healthy Families Start with Family Planning (A Life Course Perspective)** **Moderator: Christine Galavotti, PhD**	**Audubon ABC**
5:00 PM – 5:15 PM	**BREAK**	
5:15 PM – 7:00 PM	**Planning Committee Meeting (Invitation Only)**	**Wilson's Plover**

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
7:00 AM – 8:00 AM	**Light Breakfast**	**Audubon Foyer**
7:00 AM – 8:30 AM	**Meeting with MCH EPI Assignees and State Supervisors (Invitation Only)**	**Pelican**
8:30 AM – 10:00 AM	**Breakout Session E**	
E1.	**Improving MCH Systems of Care** **Moderator: Debbie Kane, PhD**	**Sandhill Crane**
	The Medical Home and Preventive Care Screenings and Counseling for Children	Melissa Romaire
	The Use of Q-Sort Methodology to Obtain Stakeholder Participation in the New Mexico Maternal and Child Health Needs Assessment	Lucy Stelzner
	A Comparison of Two Surveillance Strategies for Selected Birth Defects in Florida, 2003-06	Jason Salemi
E2.	**WORKSHOP: Using State Data for Advocacy and to Speak to Policy Makers**	**Snowy Egret**
E3.	**Smokin' U.S.A.** **Moderator: Gwendolyn P. Quinn, PhD**	**White Ibis North**
	Exposure to Cigarette Smoke Among Infants in Florida, 2001 - 2005	Marie Bailey
	Prenatal Smoking Cessation from the Northern Plains Tribal Pregnancy Risk Assessment Monitoring System (NPTPRAMS)	Ssu Weng
	Smoking Cessation and Postpartum Depression Two Years after Live Birth: Analysis of Oregon PRAMS-2 Data, 2006	Priya Srikanth
E4.	**Preconception: Just for Her, Just in Case** **Moderator: Vani Bettegowda, MHS**	**Audubon DE**
	Are U.S. Providers Ordering Folic Acid for Their Young, Non-Pregnant Patients Seeking Preventative Care?	Heather Burris
	Preconception Care Counseling Visit not Associated with Pre-pregnancy BMI	Lyn Kieltyka
	Preconception Health Status among Non-Pregnant and Recently Pregnant Women: A Comparison of Findings from Two Population-Based Surveys	Kathryn Martin

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
	Status of Preconception Indicators in an Urban Population of Low Income Women at Entry to Prenatal Care	Deborah Ehrenthal
E5.	**Life Course Perspective: Not Just Water Under the Bridge** **Moderator: Cheri Pies, MSW, DrPH**	**Sandhill Crane**
	Perinatal Etiology of Cardiovascular Disease Risk Factors in Young Children: A Population-Based Analysis	Sarah Messiah
	Association between Subtypes of Intrauterine Growth Restriction with or without Maternal Smoking During Pregnancy and the Risk of Hypercholesterolemia in Later Life: A 40-year Cohort Study	Xiaozhong Wen
	Low Birth Weight across Generations: Genetics, Epigenetics, or Environments?	James Collins Jr.
	Sleep and the Development of Obesity in Young Children	Janice Bell
E6.	**Too Much to Carry? The Burden of Chronic Disease in Pregnancy** **Moderator: Connie Bish, PhD, MPH**	**Cormorant**
	Tracking Gestational Diabetes Mellitus in Massachusetts: Opportunities and Challenges	Hafsatou Diop
	Psychosocial Stress Associated With Gestational Diabetes Mellitus	Mei Lin
	What is the Burden of Chronic Disease Risk Factors and Conditions among Low-Income Women Who Recently Delivered a Live Birth?	Patricia Dietz
	Obstetric Hospitalizations with Heart Disease and Severe Morbidity in the United States	Elena Kuklina
E7.	**Perinatal Care and Outcomes** **Moderator: Gilberto Chavez, MD, MPH**	**Herring Gull**
	Determinants of Perinatal Mortality in Marondera District, Mashonaland East Province, Zimbabwe 2009	Emmanuel Tachiwenyika
	Labor Induction among Low Risk Women: The Risk for Primary Cesarean Delivery, Massachusetts, 2001-2007	Eileen Mack Thorley
	Perinatal Regionalization for Very Low Birth Weight Infants: A Meta-Analysis of Three Decades of Evidence	Sarah Lasswell

** Note: Presentations not listed in order to be presented.*

Time	Session	Room/Presenter
	Reasons for the Increasing Hispanic Infant Mortality Rate – Florida, 2004–2007	Erin Sauber-Schatz
10:00 AM – 10:30 AM	**BREAK**	
10:30 AM – 12:00 PM	**Breakout Session F**	
F1.	**Influenza and Pregnancy: Updates on the H1N1 Situation**	**Audubon BC**
12:00 PM	**ADJOURN**	
12:00 PM – 2:00 PM	**Open Invitation: Discussion with Tribal and Urban Epidemiology Programs**	**Pelican**

** Note: Presentations not listed in order to be presented.*

Concurrent Session A1

Care Issues from Pregnancy to Birth

A STUDY OF THE RELATIONSHIP BETWEEN HEALTH INSURANCE COVERAGE WITH NOT GETTING PRENATAL CARE AS EARLY AS WANTED: LOUISIANA PRAMS, 2000-2004

***Blessing Dube*, Rodney Wise, MD, Lyn Kieltyka, MPH, PhD**
Louisiana Office of Public Health, MCH Epidemiology

BACKGROUND: Several studies have emphasized the importance of prenatal care (PNC) services; monitoring PNC service usage has remained a priority in the Healthy People 2010 Initiative. Few studies have examined the relationship between pre-pregnancy health insurance coverage and receiving PNC as early as wanted.
Study Questions: Is there an association between pre-pregnancy health insurance coverage type and receiving PNC as early as wanted?

METHODS: Louisiana PRAMS data linked with Vital records birth data from 2000-2004 was used to evaluate the study question. A 70% response rate was achieved over the five year period. Unadjusted and adjusted odds ratios were estimated using simple and multivariable logistic regression. Backward elimination was used to build the models in SAS-callable SUDAAN.

RESULTS: Compared to women with private insurance, women with Medicaid insurance were 1.43(95%CI 1.13-1.81) times as likely to not receive PNC as early as wanted whereas women not having any health insurance were 2.07(95%CI= 1.77-2.41) times as likely to not receive PNC as early as wanted, after controlling for maternal characteristics and other significant covariates. The addition of financial, life, and system barriers to PNC services into the model did not meaningfully change the relationship between pre-pregnancy insurance coverage type and receiving PNC as early as wanted.

CONCLUSIONS: Both Medicaid and not having insurance prior to pregnancy are associated with not receiving PNC as early as wanted. Because the additional consideration of common barriers to receipt of PNC services did not meaningfully change this relationship, it is likely that new interventions specifically targeting these groups of women are required.

PUBLIC HEALTH IMPLICATIONS: In alignment with the new health care reform, policy approaches and programs should aim at addressing this gap and improving early PNC services for these groups. The system should allow pregnant women to seek and receive PNC care in their initial visit even though they may not yet have Medicaid or health insurance plan. Access to pre- and inter- conception care for all women of reproductive age may facilitate receipt of prenatal care as early as wanted.

Concurrent Session A1

Care Issues from Pregnancy to Birth

RECURRENCE OF AND RISK FACTORS FOR BREECH PRESENTATION IN CONSECUTIVE PREGNANCIES TRENDS IN RATES OF NEONATAL CIRCUMCISION IN THE UNITED STATES, 1998-2005

Jane Ford, BA, PhD, Christine Roberts, MBBS, DPhil, Natasha Nassar, Jonathon Morris, MBBS, PhD
University of Sydney, Australia

BACKGROUND: There is an increased risk of neonatal mortality associated with breech presentation. While some studies have investigated risk factors for breech birth at term, there are few studies that have identified predictive factors of breech presentation in second pregnancy. Similarly, few studies have investigated recurrence risk of breech presentation.

STUDY QUESTIONS: What is the recurrence risk of breech presentation and which risk factors are associated with a second breech-presenting birth?

METHODS: Data were obtained from linked birth, birth defect and hospital discharge datasets and included 113,854 women having at least two consecutive singleton pregnancies resulting in a birth (>400g or = 20 weeks' gestation) in New South Wales, Australia over the period 1994 to 2002. Women with a first delivery before 1994, pregnancies that were not consecutive, or with parity data missing for any pregnancy were excluded. Breech presentation was identified in birth data, previously shown to have high levels of agreement (98.3%, 98.5%) with medical records.

RESULTS: First-time breech presentation at term occurred in 4.2% of first pregnancy deliveries, 2.2% of second pregnancies and 1.9% of third pregnancies. The rate of breech recurrence in a 2nd consecutive pregnancy was 9.9%, and in a third consecutive pregnancy (after 2 prior breech deliveries) was 27.5%. First pregnancy factors associated with recurrence included placenta previa (Adjusted odds ratio [aOR] 2.6, 95% CI 1.3-5.2) and maternal age >=35 years (aOR 1.3,1.0-1.8). Second pregnancy factors included placenta previa (aOR 3.2, 1.5-6.8), birth defects (aOR 2.8,1.4-5.7) and female infant (aOR 1.2,1.0-1.5). Excluding pregnancies with birth defects did not alter these results.

CONCLUSIONS: One in ten women had a second breech presentation at term and one in four women had a third breech presentation. Risk factor analyses suggest the role of persistent maternal factors rather than first pregnancy neonatal factors play a role in repeat breech presentation.

PUBLIC HEALTH IMPLICATIONS: These consistently elevated recurrence rates highlight underlying physiological determinants of breech presentation and the need for women with a history of breech delivery to be closely monitored in the latter stages of pregnancy.

Concurrent Session A1

Care Issues from Pregnancy to Birth

TRENDS IN RATES OF NEONATAL CIRCUMCISION IN THE UNITED STATES, 1998-2005

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BACKGROUND: Recent trials demonstrate the benefits of adult circumcision for HIV prevention, increasing interest in how neonatal circumcision can reduce HIV risk.

STUDY QUESTIONS: This analysis describes recent trends in neonatal circumcision in the U.S.

METHODS: Hospital discharge data for 1998-2005 from the Nationwide Inpatient Sample of Healthcare Cost and Utilization Project (HCUP) were used to assess trends in circumcision rates per 100 newborn delivery hospitalizations. Circumcision was defined by International Classification of Diseases, 9th Rev, Clinical Modification, code=640. Prevalence rate ratios for factors associated with circumcision were assessed using Cox regression.

RESULTS: Circumcision was performed during 9,649,832 (57%) of 16,821,479 newborn male delivery hospitalizations during the 8-year period; however, rates decreased significantly from 60% (1998) to 55% (2005) (p for trend<0.0001). This decline was driven by sharp decreases in circumcision for deliveries with public insurance in the South (62% to 45%, p for trend<0.00001) and private insurance in the Northeast (77% to 70%, p for trend=0.0003). In adjusted analyses, circumcision was higher among deliveries with private versus public insurance (67% vs. 45%, adjusted PRR(95% CI)=1.76(1.70,1.82)), in the Midwest, Northeast, or South versus West regions (74%, 67%, and 61%, vs. 30%; adjusted PRRs=3.53(3.23,3.87), 2.91(2.64,3.18), and 2.80(2.56,3.07)), in rural versus urban hospitals (66% vs. 56%, PRRs(95% CI)=1.29(1.24,1.34)), and among full-term, healthy newborns compared with pre-term, low birthweight, or full-term newborns with health problems (61% vs. 54%, PRR(95% C.I.)=1.22(1.20,1.23)).

CONCLUSIONS: Following increases in neonatal circumcision in the U.S. through 2000, rates have significantly declined this decade. The decline varies widely by region, and, within some regions, by payer.

PUBLIC HEALTH IMPLICATIONS: Understanding trends in neonatal circumcision may have implications for HIV prevention in the U.S.

Concurrent Session A1

Care Issues from Pregnancy to Birth

PREDICTORS OF INSUFFICIENT SWEAT PRODUCTION DURING CONFIRMATORY TESTING FOR CYSTIC FIBROSIS, MICHIGAN NEWBORN SCREENING

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BACKGROUND: To identify cases of cystic fibrosis (CF), the Michigan Newborn Screening (NBS) Program conducts sweat-testing in infants having initial immunoreactive trypsinogen (IRT) concentrations beyond the 99.8th percentile or beyond the 96th percentile and one of 40 CF mutations identified by DNA analysis. Some infants fail to produce a sufficient quantity of sweat to test for CF, meaning disease confirmation is delayed and sweat-testing is later repeated.

STUDY QUESTIONS: Do demographic/perinatal variables predict insufficient sweat chloride production in infants initially screened positive for CF by NBS?

METHODS: This study includes resident infants born in Michigan in 2008 sweat-tested following NBS. NBS card information including age at test, birth weight, gestational age, race, sex, neonatal intensive care unit (NICU) admission, and diagnostic confirmation data including test center were used for this study. Bivariate analyses were conducted; based on significance test results, multivariate models were constructed to assess predictors of QNS.

RESULTS: Of the 315 infants sweat-tested, 63 (20%) had QNS results. Bivariate analyses revealed that preterm birth, low birth weight, NICU admission and black race were significantly associated with QNS sweat-testing results. Adjusted analyses indicated that infants born before 37 weeks gestation were nearly 3.5 times more likely to have QNS results (OR=3.4 95% CI 1.1, 10.2) compared to term born infants; other factors assessed were no longer significantly associated with QNS results. When age at time of test adjusted for gestational age (gestational age (weeks) plus week of life at sweat-test) was used in the multivariate model, infants <40 weeks of age were 2.6 times more likely to have QNS results (95% CI 1.1, 5.8).

CONCLUSIONS: Our results suggest that age at time of test, accounting for gestational age, is the driving predictor of QNS rates when controlling for other characteristics.

PUBLIC HEALTH IMPLICATIONS: It may be appropriate for clinicians to wait until infants screening positive for CF reach 40 weeks of age, adjusted for gestational age, prior to sweat-testing to reduce the QNS rate and associated repeat sweat-tests. However, further research is necessary to evaluate the potential impact of delays in treatment derivative of implementation of this guideline.

Concurrent Session A2

Workshop: Joinpoint Regression Analysis for Trend Data

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DESCRIPTION OF WORKSHOP: This workshop will introduce the participants to Joinpoint, software developed by a team in the Statistical Research and Applications Branch of the National Cancer Institute, to analyze cancer incidence and mortality trend.

In studying trend data, we are often interested in identifying the nature of changes in the trend. The Joinpoint regression model, a statistical model to describe continuous changes with several linear segments, has been successfully applied to cancer trend analysis and Joinpoint software was developed to identify the numbers and locations of change-points in such a model.

In this workshop, we will first provide an overview of the methodology and its statistical content. We will discuss how Joinpoint identifies the numbers of change-points and estimates the model parameters with their associated p-values. We also discuss various parameter settings in Joinpoint, focusing on what they are, when to use, and how to determine the parameter values. We will also discuss its extension to compare two or more groups of data in addressing questions such as if two groups share the same slope changes. Next, we will demonstrate Joinpoint software, including how to prepare the input data files, select the appropriate settings, and export and use of the results. We will also focus on some of the latest features such as Hudson's Method, AAPC, and Pairwise Differences.

Finally, we will present some examples, which are expected to highlight important characteristics and challenges in trend data analysis.

JUSTIFICATION FOR WORKSHOP: Identifying changes and describing the nature of changes in trend data is data is often an important question in epidemiological studies. Joinpoint regression analysis and Joinpoint software works as a very useful tool to answer such questions.

This workshop will provide an opportunity for the participants to acquire basic statistical knowledge on joinpoint regression analysis and to learn how to use Joinpoint software. The demonstration of the software will guide the participants with a step-by-step use of Joinpoint and will highlight some computational challenges as well as conceptual issues.

The workshop will also present information on how to download Joinpoint and resources for related materials.

BIOGRAPHICAL SKETCH OF PRIMARY PRESENTERS: Hyune-Ju Kim, Ph.D., is a Professor in the Department of Mathematics at Syracuse University. Since 1997, she has worked with the Joinpoint project team in the Statistical Research and Applications Branch at the National Cancer Institute and published six papers on this subject in collaboration with NCI staff. Her research interests also include change-point problems, sequential analysis, and statistics in genetics, and has published many theoretical articles in major statistical journals including the Journal of the American Statistical Association (JASA), Biometrika and Journal of Multivariate Analysis as well as several application papers in medical journals. She holds a Ph.D. in Statistics from Stanford University, California.

Michael Barrett is a Statistical Programmer at Information Management Services, Inc. in Silver Spring, Maryland. He has over twenty-one years of professional experience in the design, implementation, and management of computer applications for biomedical data management and statistical analysis supporting epidemiological research for the National Cancer Institute. He received his M.S. in Applied and Computational Mathematics from Johns Hopkins University. He has led the team of programmers writing the Joinpoint Regression Program software since 2000.

Concurrent Session A3

Scaling Up to Measure Un-Healthy Weight from Pregnancy Through Adolescence

LOW PREGNANCY WEIGHT GAIN AND SMALL FOR GESTATIONAL AGE: A COMPARISON OF THE ASSOCIATION USING THREE DIFFERENT MEASURES OF SMALL FOR GESTATIONAL AGE

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BACKGROUND: Results of a recent evidence-based review of pregnancy weight gain (PWG) and birth outcomes found strong evidence for an association between PWG below current recommendations and small for gestational age (SGA). Associations were modest and most studies defined small for gestational age SGA as a birthweight below the 10th percentile for an infant's gestational age in relation to a population-specific reference.

STUDY QUESTIONS: What is the association between PWG and (SGA) as defined by three methods that vary by level of restriction? In addition, what is the population attributable fraction (PAF) of weight gain below current IOM recommendations for the three different measures of SGA?

METHODS: A retrospective cohort study of 104,980 singleton, term births from the 2000-2005 Pregnancy Risk Assessment Monitoring System (PRAMS). SGA was defined by three methods: 1) > two standard deviations below birthweight for gestational age (SGA2sd)—most restrictive; 2) a customized measure accounting for maternal/infant characteristics (SGACust); and 3) <10th percentile of birthweight for gestational age using a population-based reference (SGAPop)—least restrictive. Logistic regression models estimated the association of PWG with each of the SGA definitions while adjusting for maternal age, race/ethnicity, education, marital status, parity, Medicaid status, smoking status during pregnancy, and infant gender.

RESULTS: Compared with women who gained 15-25 lb during pregnancy, women who gained 1-14 lb had 1.5 greater odds (95% CI: 1.2, 1.8) of SGA for the most restrictive definition and 1.2 greater odds (95% CI: 1.1, 1.4) for the least restrictive definition, after adjustments for confounders. Depending upon the definition used, PWG below current Institute of Medicine recommendations contributed to 10-15% of SGA, representing 0.8%-1.2% of all singleton term infants.

CONCLUSIONS: Associations between low PWG and SGA varied little by definition of SGA and contributed to a small proportion of SGA infants.

PUBLIC HEALTH IMPLICATIONS: Public health efforts to prevent low PWG, if successful, will have modest effects on SGA rates.

Concurrent Session A3

Scaling Up to Measure Un-Healthy Weight from Pregnancy Through Adolescence

RACIAL/ETHNIC DISPARITIES IN PREVALENCE OF CHILDHOOD OBESITY—TEXAS, 2004-2005

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Texas Department of State Health Services, Michael & Susan Dell Center for the Advancement of Healthy Living

BACKGROUND: Childhood obesity has disproportionately affected some racial/ethnic groups. National data from 2003–2004 show high childhood obesity prevalence among Black girls (24%) and Hispanic boys (22%).

STUDY QUESTIONS: Among Texas children, where Hispanics are the single largest racial/ethnic group, what is the prevalence of obesity, defined as body mass index (BMI) =95th percentile of BMI-for-age growth charts, and how does this differ by race/ethnicity?

METHODS: A cross-sectional, school-based obesity surveillance survey, was conducted during school year 2004-2005 among Texas children in the 4th, 8th and 11th grades. Height and weight were measured using a stadiometer and a digital scale, respectively. Obesity prevalence was calculated, stratified by grade, sex and racial/ethnic group. Multivariate logistic regression was used to look at differences in prevalence among racial/ethnic groups, while controlling for age, sex, degree of urbanization, and school-level socio-economic status (SES).

RESULTS: More than one-third (34.7%, 95% CI: 30.8%-38.9%) of Hispanic 4th grade boys were obese and almost two times more likely than their white peers (AOR: 1.9, 95% CI: 1.3-2.7, p=0.001) to be obese. Among 8th graders, the highest rates of obesity were seen in Blacks with not much difference between boys (23.6%, 95% CI: 17.2%-31.5%) and girls (22.2%, 95% CI: 14.6%-32.1%). Black boys in the 8th grade were twice as likely as white boys to be obese (AOR: 2.1, 95% CI: 1.1-4.1, p=0.03) and Black girls more than three times as likely as white girls to be obese (AOR: 3.5, 95% CI: 1.5-8.0, p=0.003). Among 11th graders, obesity in boys was double the rates seen in girls, except among Blacks, with 28.6%, (95% CI: 18.9%-40.7%) in boys 21.7% (95% CI: 12.3%- 35.3%) in girls. Black girls in the 11th grade were also more than three times more likely than white girls to be obese (AOR: 3.5, 95% CI: 1.5-8.0, p=0.003).

CONCLUSIONS: Disparities in prevalence of obesity among racial/ethnic subgroups in Texas are consistent with national estimates, with the highest rates seen in Black and Hispanic children.

PUBLIC HEALTH IMPLICATIONS: State and national efforts to prevent childhood obesity must take into account differences in the racial-ethnic groups that have been disproportionately affected.

Concurrent Session A3

Scaling Up to Measure Un-Healthy Weight from Pregnancy Through Adolescence

PILOT STUDY OF AN APPROACH FOR ESTIMATING POPULATION-BASED BODY MASS INDEX IN OHIO SEVENTH GRADERS

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BACKGROUND: Despite the growing nationwide problem of childhood obesity, routine sources of population-based information on body mass index (BMI) among children of middle school age are largely unavailable. This data gap limits the ability of state and local agencies to monitor trends and adequately target childhood obesity and overweight interventions. We therefore designed an in-school pilot survey to test the feasibility of routinely collecting standardized anthropomorphic measures on a sample of seventh graders for use in estimating statewide and regional BMI.

STUDY QUESTIONS: Is it feasible to obtain reliable state-wide population-based estimates of BMI among middle school aged children in Ohio?

METHODS: A stratified random cluster sample of schools, with sampling proportional to size of seventh grade student enrollment, was selected from the 2007-2008 public school roster of the Ohio Department of Education. Trained health care professionals, using state purchased medical grade equipment, obtained height and weight measurements and collected self-reported race and ethnicity. Age and sex appropriate BMI measures were calculated and categorized according to Centers for Disease Control and Prevention (CDC) criteria. We then carried out descriptive analyses comparing BMI of students by sex, race/ethnicity, and Ohio county type.

RESULTS: Of 36 schools and 6,813 seventh graders in the initial sample, we obtained participation from 29 schools (75%) and valid BMI measurements on 3,574 students (52% of the original sample). An estimated 23.7% (95% CI: 21.1%-26.2%) of Ohio seventh graders in the 2007-2008 school year were classified as overweight, and another 19% (95% CI: 16.5-21.5) were at risk of overweight. Point estimates of the percentage overweight and/or risk of overweight varied by sex, race/ethnicity, and county type, but odds ratios were not statistically significant at the .05 level.

CONCLUSIONS: Our sampling strategy, coupled with in-school measurements, holds much promise for regular monitoring of overweight status in seventh graders. Additional work is needed to assure optimal sample sizes, survey representativeness, and valid survey responses.

PUBLIC HEALTH IMPLICATIONS: A mechanism for routine statewide surveillance of BMI in seventh grade students will enhance and inform development of appropriately targeted childhood obesity interventions.

Concurrent Session A3

Scaling Up to Measure Un-Healthy Weight from Pregnancy Through Adolescence

CHILD AND ADOLESCENT WEIGHT STATUS COMPARED TO PARENT AND SELF PERCEIVED WEIGHT STATUS IN A CHICAGO PILOT STUDY

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BACKGROUND: Studies have shown that parents misclassify their child's overweight status. Misconception of overweight status could prevent parents from taking action to reduce their child's weight and reduce risk of overweight and its associated diseases into adulthood.

STUDY QUESTIONS: This study aims to describe and compare a) child weight status derived BMI percentile calculated from parent reported height and weight with parental perception of weight status; b) adolescent weight status derived from BMI percentile calculated from adolescent reported height and weight with adolescent perception of weight status, and c) parental perception of weight status with adolescent perception of weight status.

METHODS: The Chicago pilot for the Illinois Health Survey, a telephone survey conduced in the summer of 2008, surveyed parents about a selected child and selected adolescents about themselves. BMI percentiles were determined using reported height, weight, gender, and age for children aged 2-17 (n=385). Both parental and adolescent (aged 12-17, n=67) misclassification were determined, cases were described, and multi-variable analysis conduced to identify predictors of misclassification. Parental perception of weight status was compared to adolescent perception and predictors of non-concordance were identified. Additional analysis will be presented. One limitation of the study is that race and ethnicity were not collected for each child case.

RESULTS: Nearly 90% of parents of overweight children misclassified their child's weight. Overweight children were 41.3 times more likely to have their parents misclassify them as a lower weight status compared to normal weight children. Approximately 92% of overweight adolescents misclassified their own weight status. Overweight adolescents were 59.5 times more likely to have misclassified their weight compared to normal weight adolescents. Among overweight adolescents, adolescents and parents disagreed on their weight status 85% of the time. Overweight adolescents were 15.6 times more likely to have a different perception about their weight than their parents compared to normal weight adolescents.

CONCLUSIONS: The strongest predictor of misclassification for parents and adolescents and differing perception between adolescents and parents is overweight status.

PUBLIC HEALTH IMPLICATIONS: Misunderstanding their weight status could lead to inaction with regard to weight reduction or maintenance and hence lead to increased rates of overweight and its associated diseases into adulthood.

Concurrent Session A4

Do Healthier Mothers Make Healthier Parents?

POSTPARTUM DEPRESSION AMONG MISSOURI WOMEN, 2007

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BACKGROUND: Postpartum depression (PPD) among new mothers is an important maternal and child health concern with an estimated prevalence of 12% in the US. One of the Healthy People 2010 (HP 2010) developmental objectives is to reduce maternal illness and complications due to pregnancy including postpartum depression (16-5C). PPD could occur within a year after delivery and has the potential to adversely impact the health and well being of both the mother and the child. Identification of factors associated with PPD will help timely screening, diagnosis and treatment of at risk women.

STUDY QUESTIONS: What are the risk factors for PPD among new mothers in Missouri?

METHODS: The data for this study was obtained from the 2007 Missouri Pregnancy Risk Assessment Monitoring System (PRAMS) survey. Self-reported data from 1390 new mothers responding to the 2007 PRAMS questions inquiring about PPD was analyzed with respect to maternal demographics and behaviors surrounding pregnancy. Univariate and multivariate binomial regression analyses were performed to estimate the associations and identify risk factors associated with PPD. SAS callable SUDDAN was used for analyses to account for the complex sample survey design.

RESULTS: Overall, 16% of new mothers in Missouri reported experiencing symptoms of PPD. In the univariate analysis, except for alcohol consumption, statistically significant associations ($p<0.05$) were observed between PPD and maternal age, race, education, marital status, pregnancy intention, health insurance status, number of prenatal stressors and smoking. In the multivariate model, Medicaid for prenatal care (adjusted prevalence ratio (APR): 1.93, 95% CI: 1.26-2.95) and experiencing 3+ prenatal stressors (APR: 3.12, 95% CI: 1.78-5.47) were significantly associated with PPD. 15% (95% CI: 13%-18%) and 27% (95% CI: 18%-37%) of the women who did and did not have a postpartum check respectively suffered from symptoms of PPD.

CONCLUSIONS: Missouri women on Medicaid and those experiencing multiple prenatal stressors are at an increased risk of suffering from PPD.

PUBLIC HEALTH IMPLICATIONS: Knowledge of risk factors will help identify women at higher risk for PPD in a timely manner for appropriate interventions and preventive services.

Concurrent Session A4

Do Healthier Mothers Make Healthier Parents?

ETHNIC DIFFERENCES IN PERCEPTIONS OF MOTIVATORS AND BARRIERS TO POSTPARTUM WEIGHT LOSS EFFORTS AMONG LOW INCOME WOMEN

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BACKGROUND: Childbearing may be a transitional period for weight gain for roughly a fifth of women. Because low-income women face financial barriers in accessing commercial programs, effective public health programs to promote weight loss are needed for this population. To market and design such programs, an understanding is needed of how ethnic groups may differ in their perceptions of the facilitators and barriers to weight loss.

STUDY QUESTIONS: Study Question: Do non-Hispanic (NH) White, NH-African American and Hispanic women differ in their perceptions of the facilitators and barriers to weight loss at 3 months postpartum?

METHODS: Data came from the Austin New Mothers Study, a longitudinal study of Medicaid recipients who had normal, term pregnancies. Of 365 cases with available data at 3 months postpartum, 233 were overweight (body mass index of 25 or greater) and served as the analytic sample (24.5% White, 27.0% African American, 48.5% Hispanic). The Pros and Cons subscales of the Decisional Balance Inventory were used to measure perceived facilitators of and barriers to postpartum weight loss. Each subscale contains 10 items with established psychometric properties.

RESULTS: Ethnic groups differed significantly on the Pros (facilitators) of weight loss ($F = 4.56$, $p = 0.01$), but did not on the Cons (barriers) ($F = 0.26$, $p = 0.767$). Among Pros, items about feeling sexier, being able to wear more attractive clothes, and having more energy, were rated as more important Pros of weight loss by White women than African American or Hispanic women. By contrast, Pros of weight loss, such as leading to feelings of greater optimism or improving health, were reported by all groups as being very or moderately important, respectively.

CONCLUSION: Ethnic differences were found in the perceptions of the Pros of weight loss.

PUBLIC HEALTH IMPLICATIONS: Marketing public health weight loss programs based on improvement in health is likely to appeal to women of diverse ethnic backgrounds.

Concurrent Session A4

Do Healthier Mothers Make Healthier Parents?

AN EXAMINATION OF THE RELATIONSHIP BETWEEN CHILDHOOD MALTREATMENT, PRETERM DELIVERY, AND GESTATIONAL LENGTH OF PREGNANCY

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BACKGROUND: Preterm birth is associated with neonatal and child morbidity. It accounts for over 50% of infant mortality. Child maltreatment is known to influence health and well-being across the life-span. Childhood sexual abuse and preterm delivery have been associated. This study examined the life-course relationship between childhood maltreatment, preterm delivery, and gestational length.

STUDY QUESTIONS: Is childhood maltreatment associated with preterm delivery or shortened gestation?

METHODS: The National Longitudinal Study of Adolescent Health (Add Health) features survey data from a large, nationally representative sample of US adolescents. Add Health Wave I and Wave III public-use datasets were utilized in this study to examine delivery outcomes and exposure to four types of childhood maltreatment (supervision neglect, physical neglect, physical assault, and sexual abuse) prior to the 6th grade. Health risks were examined from Wave I data when respondents were in grades 7-12 (n=6550); reproductive history, childhood maltreatment, and demographic data were collected in Wave III from original respondents at ages 18-26 (n=4882). Logistic and linear regression models (weighted and unweighted) were used to estimate the effect of maltreatment on preterm delivery status (dichotomous) and length of gestation (continuous) with adjustment for health risks and demographics. Study limitations include recall bias, response bias, ensuring temporal order of events, and practicality of the use of common demographics in a young population.

RESULTS: Of 518 women reporting a 1st birth, 10% delivered prematurely. In unweighted crude analyses, women reporting physical neglect were 2.70 times more likely to have a preterm delivery (1.16-6.26, p=0.05) and physical neglect was correlated with a 0.82 week decrease in gestation (0.13-1.50, p=0.05). After adjustment for sociodemographics, maltreatment type, risky behaviors and depression, women reporting physical neglect were 3.98 times more likely to deliver prematurely (1.19-13.25, p=0.05); physical neglect was correlated with a 1.00 week decrease in gestational length (0.08-1.01, p=0.05). In weighted analyses, the odds ratio for physical neglect and preterm delivery status was 3.02 (0.96-9.48, p=0.058).

CONCLUSIONS: Physical neglect in childhood was found to be significantly associated with both preterm delivery status and gestational length.

PUBLIC HEALTH IMPLICATIONS: Interventions mitigating childhood maltreatment may reduce preterm birth.

Concurrent Session A4

Do Healthier Mothers Make Healthier Parents?

IS THERE AN ASSOCIATION BETWEEN BREASTFEEDING DURATION AND MATERNAL WEIGHT RETENTION AT ONE YEAR POSTPARTUM, AND DOES BREASTFEEDING INTENSITY MODIFY THE RELATIONSHIP?

Deborah Dee, PhD, MPH, Andrea Sharma, PhD, MPH, Kelly Scanlon, PhD, RD

BACKGROUND: Breastfeeding guidelines call for 4–6 months of exclusive breastfeeding and continued breastfeeding for >=1 year. In addition to other protective health effects, breastfeeding has been associated with lower maternal postpartum weight retention (PWR), which may reduce obesity risk. The association between breastfeeding and PWR is controversial, however, as few PWR studies have examined both breastfeeding duration and intensity.

STUDY QUESTIONS: Is breastfeeding duration associated with PWR at one year? Is the association modified by breastfeeding intensity?

METHODS: We used data from the Infant Feeding Practices Study-II, a longitudinal study of US mother-infant pairs followed through one year postpartum, wherein mothers completed near-monthly questionnaires assessing frequency of infant intake of breast milk, formula, and foods in the previous week. We used linear regression to examine the association between breastfeeding duration and PWR among 1,328 breastfeeding mothers of term infants, and tested for effect modification by breastfeeding intensity. Intensity was calculated as the average percentage of infant milk feedings that were breast milk in those months a mother reported giving any amount of breast milk, and was categorized as low (<=75%), medium (76-99%), and high (100%). We controlled for maternal education, race/ethnicity, pregravid body mass index, marital status, and age.

RESULTS: Mean breastfeeding duration was 9 months (standard deviation [SD]=3.9), and mean PWR at 1 year was 3.5 pounds (SD=14.8). Each month of breastfeeding was associated with a 0.41 pound decrease in PWR (standard error [SE]=0.12, p<.0006). Breastfeeding intensity, however, modified this effect. The association between breastfeeding duration and PWR was only evident among women with high breastfeeding intensity. For these women, each additional month of breastfeeding was associated with a 0.67 pound decrease in PWR (SE=0.27, p=0.01).

CONCLUSIONS: When breastfeeding intensity was taken into account, the association between breastfeeding duration and reduced PWR was evident only among mothers in the high intensity category. Future studies of the relationship between breastfeeding and PWR should include measures of both breastfeeding duration and intensity.

PUBLIC HEALTH IMPLICATIONS: To reduce PWR and potentially reduce obesity risk, mothers should be encouraged to follow guidelines to exclusively breastfeed 4-6 months and continue breastfeeding >=1 year.

Concurrent Session A4

Do Healthier Mothers Make Healthier Parents?

VITAMIN D INTAKE AND ENDOMETRIAL CANCER RISK IN POSTMENOPAUSAL WOMEN IN THE IOWA WOMEN'S HEALTH STUDY

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BACKGROUND: Recently, several studies have established vitamin D deficiency as a possible risk factor for several types of cancer, including breast, colon and prostate. The relationship between vitamin D and endometrial cancer remains unclear. No large cohort study has yet examined endometrial cancer risk in relation to vitamin D intake from diet and supplements.

STUDY QUESTIONS: Is there an association between dietary and supplemental vitamin D intake and incident endometrial cancer?

METHODS: Data were obtained from the Iowa Women's Health Study. Questionnaires that included diet and supplement use were mailed to a random sample of 98,826 women between the ages of 55 and 69 based on the 1985 Iowa driver's license list. A total of 23,348 women were followed for endometrial cancer incidence from 1986 to 2004. Age-adjusted and multivariate-adjusted hazard ratios (HR) and their 95% confidence intervals (CI) were calculated using Cox proportional hazards regression.

RESULTS: No statistically significant association between dietary vitamin D and endometrial cancer was observed. Women consuming >800 IU/day dietary and supplemental vitamin D were at marginally higher risk for endometrial cancer than women consuming <400 IU/day (HR: 1.33, 95% CI: 1.00-1.77). Excluding dietary vitamin D, women consuming <400 IU/day of supplemental vitamin D were at significant higher risk for developing endometrial than women not taking supplements (HR: 1.43, 95% CI: 1.11-1.85). However, there was no association among women taking vitamin D supplements with >400 IU/day and endometrial cancer risk when compared to women not taking supplements (HR: 1.09, 95% CI: 0.88-1.36).

CONCLUSIONS: No association between dietary vitamin D and endometrial cancer was observed. In fact, while not statistically significant, the findings suggest that endometrial cancer risk may be higher with higher levels of vitamin D intake. Evaluating supplement use alone, women taking <400 IU supplemental vitamin D/day had significantly higher risk of developing endometrial cancer compared to non-supplement users, although the association was likely due to chance.

PUBLIC HEALTH IMPLICATIONS: Further studies are needed using both dietary/supplemental vitamin D intake and sunlight exposure to better understand vitamin D's potential role in the prevention or promotion of endometrial cancer.

Concurrent Session A5

Encouraging Breastfeeding

BREASTFEEDING INITIATION AND CONTINUATION BY MATERNAL CHARACTERISTICS AMONG WOMEN RECEIVING WIC BENEFITS AND THOSE ELIGIBLE FOR WIC BUT NOT ENROLLED, PRAMS 2000-2005

***Nan Ruffo, MPA*, Norma Harris, PhD**
CDC - SAIC Contractor

BACKGROUND: Previous studies have shown that the rate of breastfeeding initiation and continuation are lower among WIC participants than non-WIC mothers. However, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) has improved their breastfeeding promotion and support activities. By 2002, most states were conducting some peer counseling and seven states had fully implemented peer counseling, which have proven to be a factor in the increase of breastfeeding continuation in minority populations.

STUDY QUESTIONS: Has breastfeeding initiation and continuation improved among the WIC participants in comparison to their eligible counterparts who did not participate in WIC?

METHODS: We analyzed 2000-2005 data from the Pregnancy Risk Assessment Monitoring System (PRAMS) from 15 states. Our study population was divided into two groups, women participating in WIC during pregnancy and those eligible for but not enrolled in WIC during pregnancy. Multivariate logistic regression was used to examine the relationship between WIC participation and breastfeeding.

RESULTS: Breastfeeding initiation and continuation was significantly lower ($p<0.01$) among eligible mothers enrolled in WIC (initiation: 67.0%; 8 weeks: 41.6%) compared to eligible women not enrolled in WIC (initiation: 71.4%; 8 weeks: 48.7%). However, our data also show that there was a statistically significant increase in breastfeeding initiation (7.12%, $p<0.01$) and continuation (5.58%, $p<0.01$) among WIC mothers. In addition, WIC mothers who were either Black non-Hispanic, age <20, age 30-34, received less than a high school education, or did not discuss breastfeeding with their health care worker had a statistically significant increase in breastfeeding initiation and continuation unlike their non-WIC counterparts.

CONCLUSIONS: While eligible non-WIC mothers tend to have a greater prevalence of breastfeeding initiation and continuation, it appears that the efforts made by the WIC program to increase promotion and support for breastfeeding have had a positive impact. WIC mothers are showing an improvement in breastfeeding. With continued support for these mothers, the WIC program has an opportunity to achieve breastfeeding rates comparable to non-WIC mothers.

PUBLIC HEALTH IMPLICATIONS: WIC programs should increase their promotion efforts, peer counseling, and support for breastfeeding and develop strategies based on demographic characteristics and barriers to breastfeeding to improve outcomes.

Concurrent Session A5

Encouraging Breastfeeding

MATERNITY CARE PRACTICES AND BREASTFEEDING AMONG WOMEN DELIVERING A LIVE-BORN INFANT: EVIDENCE FROM THE PREGNANCY RISK ASSESSMENT MONITORING SYSTEM, 2004-2006

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BACKGROUND: Research shows that health care facilities where women deliver their babies play an important role in promoting breastfeeding. Using data from the Pregnancy Risk Assessment Monitoring System (PRAMS), our study examines maternity care practices and breastfeeding duration among racial or ethnic groups.

STUDY QUESTIONS: What is the association between maternity care practices and breastfeeding among various racial and ethnic groups?

METHODS: PRAMS is a state, population-based surveillance system that collects information on maternal behaviors. We used multiple years of data from 11 states and New York City that collect data on maternity care practices from 2004-2006 with response rates 70% or higher. Data were examined using the SUDAAN software package that adjusts for complex survey methodology and non-response. This analysis focused on women with live-births whose breastfeeding status was known (n=49,098). 10 maternity care practices ascertained by the PRAMS survey were examined and the analysis adjusted for several demographic variables. The outcome variable for multivariable analysis was breastfeeding continuation to 10 weeks or longer.

RESULTS: PRAMS data show that overall, 22% (se=0.30) did not initiate breastfeeding, 28% (se=0.32) breastfed for less than 10 weeks, and 50% (se=0.35) breastfed for 10 weeks or longer. Of the women who initiated breastfeeding, 36% (se=0.39) stopped prior to 10 weeks and 64% (se=0.39) continued to 10 weeks or longer. Patterns of breastfeeding duration varied by race/ethnicity in that 67% (se=0.51) of whites, 62% (se=0.80) of Hispanics, and 55% (se=1.12) of the Black women breastfed 10 weeks or longer. Practices consistently associated with duration of 10 weeks or longer were initiation within the first hour after birth (adjusted OR=1.24; 95%CI: 1.09-1.41); giving breast milk only (AOR=2.41; 95%CI: 2.13-2.73); and breastfeeding on demand (AOR=1.19; 95%CI 1.03-1.37). Women who discontinued breastfeeding prior to 10 weeks were those who reported that their infants were given pacifiers (AOR=0.79; 95% CI: 0.71-0.89) and having received a gift pack with formula (AOR=0.79; 95% CI: 0.68-0.92). Patterns of maternity care practices associated with breastfeeding duration varied by racial and ethnic groups.

CONCLUSIONS: Breastfeeding behaviors of women responding to the PRAMS survey varied by race and ethnic groups. Patterns of maternity care practices and breastfeeding continuation to 10 weeks or longer varied by race and ethnicity.

PUBLIC HEALTH IMPLICATIONS: The results can be used to inform maternity care practices at health facilities that promote breastfeeding, especially among groups of women that are less likely to breastfeed.

Concurrent Session A5

Encouraging Breastfeeding

THE EFFECT OF IMMEDIATE SKIN-TO-SKIN CONTACT ON BREASTFEEDING DURATION: FINDINGS FROM CALIFORNIA'S MATERNAL AND INFANT HEALTH ASSESSMENT (MIHA), 2006-2008

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BACKGROUND: Formula-feeding has been shown to significantly increase morbidity and mortality in infants, and morbidity in mothers. Policies at birthing hospitals can impact short- and even long-term formula use. One such policy is placing infants skin-to-skin on their mothers' chest immediately after birth. A recent Cochrane Review found such contact resulted in longer duration of exclusive breastfeeding, presumably due to hormonal imprinting. However, length of contact period was not studied. Income is also known to impact formula use.

STUDY QUESTIONS: Is there a relationship between length of skin-to-skin contact between mothers and infants in the first two hours after birth, and exclusive breastfeeding at two or three months? Does this hold for all incomes?

METHODS: Every year, 3,500+ representative California mothers of 3-to-7-month-old infants are enrolled in MIHA. In 2006-2008, mothers were asked about length of skin-to-skin contact they had with their infant within first 2 hours (in roughly 30-minute increments). They were also asked about later feeding methods. (A limitation: in 2006, mothers were asked about feeding at 2 months; in 2007-2008 they were asked about 3 months.) We chose WIC enrollment to identify income level, because of WIC's breastfeeding support. SAS was used to do cross-tabulation and Cochran-Armitage trend tests on weighted MIHA data for year, length of contact, and WIC status, by later rates of exclusive breastfeeding.

RESULTS: The longer the mother was allowed skin-to-skin contact within first 2 hours after birth, the greater the probability of exclusive breastfeeding at 2 or 3 months. This trend held for both low- and high-income mothers in all 3 years (although breastfeeding rates were lower in the low income group). Of the 6 two-sided trends, 5 were significant at the .01 level or better.

CONCLUSIONS: The birthing hospital practice of longer skin-to-skin contact makes a significant difference to breastfeeding success two or three months later, regardless of income.

PUBLIC HEALTH IMPLICATIONS: The Birth and Beyond California Program trains administrators of birthing hospitals to institute policies which are known to support breastfeeding. They will add these results to their arsenal. Others can too.

Concurrent Session A5

Encouraging Breastfeeding

THE EFFECT OF IMMEDIATE POSTPARTUM DEPO PROVERA RECEIPT ON BREASTFEEDING DURATION

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BACKGROUND: The Depo-Provera (DP) package insert recommends that exclusive breastfeeding (BF) women should not receive DP until six weeks postpartum; no recommendations exist for BF women supplementing with formula. Anecdotal evidence suggests this practice is negatively associated with BF duration. Empirical evidence establishing a correlation between DP receipt and BF duration is both limited and equivocal, and off-label administration of DP in the immediate postpartum occurs in many settings.

STUDY QUESTIONS: Among women initiating BF, does immediate postpartum DP administration affect BF duration within six-months postpartum?

METHODS: Preliminary analyses were conducted with data from a prospective cohort study of 842 postpartum BF women with uncomplicated, singleton term deliveries, recruited from two urban hospitals. Respondents completed in-person enrollment interviews and mailed surveys at 2-weeks, 3-months and 6-months to assess BF experience and outcomes. These data were merged with birth-certificate/obstetric chart data. Kaplan-Meier curves assessed the unadjusted relationship between DP and BF cessation. Covariates classified as confounders and included in the multivariable model were associated with both BF cessation and DP receipt (cutoff=0.2). Hazard ratios (HR) and 95% confidence intervals (CI) of BF cessation were estimated using the Cox Proportional Hazards Model adjusting for known maternal demographic confounders, pregnancy intendedness, prenatal care adequacy, BF goal/milestone and timing of infant-feeding decision. Only those with pregnancy intendedness and adequacy of care data were included in the analysis (n=672).

RESULTS: Kaplan-Meier results showed a crude detrimental association between postpartum DP receipt and BF duration (log-rank $p<0.0001$); after adjustment for confounders, this significant association remained (aHR 2.424; CI 1.227, 4.790). Education and timing of infant feeding decision significantly predicted longer BF duration. Though significant, this relationship may be spurious due to a small exposed group (n=30) and unmeasured confounders.

CONCLUSIONS: After controlling for confounders, BF women receiving DP immediately postpartum were 2.4 times more likely to cease BF within six-months relative to non-recipients.

PUBLIC HEALTH IMPLICATIONS: Immediate postpartum DP receipt may limit BF duration, in turn negating short or long term maternal/infant benefits associated with BF. Further prospective research with a larger exposed group evaluating the effect of immediate postpartum DP on both BF duration and exclusivity are warranted.

Concurrent Session A6

It's No Accident: Injury and Violence among Children and Adolescents

PROJECTUL LUMINITA: A PILOT STUDY OF PEDIATRIC INJURY RISK IN A ROMA COMMUNITY

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BACKGROUND: The Roma are Europe's largest minority, with numbers estimated between 6.3 and 8.5 million people, most of whom live in central and Eastern Europe. Romania has the largest population of Roma, with numbers estimated between 500,000 and 1.5 million. However, few studies have focused on Roma health in Romania, and there are critical data gaps in terms of disease surveillance and health indicators.

STUDY QUESTIONS: What are the risk factors for pediatric injury in the small, rural village of Sînpaul, located outside Cluj-Napoca, Romania?

METHODS: We combined ethnographic and epidemiologic methods to understand family and community dynamics, child health status, and injury risk. With the support of community members, we interviewed educators, healthcare providers, and municipal authorities. We also interviewed the official Roma liaison to the grammar school and Roma family members. We completed in-home and community observations using an injury checklist developed for this study. Indoor air quality was measured twice (winter and spring) to study indoor exposures. We took photographs, conducted mapping, and collected aggregate data from medical records and available community demographic data. Interview and observational data were analyzed using formal qualitative methods. We conducted descriptive analysis of injury checklist, air quality readings, medical records, and demographic data. We mapped the community (there are no official maps) using latitude/longitude measurements and layered spatial data with locations of risks to evaluate proximity of risk factors and households with children.

RESULTS: Preliminary results indicate a range of injury hazards, including indoor carbon monoxide levels from heating and cooking sources, burn risk from open heating/cooking, and poor insulation and ventilation. Community risks included road traffic, metal garbage (e.g., rusting cars, refrigerators), and undomesticated dogs. Moreover, additional risk stems from social determinants like poverty, unemployment, education, and discrimination. We worked with community members to develop recommendations for intervention.

CONCLUSIONS: Injury risk is a serious problem in this Roma community. Risk factors exist at the household, community, and sociocultural levels. These risk factors are preventable.

PUBLIC HEALTH IMPLICATIONS: The study helps fill important gaps in understanding the problem of pediatric injury in Roma communities. It lays the groundwork for future research and the development of community-based initiatives to prevent child injury. It provides preliminary evidence for a mixed-methods approach designed to create evidence-based sustainable change in the health status of children within rural Roma communities.

Concurrent Session A6

It's No Accident: Injury and Violence among Children and Adolescents

YOUTH VIOLENCE RISK FACTORS AMONG PREADOLESCENTS IN PUERTO RICO: FROM RESEARCH TO INTERVENTION

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BACKGROUND: Youth violence is a serious public health problem, associated to individual, family, school, peer, community, and behavior related risk factors. Being male, older, not having parental supervision or support, low academic performance, having delinquent and substance-using peers, having access to alcohol and drugs, and consuming illicit substances have all been identified as risk factors for youth violence.
Puerto Rico's (PR) children are significantly affected by violence in terms of mortality, injuries, health service costs, and safety issues. Homicides are the third cause of death for children ages 10-14, who also comprise 21% of all intentional injuries reported to PR's Trauma Registry. Over 13% of PR's high school students have been part of a physical fight at school in the past year. While multiple national and local studies have addressed youth violence and its risk factors among adolescents, data on younger children in PR, the US, and elsewhere is scarce.

STUDY QUESTIONS: The purpose of this study was to estimate the prevalence of youth violence risk factors among preadolescent school-children in PR. Through this presentation, the researchers aim to: (1) describe the prevalence of youth violence and its risk factors, by category, amidst the study population, (2) identify the risk factors that most influence violent behavior among fifth and sixth grade students in PR, (3) assess the variability contributed by the identified risk factors in preadolescent's self-reported violent behaviors, and (4) propose potential risk-factor focused interventions to prevent youth violence among PR's children. It was expected that prevalence of violent behavior would vary according to the prevalence of risk factors experienced by the child.

METHODS: This cross-sectional study consisted of the secondary analysis of data from the Consulta Juvenil (CJ) V: preadolescentes project. CJ's total multistage stratified cluster sample (n=7,939) was representative of all 5th and 6th grade students in public and private schools in PR (n = 118,658) during years 2000-02. Risk factors were categorized according to their type – individual, family, school, peer, community, behavioral – and stratified by age, gender, and grade-level. A multiple linear regression was conducted to assess the contribution of each risk factor category to the children's self-report of violence. Given its cross-sectional design, this study's findings are limited to providing a snapshot view of this public health problem, given causality cannot be inferred between violence and the studied risk factors.

RESULTS: Forty-three percent (43%) of all preadolescent school children in PR self-reported engaging in at least one violent incident during the past 12 months: fights at school or off-campus, stealing, arson, or damage to property. School-violence violence was the most commonly reported violent act (41%). The eldest elementary schoolchildren (sixth graders) and male students reported the highest prevalence for all violence types. Individual, family and school-based risk factors were responsible of the most variability in violent behavior amidst this earlier childhood age group. Being male and of higher grade level was responsible of the greatest change of units in the violence index. Church-attendance was identified as a significant protective factor.

CONCLUSIONS: These findings were consistent with the reviewed literature—violent behavior varies according to the type and quantity of the risk factors present. Nonetheless and differing with previous studies on middle and high school students, individual, family and school-based risk factors were responsible of the most variability in violent behavior amidst this younger age group; whereas peer-influence, behavioral and community-based risk factors contributed the least.

This study's main significance lies in that the researchers found no prior studies that address youth violence with a fully school-based, elementary grade level sample in PR. Therefore, its findings could serve in the development of further studies to expand the limited current knowledge on violence among younger children, help explain the differences in the impact different risk factor categories have on violence among children of different age groups, and the development of research-based interventions for its prevention.

PUBLIC HEALTH IMPLICATIONS: Most of the very limited violence prevention efforts employed by the health and school systems in PR are aimed at middle and high school students. These programs are usually focused on those violence risk factors that affect adolescent and young adult populations (drugs, alcohol use, gangs). Nonetheless, given the significantly higher prevalence of violent behavior found among elementary grade-level children, it is recommended that the current violence prevention strategies be reassessed and expanded to include prevention efforts during earlier childhood stages. Furthermore, findings from this study show that the violence risk factors that exert the most influence on violent behavior among adolescents are not the same ones that cause variability in violent behavior during earlier childhood years. It is necessary for these novel violence prevention strategies to be tailored for the younger audience in terms of its design, implementation strategy, messaging, and approach to violence.

Concurrent Session A6

It's No Accident: Injury and Violence among Children and Adolescents

CHILD AND CASEWORKER REPORTS OF MALTREATMENT AND THE RISK OF SUICIDE-RELATED OUTCOMES: RESULTS FROM A NATIONAL STUDY

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BACKGROUND: Suicide is an important public health problem. Between 2000 and 2006, roughly the same period during which the current study took place, nearly 20,000 youth ages 11 to 21 took their own lives. Suicidal thinking and non-fatal self-harm injuries increase sharply during adolescence. Mental health disorders and child maltreatment are two consistently cited risk factor for suicide-related outcomes. Moreover, ample evidence supports that child mental health problems are a critical issue in the child welfare services system, and yet very little is known about suicide related behaviors among children involved with child protective services.

STUDY QUESTIONS: This study reports the results of a longitudinal study of the effects of maltreatment type(s) and severity on suicide-related outcomes. Both child and caseworker data was used to assess answers to the following questions: 1. Is more severe maltreatment associated with increased risk of suicide-related outcomes among maltreated children? 2. Are multiple types of maltreatment associated with increased risk of suicide-related outcomes?

METHODS: Child-reported maltreatment type(s) and the most severe maltreatment experienced were measured at baseline in youth ages 11 to 16 via the Conflict Tactics Scale-Parent-Child version. The Maltreatment Classification System, adapted for NSCAW, captured the caseworker's report of the main type of maltreatment and its severity. Suicide-related outcomes (SRO)were measured across five waves of data collection, up to 96 months post-baseline, using two questions from the Youth Self-Report and the Young Adult Self-Report. We conducted multivariable logistic regression analyses with repeated measures adjusted for the NSCAW's complex sampling design. We controlled for child and caregiver characteristics with age and child setting allowed to vary across time. Study limitations included, an incomplete specification of severity ratings for neglect and emotional maltreatment. This partially conflated maltreatment type and severity and therefore, may have biased results. In addition, the measure of SRO consisted of just two questions, also potentially impacting the validity of results.

RESULTS: 931 children had complete information on all study variables at baseline. Children with missing data did not vary from the study sample. In total, 235 children (26.3%) reported at least one suicide-related outcome over the course of the study. In unadjusted analyses, the child's report of most severe maltreatment type was not significantly related to suicide-related outcomes and was not retained in the adjusted analysis. However, the child's report of multiple types of maltreatment was associated with increased risk. Conversely, caseworker-reported type was significantly associated with increased risk, but endorsement of multiple types was not. In multivariable analyses with repeated measures (n=3,215 observations), child-reported multiple maltreatment types conferred a doubling of the risk of suicide-related outcomes (95% CI: 1.3-3.5). While all types of caseworker-reported maltreatment, except very severe physical assault and severe physical assault, were associated with up to 4.8 times the risk of suicide-related outcomes, this risk did not vary significantly by severity.

CONCLUSIONS: Study findings suggest that children who report multiple types of maltreatment are at twice the risk of suicide-related outcomes compared to children who report a single type of maltreatment. Additionally, while the main type of caseworker-reported maltreatment was also associated with increased risk in suicide-related outcomes, this risk does not vary significantly by maltreatment severity.

PUBLIC HEALTH IMPLICATIONS: Child self-report of maltreatment ought to be used in conjunction with caseworker information to assess suicide-related outcomes among children involved with protective services. Additionally, children should have the opportunity, within the child protective services context, to report on all of their maltreatment experiences, including sexual maltreatment. Finally, child welfare services policy should encourage, not discourage, caseworkers from reporting multiple types of maltreatment found in their investigations. More than 25% of the baseline sample had at least one incident of SRO in the years after their investigation. This equates to over 122,000 children in the population of children with alleged maltreatment investigated by CPS, living in states without agency first contact requirements. Given the increased risk that past SRO confers on both future suicide and other harmful behaviors, it is imperative to better identify, support, and protect this vulnerable population.

Concurrent Session A7

Are CHSCN (Children with Special Health Care Needs) Being Left Behind?

DO HEALTHY PEOPLE 2010 INDICATORS SHOW IMPROVEMENT FOR CHILDREN WITH SPECIAL HEALTH CARE NEEDS? TRENDS ACROSS TWO CHILDREN'S HEALTH SURVEYS: NS-CSHCN AND NSCH

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BACKGROUND: Approximately 20% of children and teenagers have special health care needs. With 2010 approaching it is important to examine how these children are progressing towards Healthy People 2010 goals set for children in general – both to evaluate past progress and to set appropriate expectations for Children with Special Health Care Needs (CSHCN) relative to Healthy People 2020 goals.

STUDY QUESTIONS: How are CSHCN and their families progressing toward selected HP2010 goals?

METHODS: Combining data from multiple rounds of the National Survey of Children with Special Health Care Needs (NS-CSHCN) and the National Survey of Children's Health (NSCH) – conducted through the State and Local Area Integrated Telephone Survey (SLAITS) mechanism of NCHS on behalf of MCHB – we examined the outcome trends in CSHCN for selected HP2010 goals: health insurance coverage, access to doctors and quality of doctor-patient relationships, dental care, physical activity, and prevalence of smokers in CSHCN households.

RESULTS: CSHCN are not only exceeding the HP2010 goals of 56% on dental visits and 77% on having a personal doctor, but trends show continued improvement on these indicators. CSHCN also meet HP2010 goals for doctor-patient relationships – that 64% of patients have doctors who spend enough time with them and 52% of patients have doctors who listen carefully. However, data show progress on these indicators has plateaued for CSHCN. CSHCN are not reaching the HP2010 goal of 85% of students grades 9-12 exercising regularly, but an emerging trend indicates progress has been made. Smoking by adults in households with CSHCN is declining, but remains short of the 12% HP2010 goal. Finally, less than 100% of CSHCN have health insurance – falling short of the HP2010 goal – and no progress is currently indicated.

At submission, the 2007 NSCH Public Use File has not been released. Consequently, selected rates were withheld that will be reported in the final presentation.

CONCLUSIONS: CSHCN and their households perform well on some HP2010 goals, but improvement is needed on indicators of physical activity, prevalence of adult smokers in the household, and access to health insurance.

PUBLIC HEALTH IMPLICATIONS: Understanding progress among CSHCN toward HP2010 goals informs appropriate HP2020 goals and subsequent allocation of resources for this population.

Concurrent Session A7

Are CHSCN (Children with Special Health Care Needs) Being Left Behind?

HEALTHCARE ACCESS AND QUALITY AMONG CHILDREN WITH MENTAL HEALTH IMPAIRMENT

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BACKGROUND: Mental health is critical to child well-being and a leading health indicator in Healthy People 2010. Many studies have documented unmet mental health needs among children and youth. Little is known about family experiences of healthcare access and quality in this population.

STUDY QUESTIONS: Do parent reports of healthcare access and quality differ for children and youth with and without mental health impairment?

METHODS: We conducted a cross-sectional analysis of 2006 Medical Expenditures Panel Survey (MEPS) data for children/youth ages 3 – 17 (n = 7,165). Child/youth mental health (MH) impairment was defined using the recommended cut-point (score > 16) on the parent version of the Columbia Impairment Scale (CIS). Healthcare access and quality were measured with the child version of the Consumer Assessment of Health Plans Survey (CAHPS) including parent-ratings in three domains: provider-patient interactions; getting needed care; and getting care quickly. Logistic regression was used to test associations between MH impairment and dichotomous CAHPS measures adjusted for child demographic characteristics, health insurance, socioeconomic status and maternal mental health status. Analysis was conducted with Stata, Version 10; all estimates accounted for the MEPS complex sampling design.

RESULTS: Compared to children without impairment, those with MH impairment were far less likely to have parent report of health providers spending enough time (OR= 0.41; 95% CI: 0.29, 0.57); showing respect (OR= 0.42; 95% CI: 0.26, 0.70); or listening carefully (0.48; 0.32, 0.75). Children with MH impairment were also less likely to have reports of getting necessary care (OR = 0.29; 95% CI: 0.19, 0.45) or seeing a specialist when needed (OR = 0.33; 95% CI; 0.22, 0.48). There were no significant differences between the groups in reports of getting care quickly or providers explaining things in ways parents could understand.

CONCLUSIONS: In a national sample, children/youth with MH impairment experienced problems with physician-patient interactions and getting needed care. Further work is needed in these domains to identify specific components of care that families experience as problematic and to develop interventions to improve service systems.

PUBLIC HEALTH IMPLICATIONS: Improving the context in which care is delivered for children with MH impairment is an essential step toward supporting the translation of promising research findings into clinical practice.

Concurrent Session B1

Vital Methods in Vital Statistics

DIFFERENT MEANINGS OF MISSING BIRTH CERTIFICATE DATA: METROPOLITAN RACIAL SEGREGATION MODIFIES THE ASSOCIATION BETWEEN MISSING RISK FACTOR FIELDS AND VERY PRETERM BIRTH IN BLACK WOMEN

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BACKGROUND: Missing data from birth certificate fields have been associated with adverse reproductive outcomes such as preterm birth and infant mortality. Geographic variation in missing data has not been previously evaluated. Risk for very preterm birth (<32 weeks, VPT) widely varies geographically for black but not white women. The causes of this variation are unclear and residential segregation has been proposed as a marker of local institutionalized racism and determinant of poor pregnancy outcomes in black women.

STUDY QUESTIONS: Does the association of missing fields on birth certificates with VPT birth vary in metropolitan statistical areas according to the degree of racial residential segregation?

METHODS: Singleton live births to black mothers living in 231 Metropolitan Statistical Areas (MSA) in 2000-2002 were analyzed. Residential black-white racial segregation was estimated for each MSA using a spatial generalization of the isolation index. Hierarchical Bayesian logistic models were fit with random intercepts for MSA's and random slopes for categories of maternal education, tobacco use during pregnancy, chronic hypertension, and diabetes. The posterior parameter estimate for segregation in the random slopes can be interpreted as modification by MSA segregation of the local association between risk factor levels (including a dummy variable for 'missing') and risk for very preterm birth.

RESULTS: Of 1.4 million birth certificates, missing data ranged from 0.8% to 6.4% depending on the variable. Increasing MSA segregation was associated with increased risk of very preterm birth for all risk categories, but the slope of increase was significantly greater for births marked by missing data. For example in cities with lower than average segregation, the risk of VPT among women with missing data on smoking was approximately equal to the risk among non-smokers. In contrast in MSA's with higher than average segregation, missing fields for tobacco use was associated with twice the risk of VPT as in non-smokers.

CONCLUSIONS: Missing data on birth certificates does not mean the same thing everywhere. Specifically in MSA's characterized by high segregation, missingness may mark particular risk.

PUBLIC HEALTH IMPLICATIONS: If confirmed this finding suggests opportunities for targeted improvement in vital statistics data quality and intervention in systematic and contextual forces which increase risk for black women.

Concurrent Session B1

Vital Methods in Vital Statistics

BIRTHWEIGHT FOR GESTATIONAL AGE DISTRIBUTIONS DIFFER ACCORDING TO MEASURES USED TO ASSIGN GESTATIONAL AGE

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BACKGROUND: Size for gestational age at birth reflects energy exposure and transfer and placental function during pregnancy. Being born small or large for gestational age has been associated with neonatal and infant morbidity and adverse developmental outcomes during childhood and beyond. Population-based standards for infant size for gestational age depend on accurate assessments of birthweight and gestational age; the accuracy of the latter measure has been questioned.

STUDY QUESTIONS: How do different methods of assigning gestational age in vital records data affect the distributions of birthweight for gestational age?

METHODS: The 2005 U.S. natality files were used to create 5 measures of gestational age for singleton births consisting of measures found on the 1989 (last menstrual period [LMP] and clinical estimate) and 2003 (LMP and obstetric estimate) revisions of the U.S. standard birth certificate: combined clinical/obstetric estimate and LMP- based estimate agree within 7 days (gold standard); clinical estimate only; obstetric estimate only; LMP-based estimate only; and combined clinical/obstetric estimate. Birthweight distributions across each gestational week were compared among these measures. Gestational age measures were not validated against medical records.

RESULTS: The birthweight for gestational age distributions differed according to the measurement of gestational age. The median, 10th, and 90th percentile distributions were virtually identical for the gold standard, clinical/obstetric estimate, clinical estimate only and obstetric estimate only. Birthweights for the LMP estimate were higher at almost every gestational age, particularly among preterm births, although this was minimal for the 10th percentile distribution. For example, at 32 weeks gestation median birthweight for the LMP estimate was 2155 grams while birthweights for the 4 other measures ranged from 1843-1871 grams. The same comparisons at the 10th and 90th percentiles were 1474 vs. 1370-1418 grams and 3430 vs. 2353-2495 grams.

CONCLUSIONS: Current U.S. population-based infant size for gestational age distributions differ according to the measure used for reporting gestational age. Obstetric estimate and clinical estimate produced distributions that were similar to the gold standard.

PUBLIC HEALTH IMPLICATIONS: These findings suggest that gestational age-specific birthweight distributions in the United States based on LMP estimates of gestational age may need to be revised.

Concurrent Session B1

Vital Methods in Vital Statistics

IMPACT OF PREMATURITY AND NEONATAL STRESS MEASURED BY APGAR SCORE ON ANALYTE CONCENTRATIONS USED FOR NEWBORN SCREENING

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BACKGROUND: Past literature indicates that analytes used for newborn screening (NBS) for congenital hypothyroidism (CH), congenital adrenal hyperplasia (CAH), and cystic fibrosis (CF) vary by gestational age and/or neonatal stress measured by Apgar score; however, studies included small sample sizes and/or were not adjusted for potential confounders, and variation in analyte concentrations used to predict phenylketonuria (PKU) have not been similarly assessed.

STUDY QUESTIONS: Do thyroid stimulating hormone, 17-Hydroxyprogesterone, immunoreactive trypsinogen, and phenylalanine concentrations vary by Apgar score and/or gestational age after adjustment for potential confounders?

METHODS: NBS and birth certificate data (Apgar score) collected in 2008 were used for this study. Birth certificate and NBS records were matched using Link Plus software. Confirmed cases were excluded from this study to avoid impact of disease processes on analyte concentrations. We constructed crude and adjusted generalized linear models of the association between analyte concentrations and gestational age/Apgar score measured at five minutes of life. Adjusted analyses included gestational age, birth weight, race, sex and age at specimen collection.

RESULTS: Analyte concentrations varied significantly statistically by both Apgar score and gestational age in crude and adjusted models ($p<0.001$). Associations between gestational age and analyte concentration were observed independent of Apgar score. The magnitude of association was not appreciably attenuated by adjustment for potential confounders other than for 17-Hydroxyprogesterone. The magnitude of association between Apgar score/gestational age and analyte concentration was greatest for 17-Hydroxyprogesterone and phenylalanine.

CONCLUSIONS: Prematurity and neonatal stress, measured by Apgar score, impact analyte concentrations used in NBS after adjusting for potential confounders.

PUBLIC HEALTH IMPLICATIONS: NBS programs should consider adjusting cut-offs for gestational age and/or Apgar score. NBS guidelines for premature and/or sick neonates, including those currently under revision by the Clinical and Laboratory Standards Institute, should expand to note the impact of gestational age on immunoreactive trypsinogen concentrations independent of Apgar score. Guidelines should also include discussion of the impact of prematurity and neonatal stress on phenylalanine concentrations. Further research on variation in analyte concentrations used to predict other amino acid disorders, organic acid disorders, and fatty acid oxidation disorders by gestational age and neonatal stress is recommended.

Concurrent Session B1

Vital Methods in Vital Statistics

FLORIDA INVESTIGATION OF LATE PRETERM AND CESAREAN DELIVERY: ARE BIRTH CERTIFICATES ACCURATE?

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BACKGROUND: Florida's late preterm birth rate, births of 34 to 36 weeks gestation, increased from 6.9% in 1996 to 10.1% in 2007. More than a third of this increase is associated with Florida's 70% increase in cesarean delivery rate among all live births.

STUDY QUESTIONS: What is the accuracy of singleton late-preterm primary cesarean live births (LPCSLB) on Florida birth certificates?

METHODS: A sample of 1,249 delivery records from 16 birth hospitals was abstracted based on reporting of LPCSLB on 2006 and 2007 Florida live birth certificates. Study hospitals had to have delivered 60 or more LPCSLB and more than 2,000 total live births. Eight hospitals with highest and lowest LPCSLB rates were selected for study inclusion to determine if reporting differences contributed to higher rates. Chi square was used to test differences in proportions.

RESULTS: Differences in the accuracy of these birth certificate data elements were identified. Of sampled records, 16% of LPCSLB were incorrectly classified on birth certificates as singleton, primary cesarean deliveries: misclassified births were repeat Cesarean (N=175), vaginal delivery (N=11), or multiple (N=10) live births. High rate hospitals misclassified 17.6% of LPCSLB as repeat cesarean deliveries, while low rate hospitals misclassified only 10.0% as repeat cesareans ($P<0.001$). Among the 1,049 correctly classified live births above, 77.2% were late-preterm births according to the delivery attendant on delivery records. Low rate hospitals had slightly higher reporting errors for births <34 weeks gestation (6.8% versus 4.5%, $P=0.14$), while high rate hospitals had higher reporting errors for births >36 weeks gestation (19.5% versus 14.7%, $P=0.056$). Overall accuracy of late-preterm was similar for both groups.

CONCLUSIONS: Florida live birth certificates have some reporting accuracy issues with LPCSLB. Accuracy varied between high and low rate hospitals with high rate hospitals being more likely to incorrectly classify repeat Cesarean. Further accuracy studies are needed including the reporting of risk factors for LPCSLB on birth certificates as well as reporting on hospital discharge records.

PUBLIC HEALTH IMPLICATIONS: In order to understand and monitor the current late preterm and cesarean trends and inform policy, access to accurate reliable population-based data sources is essential.

Concurrent Session B2

Workshop: The 2007 National Survey of Children Health: Tips on Using the Data and Key Findings Related to Children Health and Health Care

Stephen J. Blumberg, PhD, Michael D. Kogan, PhD
Centers for Disease Control and Prevention, National Center for Health Statistics, HRSA / Maternal and Child Health Bureau

DESCRIPTION OF WORKSHOP: The 2007 National Survey of Children's Health was funded and directed by the Maternal and Child Health Bureau, and conducted by the National Center for Health Statistics. The data will become available to the public in late May, 2009. This survey permits national- and state-specific estimates on the health, health care needs, and well-being of children who are under 18 years of age. Data about the child's family and neighborhood are also available. Estimates from the National Survey of Children's Health are ideal for needs assessments, research, evaluation, and policy development.

During this workshop, survey statisticians from CDC's National Center for Health Statistics will focus on how to download and analyze the data from the survey. Instructions will be provided for using sampling weights, interpreting results, and avoiding common pitfalls.

The session will then provide data users with an opportunity to see first hand how the data files were used to answer some key research questions.

JUSTIFICATION FOR WORKSHOP: At several of the past Maternal and Child Health Epidemiology Conferences, the conference program has included a workshop/training session on data from surveys conducted as part of the State and Local Area Integrated Telephone Survey. These sessions have been particularly well-attended. A workshop on the National Survey of Children's Health has not been held since 2006, and with the upcoming release of new data from this survey, this is a particularly good time to bring back a workshop on the NSCH. This year's proposed workshop is designed to appeal to epidemiologists and other scientists who are interested in going beyond the basic crosstabs that are available from the Data Resource Center on Child and Adolescent Health.

The introduction to this workshop will include a discussion of pertinent analytical variables and weighting variables. Demonstrations will highlight best practices in SAS for obtaining national and state-level estimates, and they will include the use of weighting variables to properly estimate variance using SUDAAN.

The second half of the workshop will provide information on some of the first findings to come out from the survey. This part of the workshop will highlight some different areas of the survey, and how these findings relate to policy-relevant questions.

The survey designers will be available to answer questions.

BIOGRAPHICAL SKETCH OF PRIMARY PRESENTERS: Dr. Stephen Blumberg is a senior scientist at the National Center for Health Statistics, Centers for Disease Control and Prevention. He is the lead statistician for the State and Local Area Integrated Telephone Survey. This random-digit-dial survey mechanism regularly fields some of the world's largest telephone surveys on children's health, health care, and well-being, including the National Survey of Children with Special Health Care Needs and the National Survey of Children's Health. His honors include the 2008 Young Professional Achievement award from the Coalition for Excellence in Maternal and Child Health Epidemiology and the 2009 Warren J. Mitofsky Innovators Award from the American Association for Public Opinion Research.

Dr. Michael D. Kogan is Director of the Office of Data and Program Management for the Maternal and Child Health Bureau. In this position he is responsible for directing activities of the office with an emphasis on 1) maternal and child health research; 2) building the data capacity of federal, state and local areas in maternal and child health; and 3) building the maternal and child health epidemiology capacity in the United States. He also serves as the co-Project Director for the National Survey of Children's Health and the National Survey of Children with Special Health Care Needs. He serves on the editorial board of the Maternal and Child Health Journal and has served in that capacity for the American Journal of Public Health. He has served as a special editor for Pediatrics and the Maternal and Child Health Journal. He has also held adjunct academic appointments at the University of Alabama at Birmingham and Harvard University, and is a regular lecturer at Georgetown University. He has published over 100 articles and book chapters on numerous topics in pediatric and perinatal epidemiology. He received the 2003 Advancing Knowledge award from the Coalition for Excellence in Maternal and Child Health Epidemiology. He received his doctorate in epidemiology from Yale University.

Concurrent Session B3

What's Love Got to Do With It? Intimate Partner Violence (IPV)

INTIMATE PARTNER VIOLENCE AMONG RECENTLY PREGNANT WOMEN IN HAWAII – DATA FROM THE HAWAII PREGNANCY RISK ASSESSMENT MONITORING SYSTEM, 2004-2007

***Emily Roberson, MPH*, Rebecca Shor, MPH, Loretta Fuddy, ACSW, MPH, Donald Hayes, MD, MPH**
Hawaii Department of Health

BACKGROUND: Recent literature suggests a link between maternal race and intimate partner violence (IPV) even after accounting for other socio-demographic characteristics. IPV is related to adverse outcomes such as depression, preterm labor, and low birth weight infants. Hawaii is a diverse society with many race/ethnic groups that are not typically reported in national statistics. This analysis is part of a larger project to describe IPV in Hawaii using multiple data sources.

STUDY QUESTIONS: Are there race/ethnic differences in IPV among women in Hawaii? Are these differences explained by socio-demographic characteristics?

METHODS: Data from the 2004-2007 Hawaii Pregnancy Risk Assessment Monitoring System (PRAMS), a population based-surveillance system on maternal behaviors and experiences before, during, and after the birth of an infant, was analyzed among 7,233 women. Estimates of IPV were assessed by several maternal characteristics. IPV was defined as physical violence from a partner or ex-partner in the year before a woman became pregnant through the birth of her infant. Multivariable logistic regression analysis examined IPV and maternal race/ethnicity while accounting for socio-demographic characteristics.

RESULTS: Overall, 6.54% (95% CI: 6.15-6.95) of recently-pregnant women in Hawaii reported IPV. American Indian, Native Hawaiian/Part Hawaiian, and Samoan women reported the highest estimates with 15.76% (95% CI: 9.36-25.31), 9.18% (95% CI: 7.86-10.70), and 8.65% (95% CI: 5.25-13.91) respectively. After controlling for maternal education, household income, and marital status, the race/ethnic differences in IPV persisted only in American Indian (aOR: 2.67; 95%CI: 1.39-5.10) women. The main predictors of IPV were: less than a high school education (aOR: 2.25; 95%CI: 1.43-3.55); household income of less than $10,000 (aOR: 3.48; 95%CI: 2.32-5.22); and being unmarried (aOR: 1.69; 95%CI: 1.30-2.21).

CONCLUSIONS: A relatively large proportion of women in Hawaii with a recent live birth report experiencing IPV, which likely underestimates the true burden. Initial race/ethnic differences were accounted for by socio-demographic characteristics in all groups except for American Indian women.

PUBLIC HEALTH IMPLICATIONS: Although research suggests that maternal race is a strong predictor of IPV, Hawaii PRAMS data suggests more focus should be placed on modifiable factors such as educational attainment to develop effective prevention and intervention programs.

Concurrent Session B3

What's Love Got to Do With It? Intimate Partner Violence (IPV)

PREVALENCE OF INTIMATE PARTNER VIOLENCE IN AN ABORTION CLINIC POPULATION

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BACKGROUND: Violence against women, particularly intimate partner violence (IPV), is wide-spread and has far-reaching consequences for women, children, families, and the community. Survivors of IPV utilize healthcare services more often than their non-abused counterparts and suffer from a wide range of mental and physical health problems, including depression, post-traumatic stress disorder, irritable bowel syndrome, chronic pelvic and abdominal pain, sexual dysfunction, sexually transmitted diseases, substance abuse, and suicide attempts. Women seeking abortion services are of particular interest as a target population for IPV intervention because unintended pregnancy is associated with IPV in live birth populations. A small but growing body of research suggests that IPV prevalence rates are higher among pregnant women who seek elective abortion services than those who continue their pregnancy.

STUDY QUESTIONS: What is the prevalence of IPV among women seeking elective abortion services at a large reproductive health clinic?
What are the demographic risk markers of violence?
What is the relationship of the perpetrator to the victim?
What is the frequency and severity of physical violence?

METHODS: In a large sample of women seeking elective pregnancy termination, we conducted a cross-sectional, clinic-based study to estimate the prevalence of intimate partner violence (IPV) and risk markers. Anonymous, computer-based questionnaires were completed by 990 subjects. We assessed physical and sexual IPV using a modified Abuse Assessment Screen, and battering by the Women's Experience of Battering instrument. Socio-demographic, lifestyle, and partner characteristics were also obtained.

RESULTS: 13.8% were physically or sexually assaulted by anyone during the prior 12 months. Physical IPV was reported by 9.9%, and sexual IPV by 2.3%; 8.4% were emotionally battered in their current relationship. 8.4% were physically or sexually abused by a former partner. Women without a current partner were at highest risk for any abuse (19.7%) and at highest risk for abuse perpetrated by a former partner (14.6%). Women whose current partners were binge drinkers were 5.5-times more likely to experience physical and/or sexual IPV, and 2.7-times more likely to be battered. Overall, we found that severity increases with frequency, rather than a pattern of infrequent but highly severe abusive events.

CONCLUSIONS: Women seeking abortion are at high risk for IPV and violence by others, with 1 in 7 disclosing a physical or sexual assault in the past year. These data are supportive of the hypothesis that women in violent relationships are more likely to seek termination of their pregnancies.

PUBLIC HEALTH IMPLICATIONS: Findings from this study strongly support clinic-based screening for intimate partner abuse and interventions that emphasize safety-planning and provide broad-based resources or community referrals for alcohol, drug abuse, mental health, and social work counseling.

Concurrent Session B3

What's Love Got to Do With It? Intimate Partner Violence (IPV)

POLICY IMPLICATIONS OF TRAUMATIC PREGNANCY - ASSOCIATED DEATH

William Winter, MPH
MCHERDC

BACKGROUND: Currently no regular review of traumatic maternal mortality is conducted d in Florida. Previous studies have shown that pregnancy increases the risk of death due to homicide and motor vehicle accidents. Florida's Pregnancy Associated Pregnancy Review (PAMR) team requested that our group at the UF Maternal and Child Health Education Research and Data Center (MCHERDC) to examine the characteristics of the traumatic maternal mortality group and compare them to the pregnancy-associated death group.

STUDY QUESTION: What are the main causes of death among women who suffered a traumatic death during pregnancy or one year post delivery?

METHODS: MCHERDC identified 390 traumatic maternal deaths which occurred in Florida between 1999 and 2005. Death certificate information was obtained for all 390 decedents. Medical Examiner reports were obtained for 351 of the decedents. Medical Examiner reports were abstracted into a database. Florida Highway Patrol reports for 165 car accident deaths were collected and abstracted into a database.

RESULTS: The most common causes and manners of death in the PAMR Traumatic Death group were Motor Vehicle Accident (n = 190), Homicide (n = 79), Accidental Poisoning (n = 42), and Suicide (n = 42). Compared with non-pregnant women in Florida, the women in the PAMR Traumatic Death group had higher proportions of death due to Motor Vehicle Accident and Homicide. The racial/ethnic composition of the PAMR Traumatic Death group s was: White non-Hispanic (n = 210), Black non-Hispanic (n = 112), and Hispanic (n = 60). Hispanic women had the highest proportion of death due to Motor Vehicle Accident; Black women had the highest proportion of death due to Homicide, and White women showed higher proportions of Accidental Poisoning and Suicide than their counterparts. Of the drugs counted by the Florida Medical Examiners Commission, the five most common in our population were Prescription Opioids (n = 72), followed by Ethyl Alcohol (n = 63), Benzodiazepines (n = 59), Cocaine (n = 51), and Cannabinoids (n = 25). Other important drug findings included Nicotine (n = 37), Acetaminophen (n = 37), Diphenhydramine (n = 24), and SSRIs (n = 20).

CONCLUSIONS: During the study period (1999-2005), more pregnant and 1 year post partum women died of traumatic causes than of medical causes. These deaths may be preventable through education and screening.

PUBLIC HEALTH IMPLICATIONS: Obstetricians, family physicians, and community health workers need to provide all pregnant women with: 1) anticipatory guidance against motor vehicle accidents and homicide; 2) mental health counseling; 3) screening for drug abuse and domestic violence.

Concurrent Session B3

What's Love Got to Do With It? Intimate Partner Violence (IPV)

THE EPIDEMIOLOGY OF ACUTE POISONINGS IN WOMEN OF REPRODUCTIVE AGE AND DURING PREGNANCY, CALIFORNIA, 2000-2004

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BACKGROUND: Poisoning is the leading cause of injury hospitalization in women of reproductive age and the third leading cause during pregnancy. Despite the relative proportion of injuries that are attributed to poisonings, little is known not only about the characteristics of women of reproductive age who are poisoned, but those who are poisoned during pregnancy.

STUDY QUESTIONS: The aims of this study were to describe and compare the epidemiology of acute poisoning hospital discharges in women of reproductive age (aged between 15-44) and during pregnancy to include the incidence rate, risk factors, substances involved, rates of intentional versus unintentional poisonings, and in pregnant women, distribution over trimesters.

METHODS: Through a cohort study design, the California Patient Discharge Dataset and Linked Vital Statistics-Patient Discharge Database were used to identify cases of acute poisoning hospital discharges from 2000 to 2004 among women of reproductive age and among pregnant women (ages 15 to 44). Odds ratios (OR) were calculated to identify risk factors for poisoning using logistic regression. Generalized estimating equations were utilized to determine if pregnancy was significantly associated with the incidence of poisoning.

RESULTS: Of 4,436,019 hospital discharges in women of reproductive age, 1% were for an acute poisoning (115.3/100,000 person-years). There were 2,285,540 deliveries and 833 hospital discharges for an acute poisoning during pregnancy (48.6/100,000 person-years). Pregnancy was associated with a lower risk of acute poisoning (OR=0.89, p=0.0007). Poisonings were greatest among young black women regardless of pregnancy status and among those with substance abuse or mental health problems. Analgesic and psychiatric medications were most commonly implicated. The majority of poisonings among women of reproductive age (69.6%) and among pregnant women (61.6%) were self-inflicted.

CONCLUSIONS: Pregnancy was associated with a lower risk of acute poisoning.

PUBLIC HEALTH IMPLICATIONS: Prevention efforts are most effective when targeted at the highest risk women; in the case of acute poisoning hospitalizations, practitioners should focus their prevention efforts on young black women, regardless of pregnancy status. Substance abuse and mental health screening, and appropriate referral opportunities, by a treating health care professional may have the potential to prevent acute poisonings in high-risk women.

Concurrent Session B4

Now I Lay Me Down to Sleep

FACTORS ASSOCIATED WITH USE OF THE NON-SUPINE INFANT SLEEP POSITION – RESULTS FROM THE CANADIAN MATERNITY EXPERIENCES SURVEY

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BACKGROUND: Although public health education campaigns have been promoting supine infant sleep positioning since the 1990s for SIDS prevention, many infants continue to be placed in other positions for sleep. Little is known about the factors that are associated with not adhering to supine infant sleep position recommendations.

STUDY QUESTIONS: The objective of this study was to identify factors associated with using a non-supine infant sleep position, using a large, population-based survey of Canadian mothers.

METHODS: Recent mothers with a singleton live birth who participated in the 2006-2007 Canadian Maternity Experiences Survey (MES) were asked to identify their infant's usual sleep position during the first four months after birth. Relationships between maternal demographics, lifestyle, reproductive history, pregnancy, health care, infant and postpartum factors, and infant sleep position were examined. Multivariate logistic regression modelling was used to determine adjusted odds ratios (OR) and 95% confidence intervals (CI).

RESULTS: The overall proportion of women who reported using a non-supine infant sleep position was 22.6%. In the final adjusted model, non-attendance to prenatal classes (OR: 1.46, 95% CI: 1.24-1.72), short length of hospital stay after birth (OR: 1.23, 95% CI: 1.04-1.45), and no contact from a health care provider at home after birth (OR: 1.54, 95% CI: 1.19-1.98) were significantly associated with increased use of a non-supine infant sleep position. Other factors significantly associated with non-supine infant sleep position included single marital status, less than high school education, rural residence, foreign-born mother, one or more stressful life events, male infant sex, and 5 or more people in the household.

CONCLUSIONS: A number of demographic, health care and postpartum factors appear to be associated with not following recommendations for supine infant sleep position. Knowledge of potentially modifiable factors (such as non-attendance to prenatal classes, short length of hospital stay and no contact from a health care provider at home after birth) and non-modifiable factors (such as maternal demographic factors) may be useful for developing health policy and intervention strategies to promote adherence to infant sleep position recommendations.

PUBLIC HEALTH IMPLICATIONS: This study has identified factors that may be useful for developing health policy and intervention strategies to promote adherence to infant sleep position recommendations.

Concurrent Session B4

Now I Lay Me Down to Sleep

SLEEPING PRACTICES IN LOS ANGELES MOMMY & BABY'S PROJECT BY RACE & ETHNICITY

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BACKGROUND: Despite steady decreases in SIDS mortality rates in recent years, rates continue to differ significantly by race and ethnicity, domestically as a whole and in Los Angeles County.

STUDY QUESTIONS: We examined the prevalence of sleeping practices in relation to race and ethnicity in Los Angeles County in order to discover possible gaps in prevention efforts to improve SIDS related mortality rates.

METHODS: The LAMB Project surveyed a representative sample of postpartum women regarding sleep position. Questions related to sleep position included: sleep position practices (including side, back and stomach positions), bed sharing, reasons for cohabitation, as well as demographic and socioeconomic information. Chi-squared tests and Fisher's Exact tests were used to discover significant differences between the mothers' race and sleep position practices.

RESULTS: The Project included a total of 5329 respondents. Among the respondents, sleeping position practices varied significantly across racial groups ($p<0.0001$). African Americans reported placing their children on their backs significantly less often then both Latinas and Whites (both $p<0.0001$). Also, African Americans reported placing their children on their stomachs significantly more often then both Latinas ($p=0.001$) and Whites ($p<0.0001$). Lastly, African Americans, more then any other group, reported primarily placing their children on their stomachs to sleep ($p<0.0001$) at a rate of approximately 20%, well above any other racial category.

CONCLUSIONS: Our findings demonstrate striking differences in sleep position practices within racial groups in Los Angeles County, in new ways that had previously not been evaluated.

PUBLIC HEALTH IMPLICATIONS: This demonstrates the need for more effective and targeted campaigns aimed at the sleeping practices of African Americans in Los Angeles County, and more specifically more nuanced messaging that takes these findings into account.

Concurrent Session B4

Now I Lay Me Down to Sleep

BEDSHARING PRACTICES DIFFER BY BREASTFEEDING STATUS AND RACE

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BACKGROUND: Infants sleeping in the same bed with adults, bed-sharing, is controversial. Safe sleep initiatives warn against bed-sharing, as it has been linked with Sudden Infant Death Syndrome (SIDS) and overlay death; advocates defend the practice as facilitative of breastfeeding.

STUDY QUESTIONS: Is there an association between current breastfeeding and bed-sharing? Does the association differ by race?

METHODS: Louisiana linked PRAMS-birth certificate data from 2000-2004 were used for analyses (n=9,225, response rate >70%). Bed-sharing was re-categorized as "always", "almost always", and "sometimes to never" based on bed-sharing distribution with respect to independent variables. Statistical associations were evaluated using prevalence with 95% confidence intervals, chi-square tests, and multinomial logistic regression using SAS-callable SUDAAN to account for complex survey design. Limitations include inability to establish temporality and use of self-reported data.

RESULTS: Weighted prevalence of always bed-sharing (ABS) exceeded 25%, with an additional 10% almost always bed-sharing (AABS). A wide racial disparity was evidenced by 47.6% (95%CI:47.3%,47.9%) of black women reporting ABS compared to 12.4% (95%CI:12.2%,12.5%) of white women. Black women were also more likely to report AABS (black=12.0%,95%CI:11.8%,12.2% versus white=9.2%,95%CI:9.0%,9.3%). Compared to white women, fewer black women reported breastfeeding at survey completion (white=24%,95%CI:23.8%,24.2% versus black=7.8%,95%CI:7.6%,7.9%). Relationships between breastfeeding and ABS and AABS were modified by maternal race and remained significant after controlling for education, marital status, stress, parity, and infant age. Among black women, breastfeeding status was not significantly associated with ABS but was modestly associated with AABS (aOR=1.7,95%CI:1.1,1.7). In contrast, breastfeeding white women were more than three times as likely to report ABS (aOR=3.1,95%CI:2.4,3.9) and over twice as likely to report AABS (aOR=2.2,95%CI:1.7,2.9).

CONCLUSIONS: Black women were more likely than white women to report bed-sharing (ABS and AABS) but less likely to breastfeed. Breastfeeding is associated with increased bed-sharing among white women but not among black women.

PUBLIC HEALTH IMPLICATIONS: Breastfeeding status is an important consideration to bed-sharing practices but may differ by race. Because black women are an exceptionally high-risk group for bed-sharing, safe sleep messages should especially target them. More information is needed to better understand why black women, especially those not breastfeeding, report such frequent bed-sharing.

Concurrent Session B5

How'd You Do That? Methodological Approaches

PRACTICAL CONSIDERATIONS FOR MULTIVARIABLE MODELING IN THE CONTEXT OF GENERATING AVERAGE POPULATION ATTRIBUTABLE FRACTIONS

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BACKGROUND: Over the past decade, researchers have developed a measure called the Average Population Attributable Fraction (avgPAF) which overcomes many of the methodological concerns that have kept epidemiologists from using the standard attributable risk measures. By computationally handling overlapping prevalences of risk factors in the population, avgPAFs for multiple risk factors are truly multifactorial in that they are mutually exclusive and mutually adjusted, permitting direct comparisons of the impact of many risk factors. This newer measure remains underutilized, however, which is unfortunate since it provides information different from that provided by relative risks or odds ratios—information that is arguably more suitable for public health program planning, priority-setting, and policy development.

STUDY QUESTIONS: Are there differences in the model building process when the goal is to generate average PAFs?

METHODS: The avgPAF is computed using a combination of relative risks and prevalences of risk factors. When regression modeling is carried out to obtain the multiple relative risks that singly and in combination are required to compute avgPAFs, issues such as classifying factors as modifiable or unmodifiable, variable selection and level of measurement, definition of reference groups, confounding and effect modification, parsimony, and statistical significance, all need to be re-considered. For example, when modeling to produce avgPAFs, variables will be explicitly divided into those deemed modifiable and those that are not, since avgPAFs will only be computed for modifiable factors. Effect modification within and across modifiable and unmodifiable factors will be handled differently; reference levels for modifiable factors will be defined to mirror achievable levels of risk; and a final model may include statistically insignificant risk factors if resulting avgPAFs are meaningfully large.

RESULTS: Concrete examples of model building issues will be provided.

CONCLUSIONS: A final model built to produce avgPAFs may differ from a final model built strictly to estimate measures of association. In order to promote the wider use of the avgPAF, it is important that epidemiologists address the special considerations that may affect the way standard model building is carried out.

PUBLIC HEALTH IMPLICATIONS: The Average Population Attributable Fraction is a new tool that can be used to inform public health prioritization and planning.

Concurrent Session B5

How'd You Do That? Methodological Approaches

AN APPROACH TO AUTOMATED VARIABLE SELECTION FOR LOGISTIC REGRESSION USING COMPLEX SAMPLE SURVEY DATA

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BACKGROUND: Automated variable selection methods are often used for choosing a subset from a large pool of explanatory variables in best model determination. Although for the past several years there has been variable selection software available for standard logistic regression, this capability is not available for the survey analyst due to the fact that standard logistic regression methods are inappropriate for the analysis of data arising from a complex sample design.

STUDY QUESTIONS: Can an automated variable selection macro be created to build a multivariate model that also adjusts for complex sample design?

METHODS: Using the SAS Callable SUDAAN RLOGISTIC procedure (which fits logistic regression models to sample survey data) the macro modifies the variable algorithm described by Hosmer and Lemeshow (2000). It allows the user to specify all decision criteria, whether a variable is a known confounder, or a potential predictor. Known confounders are included in every multivariate model and not evaluated for confounding. The algorithm begins with a univariate logistic regression analysis of each potential predictor variable. A variable with a significant test (at alpha1-level) is selected for inclusion in the first candidate multivariate model. During the iterative selection process, potential predictor variables are removed from the multivariate model if they are non-significant (at alpha2-level) and not a confounder. Additional confounders are identified by the change in odds ratio estimates as variables are added or removed from the model. Subsequently, any potential predictors not selected for the first candidate model are added into the multivariate model to identify variables that,

RESULTS: Methods continued: by themselves, are not significant but become significant (at alpha3-level) in the presence of others. At the end, the macro provides the best main effects model. Currently, it does not examine effect modification.

The macro provides a summary at each step of the algorithm, and the best main effects logistic regression model is presented at the end of the output.
Conclusions: This automated variable selection for complex survey data can be used to assist in model selection, but not as the only determinant of the final model.

PUBLIC HEALTH IMPLICATIONS: Efficient epidemiological approaches serve as useful tools to help public health professionals simplify multiple variable selection and identifying confounders in modelling.

Concurrent Session B5

How'd You Do That? Methodological Approaches

LINKING PRAMS WITH CHILD MALTREATMENT REPORTS TO IDENTIFY POPULATIONS AT RISK

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BACKGROUND: Child maltreatment is an under-recognized cause of morbidity resulting in many sequelae, making prevention, early identification and intervention a necessity. Some researchers have used vital statistics birth information to identify subpopulations at risk.

STUDY QUESTIONS: Does supplementing vital statistics data with information from population-based surveys (PRAMS) help to specify populations at risk of maltreatment?

METHODS: This was an observational cohort study of infants born in Alaska during 1997 through 1999. We linked weighted data from the Alaska Pregnancy Risk Assessment Monitoring System (PRAMS) with Bureau of Vital Statistics (BVS) and Office of Children's Services (OCS) datasets. We defined maltreatment as any report to OCS occurring after the mother completed the PRAMS survey and less than 49 months after birth. We first identified high risk groups based only on BVS information using logistic regression modeling and examined the prevalence of maltreatment among groups. Next, we identified factors associated with maltreatment from PRAMS data and evaluated the prevalence of maltreatment among children of women sharing risk factors derived from both sources.

RESULTS: We identified prenatal smoking (aOR= 2.3), having two or more living children (aOR=1.8), maternal age < 19 years (aOR=2.3), maternal age = 19 and education < 12 years (aOR=2.6), and unmarried status (aOR=2.8) as birth certificate risk factors for later child maltreatment. Among children with a report to OCS, 87.8% had at least one of these maternal risk factors. Among children whose mothers had at least one risk factor, 17.2% had a report to OCS. The prevalence of maltreatment among the high risk subpopulation increased when we included PRAMS characteristics, such as receiving public aid (31.0%) or report of maternal physical abuse (35.7%).

CONCLUSIONS: Vital statistics data lack specificity as a tool for identifying children at risk of maltreatment. Among women with known demographic risk factors, PRAMS questions can help to further identify subpopulations at risk of maltreatment.

PUBLIC HEALTH IMPLICATIONS: Understanding factors that further increase risk among known high risk populations can assist in providing targeted interventions to prevent child maltreatment and reduce morbidity.

Concurrent Session B5

How'd You Do That? Methodological Approaches

USING LINKED HOSPITALIZATION DATA TO EXAMINE FACTORS ASSOCIATED WITH SURVEY NON-RESPONSE — MASSACHUSETTS PREGNANCY RISK ASSESSMENT MONITORING SYSTEM, 2005

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BACKGROUND: The Pregnancy Risk Assessment Monitoring System (PRAMS) provides state specific estimates of maternal preconception, pregnancy, and post-partum experiences. Previous studies using information from birth certificates demonstrated that educated, married, and white women have the highest PRAMS response rates. However, little is known about whether maternal and newborn hospital utilization varies by PRAMS participation.

STUDY QUESTIONS: What additional respondent information can be obtained by linking hospital utilization data with PRAMS?

METHODS: We linked data from the Massachusetts PRAMS pilot project, a simple random sample of women with live births during January–March 2005 (N=480), with hospital utilization data. The response rate was 73%. Chi square analyses compared selected maternal characteristics for respondents and non-respondents. Differences in mean length of stay for maternal delivery hospitalization (LOS-MDH) and for infant birth hospitalization (LOS-IBH) were estimated, controlling for race/ethnicity, marital status, and education. Numbers of inpatient, emergency department (ED), and observational stay (OS) visits during pregnancy and through one year postpartum were also compared. Analyses were limited by small sample size.

RESULTS: Respondents were more likely than non-respondents to be white non-Hispanic (76.7% vs. 60.6%, $p=0.006$), married (79.0% vs. 57.6%, $p<0.001$), and have >HS education (76.1% vs. 47.7%, $p<0.001$). In unadjusted analyses, non-respondents were more likely than respondents to have had at least one ED (32.6% vs. 19.5%, $p=0.003$) or OS (22.0% vs. 10.1%, $p=0.001$) visit during pregnancy. No differences in mean LOS-MDH, LOS-IBH or postpartum inpatient, ED or OS visits were observed. After controlling for maternal race/ethnicity, marital status, and education, LOS-MDH, LOS-IBH, and having had an ED visit during pregnancy were not associated with non-response; however, having had an OS during pregnancy was associated with non-response ($p=0.020$).

CONCLUSIONS: We found no differences between respondents and non-respondents with respect to inpatient or emergency care. However, an OS during pregnancy was associated with non-response, suggesting certain medical conditions might be differentially related to participation. A larger population sample is needed to examine this further.

PUBLIC HEALTH IMPLICATIONS: Linkage of PRAMS with hospital utilization data can improve estimation of medical risk factors associated with non-response and can inform efforts to improve response rates.

Concurrent Session B6

Factors Affecting Breastfeeding: Positive or Negative

BREASTFEEDING AWARENESS AND ATTITUDES OF TEXANS, 2007

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BACKGROUND: Breastfeeding is widely acknowledged to have health benefits for mothers and infants; however many infants are still not breastfed. Little research has documented societal norms or attitudes toward breastfeeding by demographic characteristics.

STUDY QUESTIONS: In order to more effectively tailor policies/education regarding breastfeeding initiation and continuation, the objective of this study is to examine how breastfeeding attitudes and awareness differ by demographic characteristics.

METHODS: The data are from fifteen breastfeeding awareness questions asked on the (Texas) Behavioral Risk Factor Surveillance System (BRFSS) in 2007. These awareness questions cover five different topics: perceived benefits, lifestyle/appearance, imagery, public breastfeeding, and work.

RESULTS: Results indicate significantly different patterns of agreement by breastfeeding topic by demographic characteristic. For example, Hispanics were more likely (92.4%) to think breast milk is the best source of nutrition for infants than Whites (87.6%) and Blacks (80.5%). However, Hispanics were more likely (26.2%) to think a mother cannot breastfeed her baby and work outside the home than Whites (7.9%) and Blacks (18.5%). Non-married individuals expressed more negative attitudes toward breastfeeding than married people. For example, 15.2% of non-married people thought mothers should only breastfeed in their own homes compared to 9.2% of married people. College graduates were less likely (10.7%) to think breastfeeding will tie a mother down and interfere too much with her social life than those with less than a high school degree (29.0%) or graduated high school (20.6%). Older people had more negative attitudes toward breastfeeding imagery than younger people. For instance, 24.8% of people 65 and older thought it was appropriate to show a woman breastfeeding her baby on a billboard or poster, compared to 43.2% of people aged 30-44.

CONCLUSIONS: These findings indicate that the perceived benefits of breastfeeding and breastfeeding attitudes significantly differ by a person's race, gender, age, marital status, education level, and household income. Other results vary by breastfeeding awareness question and demographic characteristic.

PUBLIC HEALTH IMPLICATIONS: If breastfeeding rates are to increase, more attention should be paid to identify and address the negative attitudes toward breastfeeding within the social environment. Tailoring educational interventions around these demographic characteristic differences is fundamental to successfully promote and support breastfeeding in society.

Concurrent Session B6

Factors Affecting Breastfeeding: Positive or Negative

THE EFFECT OF MATERNAL OBESITY AND DEPRESSION ON BREASTFEEDING INITIATION

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BACKGROUND: Maternal obesity has been associated with lower initiation and duration of breastfeeding. However, the reasons for why this association exists have not been well studied. Psychological factors present during pregnancy may be involved in the pathway between maternal obesity and breastfeeding.

STUDY QUESTIONS: Are overweight/obese women more likely to have depressive symptoms during pregnancy and does this help explain why they are less likely to initiate breastfeeding?

METHODS: Data came from the Pregnancy, Infection, and Nutrition study, a prospective cohort study identifying etiologic factors for preterm delivery. Pregnant women were recruited from the University of North Carolina hospitals between January 2001 and June 2005. This analysis examines a subgroup that was followed through the first year postpartum (n=688). Weight and height were self-reported at screening (15-20 weeks' gestation). Depressive symptoms were measured at 24-29 weeks' gestation using the Center for Epidemiological Studies-Depression Scale; a score of 17 or higher indicated that a higher level of depressive symptoms were present. Women were asked whether they initiated breastfeeding at 3 months postpartum. Multivariate binomial regression was used to determine the effect of having a BMI greater than 26 kg/m2 on breastfeeding initiation. Possible mediation by depressive symptoms was examined using the Baron and Kenny method.

RESULTS: Among women 25 or older, those who were overweight or obese (BMI> 26 kg/m2) had 5.4 times the risk of not initiating breastfeeding compared to underweight or normal weight women (BMI = 26 kg/m2) (95% CI= 2.27, 12.73). Among women younger than 25, the risk ratio was 3.0 (1.38, 6.59). We adjusted for race, poverty level, education level, and marital status. Though overweight/obese women were more likely to have depressive symptoms during pregnancy, it was not found to mediate, moderate, or confound the effect of pregravid BMI on breastfeeding initiation.

CONCLUSIONS: A higher pregravid weight status was associated with breastfeeding initiation with older overweight/obese women being at even higher risk of not initiating compared to their younger counterparts. Contrary to expectations, pregnancy-related depressive symptoms did not influence this relationship.

PUBLIC HEALTH IMPLICATIONS: Breastfeeding has many health benefits for the mother and child. It is especially important to encourage all overweight and obese women and, in particular, those who are older than 25 years, to initiate breastfeeding.

Concurrent Session B6

Factors Affecting Breastfeeding: Positive or Negative

THE PARADOX OF WORKPLACE RE-ENTRY AND BREASTFEEDING

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BACKGROUND: Research suggests that women who plan to return to work (RTW) or school are more likely to initiate breastfeeding (BF), but are also at an increased risk of earlier BF cessation. Length of maternity leave can affect BF outcomes; women returning to work earlier are more likely to terminate breastfeeding. This multi-factorial relationship warrants further analysis.

STUDY QUESTIONS: Among women employed during pregnancy, did return to work/school affect BF duration within the first six months?

METHODS: Secondary analyses were conducted with data obtained from a prospective cohort study of 842 postpartum BF women. Women with uncomplicated, singleton term deliveries were recruited from two urban community hospitals. Respondents completed an enrollment interview (including RTW plans) and mailed surveys at 2-weeks, 3-months and 6-months to assess BF experience and outcomes. A subset of women with vaginal births (cesarean births excluded given longer maternity/disability leaves) and antenatal employment were available for the analysis (n=369). Only those with RTW plan were included in these analyses (n=347). Kaplan-Meier curves assessed the unadjusted relationship between RTW and BF cessation. Hazard ratios (HR) and 95% confidence intervals (CI) of BF cessation were estimated using the Cox Proportional Hazards Model adjusting for maternal demographics, planned and actual employment variables.

RESULTS: Kaplan-Meier results show a crude protective association between workplace re-entry and BF duration (p=0.014); after adjustment for potential confounders the association was no longer significant (aHR 0.63; CI 0.18 -2.21). Analyses were limited to women who completed at minimum the 2-week survey. Those excluded may be at increased risk of BF cessation.

CONCLUSIONS: After controlling for potential confounders including planned timing of RTW, there was no association between RTW and BF duration; higher education significantly predicted longer duration. Several non-significant trends were observed: early RTW and longer hours worked negatively affected BF duration.

PUBLIC HEALTH IMPLICATIONS: Further prospective research should be conducted to collect planned and actual employment data on women who initiate BF to further explore this potential paradox. Interventions designed to help women acclimate to early RTW and longer work hours are needed.

Concurrent Session B6

Factors Affecting Breastfeeding: Positive or Negative

THE EFFECT OF MATERNITY LEAVE LENGTH AND TIME OF RETURN TO WORK ON BREASTFEEDING INITIATION AND DURATION

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BACKGROUND: Work-related issues have been found to play a role in breastfeeding practices. However, most of the published studies are not nationally representative.

STUDY QUESTIONS: Our objective was to determine the effect of maternity leave length and time of return to work on breastfeeding using nationally representative data.

METHODS: Data were from the Early Childhood Longitudinal Study-Birth Cohort. Restricting our sample to singletons whose biological mothers were the respondents at the 9-month interview and worked in the year before delivery (unweighted n~6,150), we classified total maternity leave (weeks) as 1-6, 7-12, >=13 and 'did not take maternity leave'; paid maternity leave (weeks) as 0, 1-6 , >=7 , and 'did not take maternity leave'; and time of return to work after delivery (weeks) as 1-6, 7-12, >=13, and not yet returned to work (by the 9-month interview). Analyses included chi-square tests, multiple logistic regressions and Cox proportional hazards models (SUDAAN 10). The mean observation period for any and exclusive breastfeeding was 24.5 and 10.5 months respectively. One limitation of the study was that breastfeeding intent was not assessed.

RESULTS: Of all mothers of singletons born in the US in 2001 who worked in the year before delivery, 69.4% initiated breastfeeding with variation by total maternity leave (p=0.0004); paid maternity leave (p=0.0057) and time of return to work (p=0.0529). In adjusted analysis, women who had not yet returned to work had a 46% (95% CI=1.08-1.97) greater odds of initiating breastfeeding than those returning within 1-6 weeks (referent group). The risk of stopping any breastfeeding was 19% less (95% CI=0.68-0.97) among women returning at >=13 weeks than the referent group. For exclusive breastfeeding, the risk of cessation was 22% less (95% CI=0.63-0.96) among women returning at >=13 weeks and 24% less (95% CI=0.59-0.98) among women who had not yet returned to work than the referent group.

CONCLUSIONS: Women returning to work later are more likely to initiate breastfeeding and breastfeed longer.

PUBLIC HEALTH IMPLICATIONS: Policies enabling postpartum women to take sufficient time from work are sorely needed.

Concurrent Session B7

Individual and Community Factors Associated with Preterm Birth

PRETERM BIRTH RISK ASSOCIATED WITH MATERNAL RESIDENCE IN AN ETHNIC ENCLAVE AMONG SEVEN ETHNIC GROUPS IN NEW YORK CITY

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BACKGROUND: Residential segregation in the United States separates black Americans from resources and opportunities available to whites, which may undermine the health of the black population. There are some positive potential correlates of segregation, however, such as reduced exposure to discrimination. Among Hispanic and Asian immigrants, segregation may additionally buffer the stress of acculturation or provide access to country-of-origin foods. The balance of positive and negative correlates of segregation may be ethnic group-specific. Few studies have explored the segregation-health relationship in Hispanic or Asian groups, however.

STUDY QUESTIONS: What is the association between maternal residence in an ethnic enclave and preterm birth risk among seven ethnic groups in New York City?

METHODS: New York City birth records for 1995 through 2003 provided information on gestational age, individual-level covariates, and maternal census tract of residence. Ethnic and total population counts from the 2000 Census were used with between-tract distances to construct a spatial measure of neighborhood ethnic density. Log odds of preterm birth to non-Hispanic white, non-Hispanic black, Spanish Caribbean, Central American, South American, East Asian and South Asian women were modeled as a function of the density of the maternal ethnic group in the neighborhood, dichotomized at 25%. Logistic model coefficients were used to compute risk differences for more direct public health and policy application.

RESULTS: Covariate-adjusted differences in preterm birth risk comparing ethnic enclaves (>25% ethnic density) to lower-density neighborhoods ranged from -13.6 per thousand (-16.6, -9.5) among whites to 5.6 per thousand (95% CI: 0.7, 10.5) among blacks. Hispanic and Asian responses to ethnic density were less pronounced, but tended to be protective. When estimated in poorer neighborhoods (defined using an index based on 17 census variables and dichotomized at the overall median), the protective effect was stronger for all groups except non-Hispanic blacks.

CONCLUSIONS: Ethnic group-specific segregation responses may reflect differences in the balance of health-relevant material and psychosocial segregation correlates across groups.

PUBLIC HEALTH IMPLICATIONS: Ethnic enclaves may be health-promoting for some groups and not for others. Housing-related policies might consider the potential health implications of changes to neighborhood ethnic composition.

Concurrent Session B7

Individual and Community Factors Associated with Preterm Birth

BLACK-WHITE DIFFERENCES IN PRETERM BIRTH: THE IMPORTANCE OF STATE AND LOCAL FACTORS

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BACKGROUND: Individual level risk factors have generally failed to explain persistent Black-White preterm birth (PTB, <37 weeks' gestation) disparities. We examined the contribution of state and county level characteristics to the Black-White PTB disparity and race-based differences in contextual factors to identify avenues toward disparity reduction.

STUDY QUESTIONS: Do state and county level characteristics help to explain the Black-White PTB disparity? Do the effects of contextual factors vary by race?

METHODS: We examined PTB among infants born to non-Hispanic Black (N=1,683,209) and non-Hispanic White (N=6,671,210) mothers using the 1999-2001 US Linked Birth / Infant Death Cohort Files. State-level contextual variables from Census data included the % of Black marriages to White spouses and the % low-wage workers. County-level contextual variables included poverty, income inequality, % Black, urban/rural status, region, and health care provider to population ratios. Contextual effects were examined in unified and race-stratified logit-link models; generalized estimating equations accounted for the clustering of observations by county.

RESULTS: The odds ratio (OR) of PTB for Blacks compared to Whites was reduced by controlling for individual and contextual factors from 1.96 (unadjusted model) to 1.57 (individual factor adjustment) and 1.55 (contextual and individual factor adjustment). In race-stratified models, a mixed pattern of results emerged. For both races, the adverse effect of % low-wage earners was similar as were the protective effects of increasing primary care (by 10 per 10,000, Black OR: 0.96, White OR: 0.94) and midwife (by 1 per 10,000, Black OR: 0.92, White OR: 0.93) ratios. Living in a state with higher levels of interracial marriage was protective for both races, but the impact was stronger for Blacks than Whites (1 SD, Black OR: 0.90, White OR: 0.98).

CONCLUSIONS: For both races, increasing supply of primary care and midwives was protective. The highly protective impact of state interracial marriage rates on Black PTB risk suggests the cultural context of race and discrimination may play a critical role in generating inequality.

PUBLIC HEALTH IMPLICATIONS: Policies promoting the primary care physician and midwife supply may be universally beneficial while policies promoting social integration may help to reduce the Black-White PTB disparity.

Concurrent Session B7

Individual and Community Factors Associated with Preterm Birth

VIEWS OF URBAN AFRICAN AMERICANS REGARDING THE IMPORTANCE OF LIFE COURSE FACTORS TO BIRTH OUTCOMES

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BACKGROUND: Wisconsin's African American infant mortality rate is one of the highest in the country. Although increasing attention is being paid to the importance of life course factors to birth outcomes, little is known about whether the most affected populations recognize these factors as important.

STUDY QUESTIONS: Do urban African Americans view risk and protective factors both before and during pregnancy as important to birth outcomes, and do these views differ by respondent characteristics?

METHODS: As part of the ABCs for Healthy Families project, community interviewers administered surveys to a convenience sample of 287 predominantly African American adults in two Wisconsin cities during the Spring of 2009. Prevalence estimates were calculated for all survey questions, and odds ratios were estimated for the factors viewed as least important.

RESULTS: Nearly all survey respondents felt that a woman's life experiences (94%) and health (95%) before her pregnancy were important to having a healthy baby. Depression, support from the baby's father, and seeing a doctor before pregnancy were viewed by the greatest number of respondents as important to birth outcomes. Having experienced discrimination, growing up poor, and whether the mother herself was born premature or low birthweight were not well understood as important risk factors.

Compared to respondents with more education, those with a high school education or less were more likely to agree that whether a woman was poor growing up (OR=1.9; 1.2-3.1) and whether she experienced discrimination (OR=2.3; 1.4-3.8) were important to birth outcomes. Men were more likely than women to view discrimination as important (OR=2.2; 1.3-3.8). Respondents receiving government assistance were less likely to view being overweight before pregnancy as important compared with those not on assistance (OR=0.58; 0.34-0.99).

CONCLUSIONS: The urban African Americans in this sample were largely aware in general that a woman's life experiences and health before pregnancy are important to birth outcomes. However, knowledge was not universal for all risk and protective factors or across all respondent demographics.

PUBLIC HEALTH IMPLICATIONS: These findings will be used to inform social marketing and community-based initiatives to address the impact of life course factors on disparities in birth outcomes. Additional examination should be done to confirm these findings.

Concurrent Session B8

Lifestyle Factors and Behaviors in Pregnancy

DEFINING BINGE DRINKING AMONG REPRODUCTIVE WOMEN IN HAWAII – DISAGGREGATING THE DATA

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BACKGROUND: Maternal binge drinking has been linked to many negative health outcomes for newborns, including Fetal Alcohol Spectrum Disorder (FASD). Heavy alcohol use before pregnancy is highly predictive of continued use. However, there is limited knowledge on the frequency of binge drinking episodes. In order to examine the extent of binge drinking in Hawaii, analysis of the Behavioral Risk Factor Surveillance System (BRFSS) was done.

STUDY QUESTIONS: What is the frequency of binge drinking among reproductive-aged women in Hawaii?

METHODS: BRFSS, a population based telephone survey of health behaviors, was analyzed among 3044 reproductive aged women in Hawaii from 2006-2008. Estimates of binge drinking and frequency of binge episodes in the past 30 days were calculated and compared among socio-demographic groups.

RESULTS: 16.7% (95% CI 14.9-18.7) of reproductive-aged women in Hawaii had at least one binge drinking episode in the 30 days prior to being surveyed. The median number of binge episodes was 2 and ranged from 1 to 30. Of women who reported binge drinking, 54.8% (95%CI 52.4-57.1) binged on 2 to 6 occasions; 33.4% (95% CI 31.3-35.6) binged 14 or more times. Caucasians had the highest prevalence of 14 or more binge episodes (48.4%, 95% CI 43.6-53.3), followed by "Other Asian" (41.5%, 95%CI 26.1-58.9), and non-Hawaiian multiracial women (34.7%, 95%CI 30.6-39.1).

CONCLUSIONS: Almost 1 in 5 reproductive-aged women in Hawaii had a binge drinking episode in the past 30 days. The median number of binge drinking episodes indicated that women in Hawaii binge infrequently. However, expanded analysis showed that 1/3 of women who binge drank did so14 or more times (nearly half of Caucasian, over 40% of "Other Asian", and over a third of non-Hawaiian multiracial women), putting themselves at high risk for adverse consequences.

PUBLIC HEALTH IMPLICATIONS: Expanded analysis should be undertaken to understand the context of the frequency of binge episodes among those classified as binge drinkers. These results could be utilized to reduce binge drinking among at-risk groups through prevention, public awareness and education efforts through the Hawaii FASD program.

Concurrent Session B8

Lifestyle Factors and Behaviors in Pregnancy

PERINATAL FACTORS AND OUTCOMES AMONG WOMEN WITH DIFFERENT SMOKING BEHAVIORS DURING AND AFTER PREGNANCY, MARYLAND, 2001-2007

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BACKGROUND: Research documented in the U.S. Surgeon General's Report "The Health Consequences of Smoking" has shown that women's smoking during pregnancy increases the risk of pregnancy complications, premature delivery, low-birth-weight infants, stillbirth, and SIDS.

STUDY QUESTIONS: What are differences in behaviors and birth outcomes between women who never smoked, smoked, quit smoking, or resumed smoking during or after pregnancy?

METHODS: Data were obtained from a stratified random sample of 10,898 mothers who delivered live infants during the years 2001-2007 and completed the Maryland Pregnancy Risk Assessment Monitoring System (PRAMS) survey. Descriptive and bivariate analyses were performed using SAS. Nonsmokers reported not smoking before, during, and after pregnancy. Smokers reported smoking before, during, and after pregnancy. Quitters reported quitting before the last 3 months of pregnancy (and did not resume smoking). Resumers reported quitting during pregnancy but resumed later.

RESULTS: In Maryland, 81.4% of mothers were nonsmokers, 8.9% were smokers, 4.3% were quitters, and 4.6% were resumers.

Quitters had the highest prevalence of obtaining first trimester prenatal care(85.5%) compared with nonsmokers(77.3%) and smokers(69.5%).

More smokers (53.6%) reported having 3 or more stressful life events, such as divorce, homelessness, or inability to pay bills, than nonsmokers(23.8%) or quitters(32.0%). Smokers were more likely to report postpartum depression (23.0%) than nonsmokers(9.9%) and quitters(10.8%).

Nonsmokers and quitters were more likely to breastfeed for 10 or more weeks (57.2%, 56.0%) compared to smokers(17.4%).

Quitters had lower prevalence of low birth weight births(5.7%) than nonsmokers(7.5%) and smokers(13.1%).

Results on behaviors and outcomes for resumers overlapped those in other groups.

CONCLUSIONS: This analysis indicates that women who quit smoking during pregnancy may be similar to nonsmokers in their behaviors and outcomes compared to women that continue smoking. Quitters had similar or higher prevalence of getting early prenatal care and breastfeeding compared to nonsmokers. They also had similar or lower prevalence of depression, stressors, and low birth weight infants compared to nonsmokers.

PUBLIC HEALTH IMPLICATIONS: The results of this study indicate that interventions designed to identify and reach out to women who are unable to quit smoking during their pregnancies are needed to improve maternal and infant health.

Concurrent Session B8

Lifestyle Factors and Behaviors in Pregnancy

SICKLE CELL DISEASE AND PREGNANCY OUTCOMES AMONG WOMEN OF AFRICAN DESCENT

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BACKGROUND: Sickle cell disease (SCD) is a severe hematologic condition that presents unique complications among affected pregnant women. Many studies of adverse perinatal outcomes associated with SCD are limited by small samples or fail to consider important risk factors.

STUDY QUESTIONS: Do maternal and perinatal outcomes differ between women of African ancestry with and without SCD in a large, population-based sample after adjustment for other important risk factors?

METHODS: Data from the Massachusetts Pregnancy to Early Life Longitudinal (PELL) Data System were used to identify in-state deliveries to resident women of African descent. Logistic regression analyses compared perinatal outcomes for deliveries among women with and without SCD, adjusted for maternal age, education, parity, plurality, insurance status, adequacy of prenatal care, smoking during pregnancy, and infant sex. By limiting our study sample to women of African ancestry, we missed approximately 10% of SCD deliveries. Our study does not include spontaneous first trimester or elective abortions because Massachusetts does not require reporting of fetal deaths less than 20 weeks gestation and less than 350 grams birth weight. This may underestimate our perinatal outcome findings.

RESULTS: During 1998-2006, there were 116,076 deliveries to 84,561 women of African ancestry. SCD prevalence was 0.6%. Adjusted odds of fetal death among deliveries to women with SCD were 2.2 times that of women without SCD (95% confidence interval, CI= 1.2-4.2). Compared to women without SCD, the odds of preterm delivery and low birth weight among women with SCD were 1.5 (95% CI= 1.2-1.8) and 1.7 (95% CI 1.1-2.6), respectively; but not significantly associated with small-for-gestational-age or intrauterine growth restriction. SCD was positively associated with cesarean delivery.

CONCLUSIONS: SCD was associated with increased odds of fetal death, preterm delivery, and low birth weight infants, and cesarean delivery among women of African ancestry.

PUBLIC HEALTH IMPLICATIONS: Population-based linked data systems are useful for assessing risks of adverse health outcomes among women with specific medical conditions, such as SCD. Women with SCD should seek preconception care to identify and modify risk behaviors and receive counseling regarding potential adverse sequelae associated with pregnancy-related morbidity and preterm delivery.

Concurrent Session B8

Lifestyle Factors and Behaviors in Pregnancy

TRENDS IN MATERNAL DIABETES IN CHICAGO BY RACE/ETHNICITY AND AGE, 1989-2005

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BACKGROUND: Diabetes during pregnancy poses a serious concern, as it has the potential to affect the health of both the mother and her unborn child. Nationally, approximately between 2-5% of all pregnancies are complicated with gestational diabetes. The prevalence of diabetes among Blacks, Hispanics, American Indian and Asian/Pacific Islander women is at least 2-4 times higher than that of white women.

STUDY QUESTIONS: To examine trends in maternal diabetes from 1989 to 2005 in Chicago by race/ethnicity and maternal age.

METHODS: Data used for this study were obtained from Illinois Department of Public Health (IDPH) birth files for birth years 1989 to 2005. All births to mothers residing in the City of Chicago were used to determine maternal diabetes specific rates during pregnancy. Diabetes was measured using the 'medical risk factors' variable in the birth file. SAS Enterprise Guide 4.0 was used to generate disease specific rates for diabetes during pregnancy for Chicago births.
Study limitations: Birth certificate data may underreport diabetes during pregnancy. In addition, gestational diabetes mellitus and chronic diabetes were not distinguished in this study.

RESULTS: From 1989 to 2005, there has been a significant increase of reported diabetes during pregnancy from 14.4 to 27 per 1,000 live births. Rates of diabetes during pregnancy were highest for women aged 35 and older, 57.9 per 1,000 births, and Hispanic women, 35.3 per 1,000 births. In 2005, Hispanic mothers were 1.5 times as likely to report diabetes during pregnancy compared to NH-White women.

CONCLUSIONS: Findings from this study showed a rapid increase in prevalence of diabetes during pregnancy for all mothers, especially in the last decade. This study demonstrates the importance of diabetes prevention and treatment, to reduce possible maternal and infant morbidity.

PUBLIC HEALTH IMPLICATIONS: The dramatic increase in the prevalence of diabetes during pregnancy might reflect the current patterns of increased obesity. The increasing number of deliveries affected by diabetes has lifelong medical implications not only for the mother, but also for her offspring. Mothers who are diagnosed with diabetes during pregnancy are at higher risk for Type II Diabetes Mellitus after delivery.

Concurrent Session B8

Lifestyle Factors and Behaviors in Pregnancy

NEWBORN INPATIENT CARE DAYS AND CHARGES ASSOCIATED WITH MATERNAL SUBSTANCE USE: NEW JERSEY

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BACKGROUND: Substance use during pregnancy can result in premature births, low birth weight and fetal alcohol syndrome. In 2005, the economic cost associated with pre-term birth was at least $26.2 billion nationally. Advanced medical technologies have resulted in improved care, but have resulted in substantial increases in health care costs. Limited data are available in quantifying newborn costs with respect to maternal substance use during pregnancy.

STUDY QUESTIONS: Examine average hospitalization charges and inpatient care days for newborns exposed to maternal smoking, drinking and drug use as compared to those newborns not exposed to maternal substance use.

METHODS: The 2005 Electronic Birth Certificate (EBC) records were linked to the Hospitalization Delivery (HD) records using the AUTOMATCH software. A combination of EBC check boxes and the ICD-9 codes in the HD records were used to identify newborns exposed to maternal substance use. The HD record was also the source of information for inpatient care days and hospitalization charges. Average newborn hospitalization charges and days of care were summarized by categories of smoking, alcohol use, and drug use, and were compared to those of the newborns not exposed to maternal substance use.

RESULTS: There were 9,629 (One in 10) newborns exposed to maternal substance use in 2005. Average hospitalization charges and inpatient care days for newborns exposed to maternal substance use were about 40%-50% higher compared to those of the newborns not exposed to maternal substance use for each substance use category.

CONCLUSIONS: Newborns exposed to maternal substance abuse accounted for disproportionate hospitalization charges and days of inpatient care.

PUBLIC HEALTH IMPLICATIONS: The linked databases can be used to better identify cases, and monitor trends in costs of newborn care. Targeted efforts on pre-pregnancy and inter-pregnancy screening and counseling, could result in substantial cost savings. Further analysis should examine if mothers who report substance use have better outcomes and cost savings if they have early and adequate access to prenatal care.

Concurrent Session C1

Special Session: Maternal Health in Developing Countries – The Role of U.S. Experts

Roger Rochat, MD, Italia Rolle, PhD, Mary Ellen Stanton, Linda Bartlett, Majorie Koblinsky,
Centers for Disease Control and Prevention, Hubert Department of Global Health Epidemiology, Rollins School of Public Health, USAID, Johns Hopkins University, John Snow

INTRODUCTION TO THE TOPIC: The United States has played a major role in improving maternal health in developing countries in the 20th century and this commitment continues into the 21st century. Pregnancy-related complications are major contributors to maternal morbidity and mortality in developing countries. In the African region, 1 in 16 women die during pregnancy or childbirth. The major complications observed include hemorrhage, sepsis, unsafe abortion, obstructed labor and pregnancy-induced hypertension. In 2000, the United Nations adopted eight millennium goals to address poverty and improve the socio-economic status of persons living in developing countries. Goal five states the need to improve maternal health. Current strategies for improving maternal health include: family planning, access to health care during pregnancy, skilled health care workers at every birth, and access to emergency treatment if complications arise. A 2008 monitoring report indicates that the target put in place for improving maternal health (reducing the 1990 maternal mortality ratio by 75%) quite possibly will not be achieved by the year 2015.

JUSTIFICATION FOR SPECIAL SESSION: Safe motherhood should be a right not only for women in developed countries but also in developing countries. There needs to be a continued commitment by the United States and other developed countries to decrease the gap that exists between these two groups. Three major epidemiologic challenges experienced by persons working in this area include: methods for determining estimates of maternal morbidity and mortality, improving data quality and monitoring and evaluating interventions. An international session on maternal health is warranted by: (1) the need for goal five of the millennium development goal five to be achieved by 2015, (2) the request by past maternal and child health (MCH) epidemiology conference attendees to include international sessions, (3) the important role of epidemiology in maternal health, and (4) the commitment of the United States government to improve global maternal health.

DESCRIPTION OF SPECIAL SESSION: President Obama's 2010 budget includes funding for a global health initiative that includes a focus on maternal health and family planning in developing countries. Three senior U.S. experts in the field of global maternal health will form a panel to provide the audience with an overview, current challenges and a plan for improving maternal health in developing countries. The goal of the session is to raise awareness and challenge conference attendees to think outside the box in regards to: determining the burden of maternal morbidity and mortality in developing countries and assessing current and past strategies and interventions. After the panelists have presented there will a moderated question and answer session.

Concurrent Session C2

Workshop: Enabling Linkages of MCH Data: An Introduction to FRIL Software

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DESCRIPTION OF WORKSHOP: In the first part of the training, participants will be introduced to the problem of data linkage including current state-of-the-art techniques in the field. The second part will be a presentation of the FRIL software and an actual data linkage, starting from reconciliation of differences in input data and ending with linkage configuration and debugging. We will use sample data to illustrate how different problems can be solved. The last part of the session will discuss experiences we gained from deploying FRIL on different record linkage projects. During this part of the session we will share the best practices for using the software and insights on how to achieve the highest quality of the linkage results. We will focus on recent projects using FRIL to link data from vital records (n=1.25 million) and from cancer registry (n=3,760) with birth defects surveillance records (n=12,700) from the Metropolitan Atlanta Congenital Defects Program. These linkages will serve as an example. Compared with the data linkage performed by conventional algorithms or a different record linkage software, the data linkage using FRIL was more efficient (the process was much faster) and accurate. We will describe details of the issues we faced during the linkage of the above-mentioned datasets and present the process for achieving optimal results and that are likely to be applicable to other projects.

Participants of the session will learn methods of efficient data linkage and understand foundations of FRIL software. They will also gain knowledge on how to analyze input data, prepare linkage and validate and improve the quality of the results. Finally, they will learn important insights on the most common linkage issues and possible solutions to those problems.

JUSTIFICATION FOR WORKSHOP: Record linkage is an essential component for both data cleaning and integration in population-based surveillance programs, and achieving robust linkage rate is very important in MCH research field. Matching two or more databases in the absence of a unique identifier, however, is a long process requiring laborious and sometimes ad hoc data operations. Traditional interactive tools for record linkage provide users with limited control, mostly allowing options to specify similarity measures between records and decision models. As a part of a surveillance program for birth defects in the metropolitan Atlanta area, we developed the Fine-grained probabilistic Record Integration and Linkage tool (FRIL) that provides latitude in the choice of linkage parameters, allows for efficient and accurate linkages, and enables objective assessments of the quality of the results. FRIL has been successfully used in various record linkage projects including the linkage of birth defects monitoring data with the state of Georgia vital records database and a cancer registry.

Participants in previous trainings have been impressed with the software's capabilities, and have expressed a strong interest in using FRIL for different types of MCH input data, such as vital records, national survey data, hospital discharge records or Medicaid data. More importantly, FRIL was considered to be more intuitive and easy-to-use than other tools, even though it offers more configuration parameter options.

The findings and conclusions in this abstract are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention

BIOGRAPHICAL SKETCH OF PRIMARY PRESENTERS: Pawel Jurczyk received his MS in computer science from AGH University of Science and Technology in Krakow, Poland (2005). He is currently an ORISE fellow with the National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention. He is also a PhD candidate in computer science and informatics at Emory University where he is completing research on privacy-preserving integration of distributed and heterogeneous data. His research interests include distributed systems, distributed databases, data integration issues, privacy issues in data, data linkage methods and distributed data linkage.

Concurrent Session C3

Heal the World: Addressing Disparities in Perinatal Interventions

RACIAL AND ETHNIC VARIATIONS IN TEMPORAL CHANGES IN FETAL DEATHS AND FIRST DAY INFANT DEATHS

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BACKGROUND: For much of the 20th century infant mortality rates declined; however, in recent years, rates have become stagnant or in some cases increased and disparities continue to increase. One hypothesis for this phenomenon is that the overall infant mortality rates are influenced by first day deaths or fetal deaths.

STUDY QUESTIONS: The study purpose was to examine overall and racial/ethnic-specific changes in proportions and rates of fetal death and first day death (<24 hr) from 1990-1991 to 2001-2002.

METHODS: Deliveries to U.S. resident white, black, and Hispanic mothers were selected from the NCHS linked live birth-infant death cohort and fetal deaths files (1990-1991 and 2001-2002). Analyses included calculating the proportion of fetal and <24 hr deaths by gestational age, race, and year category and the percent change over time. The rate ratios for each race group were calculated.

RESULTS: The percent of fetal and <24 hr deaths at early gestational ages increased over time. Fetal mortality among white and Hispanics improved (6.95% and 14.89% respectively); blacks worsened by 1.79%. For <24 hr mortality, there was a nearly 30% decrease overall, but black rates continue to be double those of whites and Hispanics. Rate ratios of black: white fetal mortality increased (2.14 in 1990-91 to 2.34 in 2001-02). Black: white rate ratios for <24 hour mortality declined slightly and Hispanic: white increased over time. At lower gestational ages (20-33 weeks gestation), the fetal and <24 hr mortality rates were lower among blacks compared to whites and Hispanics, with a rate ratio less than 1 but this declined to 20-29 weeks gestation in 2001-02. At higher gestational ages (38+ weeks) black: white ratios were greater and increased over the 2 time periods.

CONCLUSIONS: Overall, fetal and <24 hr mortality has improved over time; however, there is evidence that racial/ethnic disparities persist at certain gestational ages.

PUBLIC HEALTH IMPLICATIONS: This study suggests opportunities for improvement in mortality in some racial/ethnic groups at certain gestational ages. Racial disparities have increased among late fetal deaths, suggesting that clinical management or health service availability may not be uniform across all racial and ethnic groups.

Concurrent Session C3

Heal the World: Addressing Disparities in Perinatal Interventions

DISPARITIES IN RECEIPT OF ANTENATAL STEROIDS AND SURFACTANT REPLACEMENT THERAPY IN PRETERM BIRTH: DATA FROM THE NATIONAL VITAL STATISTICS SYSTEM

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BACKGROUND: Antenatal steroids and surfactant replacement therapy reduce infant morbidity and mortality by protecting against respiratory complications. Expectant mothers receive antenatal steroids to facilitate fetal lung maturation prior to preterm delivery. Surfactant replacement therapy (administered to infant) also aids lung development. Within specific preterm gestational age groups in which most infants are likely to have premature lungs, treatment rates should be similar for all racial/ethnic groups.

STUDY QUESTIONS: Are treatment rates for preterm births different by race and Hispanic origin?

METHODS: Data consist of 2,073,368 births in the 19 states (49 percent of U.S. births) that implemented the 2003 U.S. Standard Certificate of Live Birth as of January 1, 2006: California, Delaware, Florida, Idaho, Kansas, Kentucky, New Hampshire, Nebraska, New York (excluding New York City), North Dakota, Ohio, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Vermont, Washington, and Wyoming. Analysis included only singleton births because preterm birth is more common among multiples and rates of multiple births are different for each racial/ethnic group. Reasons for possible racial/ethnic differences in treatment rates are explored.

RESULTS: Antenatal steroids were given to 46.6 per 1,000 mothers who had a preterm birth. Treatment rates were similar for non-Hispanic black (58.9) and white (58.1) mothers, whereas the rate for Hispanic mothers was much lower (26.3). Nearly 20 per 1,000 preterm infants received surfactant replacement therapy, including 26.2 non-Hispanic white infants, 22.0 non-Hispanic black and 10.4 Hispanic infants. Within shorter preterm gestational ages, rates for both treatments were higher for non-Hispanic white mothers and infants than non-Hispanic black counterparts who, in turn, were more likely to receive treatment than Hispanic mothers and infants. Differences persisted when examined by maternal age and education levels.

CONCLUSIONS: Large differences in antenatal steroid treatment and surfactant replacement therapy exist by race/Hispanic origin; Hispanic mothers and infants were often only half as likely as their non-Hispanic white counterparts to receive treatment. Further research is necessary to determine reasons for these disparities.

PUBLIC HEALTH IMPLICATIONS: More understanding is needed about the factors behind the disparities, which, in turn, can inform appropriate education and policy strategies to maximize positive outcomes for all pregnancies.

Concurrent Session C3

Heal the World: Addressing Disparities in Perinatal Interventions

IS ACCULTURATION A FACTOR IN HIGH CESAREAN BIRTH RATES ON THE US-MEXICO BORDER?

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BACKGROUND: The cesarean-section rate (CSR) in some US-Mexico border communities is 44% compared with 29% among US Hispanics. The demographic and clinical profile of border women does not suggest high-risk pregnancy, however. The border population is transitional between Mexican and American cultures and may differ from the US Hispanic population in other ways that affect the CSR.

STUDY QUESTIONS: Does acculturation contribute to the high CSR in border communities?

METHODS: A 2005 representative sample of 947 women who gave birth in Matamoros, Mexico and Cameron County, Texas were interviewed prior to hospital discharge. Behavioral, lifestyle, clinical and pregnancy-related information was collected. We explored interview language, birthplace, ethnicity, and US/Mexican residence as acculturation measures. We computed weighted CSRs, 95% confidence intervals (CI), and chi-square statistics for each covariate. Potentially confounding variables ($p<0.15$) were modeled using multiple logistic regression, and adjusted odds ratios (AOR) of cesarean birth were calculated.

RESULTS: Overall, 44.4% of Mexican residents, 45.4% of US Spanish-speaking Hispanic (USH) residents, 40.3% of US English-speaking Hispanic (UEH) residents, and 47.5% of US non-Hispanic (UNH) residents had a cesarean birth ($p=0.62$). Birthplace was distributed similarly among women with vaginal and cesarean births ($p=0.67$). CSR among adolescents (33.1%) and women with <8th grade education (33.6%) were lowest; rates rose with increasing age ($p=0.002$) and education ($p=0.002$). Higher CSR occurred among employed, married, and privately insured women and those with early prenatal care. Clinical risk factors for cesarean birth, such as obesity and hypertension, were as or less common than expected, and were also observed in the expected direction, The cesarean AOR among Mexican, USH, and UEH women was 0.97 (0.57–1.67), 0.96 (0.54–1.72), and 0.65 (0.34–1.27), respectively, in comparison to UNH women.

CONCLUSIONS: Acculturation measures do not contribute to the high CSR in this US-Mexico border population. Well-established demographic and clinical risk factors were no more prevalent than expected and therefore do not account for the high CSR

PUBLIC HEALTH IMPLICATIONS: Because patient characteristics do not explain the high CSR in this border population, binational study of provider characteristics, such as physician attitudes and practices related to cesarean birth, should be pursued.

Concurrent Session C3

Heal the World: Addressing Disparities in Perinatal Interventions

EXPLAINING RACIAL AND ETHNIC DISPARITIES IN CESAREAN SECTION RATES, 1998-2006

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BACKGROUND: While U.S. cesarean rates rose to 31.8% overall in 2007, little attention has been paid to race/ethnicity disparities in these rates. In 2007, Black non-Hispanic (BNH) mothers had the highest overall cesarean rate (33.8%) among major race/ethnicity groups in the U.S. compared to 32.0% for white non-Hispanic (WNH) mothers, 31.4% for Asian/PI mothers and 29.7% for Hispanic mothers.

STUDY QUESTIONS: To what extent do variations in medical risk factors and demographic characteristics explain differences in cesarean rates by race/ethnicity?

METHODS: This study relies on US natality data for context, but primarily the Pregnancy to Early Life Longitudinal (PELL) Database of Massachusetts births from 1998-2006 for analysis. PELL links birth certificate to hospital discharge data and includes additional variables (e.g. insurance status; language preference) and allows for more refined measurement of medical risk factors than national data. Data from PELL on maternal medical risk, labor and delivery complications, and demographic characteristics will be used in bivariate and multivariate analyses.

RESULTS: Bivariate analysis found that differences in racial disparities in US cesarean rates are more substantial for foreign born than native born mothers. Nationally BNH foreign born mothers 2006 overall cesarean rates were 6 percentage points higher than WNH foreign born (36.1% to 30.1%), 4 times the difference between native born mothers across races (32.6% to 31.2%). In Massachusetts, BNH mothers had higher cesarean rates compared to WNH and Hispanic mothers across almost all major demographic and medical risk subgroups and even in cases where no medical complication was recorded. The major exceptions were nativity and gestational ages less than 39 weeks with US born WNH mothers having higher rates than US born BNH mothers (unlike the US) and gestational age (GA) where WNH mothers had higher cesarean rates at every GA below 39 weeks.

CONCLUSIONS: Based on initial analysis, variance in primary cesarean rates by race ethnicity persist across demographic and medical risk groups, but nativity is a mediator in some comparisons.

PUBLIC HEALTH IMPLICATIONS: Greater attention needs to be paid to differences in cesarean rates by race/ethnicity and the persistence of differences even after controlling for maternal demographic and health characteristics.

Concurrent Session C4

It Takes a Village to Save a Child: Bridging the Gap through Social Context

MEASURING THE GAP OF MASSACHUSETTS INFANT MORTALITY RATES: RACIAL DISPARITIES BY INDIVIDUAL AND CONTEXTUAL LEVELS OF SOCIO-ECONOMIC-STATUS AND BY MATERNAL OCCUPATION

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BACKGROUND: Massachusetts has consistently reported adverse Black-to-White relative difference in infant mortality rates (IMR) for the last 10 years (2.5 in 1996 and 2.7 in 2006). The interaction of racial differences in IMR by individual- versus neighborhood-socioeconomic levels and by maternal occupational status are measured and compared in this study.

STUDY QUESTIONS: How large is the racial gap in IMR by levels of maternal education, of neighborhood poverty, and of occupational status?

METHODS: Geocoded Massachusetts 2004-2006 births were linked to Census 2000 federally-defined poverty level by census-tract and grouped in 4 categories. Maternal education from birth certificates were grouped as less-than-high-school (<HS), high-school (HS), some-college (Assoc), and college-or-more (coll+) education. 1990 census occupational codes were assigned to maternal occupation using NIOSH software and grouped as managerial, technical, and service occupations. Racial and ethnic disparities were measured using ratio of IMR for Hispanic and Black mothers to that of non-Hispanic Whites. 95% confidence-intervals of ratio of rates were used to identify significant disparities compared with that of White mothers.

RESULTS: The Black IMR did not improve with increasing level of maternal education as it did for Hispanic and White mothers. The Black and Hispanic IMR improved with increasing level of neighborhood affluence. The IMR did not improve significantly with increasing occupational status for all racial groups. The Black-to-White IMR gap prevailed at all levels of maternal education, of neighborhood poverty (except for the least poor) and of occupational status.

CONCLUSIONS: For Hispanics, higher educational attainment, living in more affluent neighborhoods, and with upward occupational status mitigated IMR and narrowed the Hispanic-to-White IMR gap. However, for Black mothers, higher educational attainment did not improve IMR nor the Black-to-White gap, while living in more affluent neighborhoods and upward occupational status remained significantly high but improved IMR and the Black-to-White gap.

PUBLIC HEALTH IMPLICATIONS: Strategies to reduce racial disparities in IMR may need to address the size of child bearing-age minority populations with lower education, living in poor neighborhoods, and with lower occupational status and the need of a better understanding of nonexistent protective effect of higher education among Black mothers.

Concurrent Session C4

It Takes a Village to Save a Child: Bridging the Gap through Social Context

REDUCTION OF RACIAL DISPARITIES IN LOW BIRTH WEIGHT IN THE CONTEXT OF EDUCATION, EMPLOYMENT AND EQUAL ACCESS TO CARE: AN EXAMPLE IN THE U.S. MILITARY

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BACKGROUND: Despite many studies investigating why low birth weights and infant mortality are so much higher among African American infants than white infants, the causes are not well understood. The military is one of the only locations in U.S. society where African Americans not only have equal access to high-quality healthcare, but also where economic and social racial inequality is substantially lessened.

STUDY QUESTIONS: Is military service associated with lessened prevalence of very low infant birth weights (<1500 grams) for black women?

METHODS: Our study design compares infant birth outcomes across black civilian and military women and assesses how predictors operate differently by military-civilian status. We use 1996-2005 PRAMS data and obtained special permission to flag all births linked to military hospitals in order to identify military families. Our analysis employs bivariate and multivariate logistic regression methods accounting for complex survey design. The main study limitation is that the PRAMS data does not differentiate births among military personnel vs. spouses or daughters of military personnel. We reduce this measurement error by excluding mothers who had no health insurance, were < 17 years old, and had < a high school degree (all characteristics of military personnel) which will likely underestimate rather than overestimate our results.

RESULTS: We compared 4,267 military mothers and 241,978 civilian mothers. Black military mothers compared to black civilian mothers experience earlier prenatal care (8 vs. 11 weeks, respectively), are more likely to intend their pregnancy (88 vs. 77%), report fewer total stressful life events (2.6 vs. 3.1 events), and have healthier lifestyles (23 vs 31% binge drink and 14 vs. 23% ever smoked).

Even after controlling for these variables (above) and many other socioeconomic, demographic, and health characteristics, regression results show that military blacks are still 37% (OR=0.63 95%CI 0.46-0.88)less likely than civilian blacks to have babies who are very low birth weight (<1500 grams).

CONCLUSIONS: Military service is associated with healthier pre-pregnancy and prenatal environments for black mothers and their children. After taking into account the improved military context, there is still a significant unexplained reduction of very low birth weight outcomes for military women.

PUBLIC HEALTH IMPLICATIONS: Closing the racial birth weight/prematurity gap has been identified as a primary public health objective. An institutional setting with equitable access to healthcare and improved racial conditions may contribute to superior infant health outcomes.

Concurrent Session C4

It Takes a Village to Save a Child: Bridging the Gap through Social Context

PATERNITY STATUS AND DISPARITIES IN INFANT MORTALITY BEFORE AND AFTER WELFARE REFORMS IN WISCONSIN: ANALYSIS OF DATA FROM THE CITY OF MILWAUKEE

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BACKGROUND: Wisconsin ranks high on many health and socioeconomic indicators but continues to have one of the worst African-American infant mortality in the nation. Although many studies have examined the relationship between maternal factors and birth outcomes, paternal factors have received little attention. The 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) introduced strong child support enforcement laws and streamlined paternity establishment and reporting.

STUDY QUESTIONS: To examine: 1) trends in infant mortality before (Pre-PRWORA 1993-1998)and after (Post-PRWORA 1999-2004) welfare reform changes and 2) whether welfare reform changes in paternity status are associated with racial disparities in infant mortality in the City of Milwaukee, Wisconsin. We hypothesized that more women would report establishment of paternity after than before PRWORA, and that establishment of paternity would be associated with decreased infant mortality in the city of Milwaukee.

METHODS: Retrospective analysis of 130,004 linked birth/infant death certificate singleton data from the city of Milwaukee, WI from 1993 to 2004. Bivariate and multivariate logistic regression models were estimated for pre-PRWORA (n=65,874) and post-PRWORA (n=64,130) to examine the effect of paternity status on infant mortality. Paternity status, the main independent variable, was categorized as: married with father on record (MFR), unmarried with paternity statement (UPS), unmarried with court-established paternity (UCEP), and unmarried with no father on record (UNFR). Other covariates included race, maternal education, maternal age, smoking, prenatal care, parity, maternal conditions (hypertension, diabetes, anemia, history of preterm birth) and infant characteristics (prematurity and low birthweight).

RESULTS: Between 1993-98 and 1999-04, the proportion of births increased among UPS (5% vs 15%) and UCEP (12% to 19%) but declined for UNFR (42% to 27%). During this period, infant mortality rate declined for whites (6.5/1000 vs. 5.6) and Hispanics (9.1/1000 vs. 7.4) but not for blacks (15.3 vs. 15.4). After adjustment, racial disparities in infant mortality disappeared during pre-PRWORA but persisted for black women (OR=1.36 [1.04-1.78]) during post-PRWORA period. Infant mortality was significantly lower among UPS and UCEP before and after PRWORA, with UCEP having the most notable protective effect. Prenatal smoking and diabetes were significantly associated with IM in post-PRWORA but not pre-PRWORA period.

CONCLUSIONS: Paternal involvement, as measured by MFR, UPS or UCEP, is protective against infant mortality, with the protective effect stronger in the post-PRWORA period. NFR doubled the odds of infant mortality in pre and post-PRWORA period, albeit a slight decline in the later period.

PUBLIC HEALTH IMPLICATIONS: Policies and programs that promote or increase paternal involvement, such as fatherhood initiatives, job training, and child support may reduce adverse birth outcomes. A better understanding of how paternal factors influence birth outcomes is needed.

Concurrent Session C4

It Takes a Village to Save a Child: Bridging the Gap through Social Context

EXPOSURE TO PERCEIVED RACISM IN THE PUBLIC SETTING AND BIRTH OUTCOME AMONG AFRICAN-AMERICAN WOMEN

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BACKGROUND: An expanding literature shows that African-American women's exposure to interpersonal racial discrimination is a chronic stressor associated with poor pregnancy outcome.

STUDY QUESTIONS: To what extent do African-American women who deliver preterm (<37 wks), low birth weight (< 2500g, LBW) infants experience perceived racial discrimination in the public settings compared with their peers who deliver term, non-LBW birth weight infants?

METHODS: A case control study was conducted among African-American women delivering at two tertiary-care hospitals in Chicago. Women who delivered a singleton preterm, LBW infant were defined as cases. Women who delivered term, non-LBW infants were classified as controls. The Perceived Racism Scale (PRS) questionnaire was administered to cases (n=159) and controls (n=109) between 2001 and 2005. The PRS included a subscale for exposure to racial discrimination in public settings; it included questions on both overt experiences such as police harassment and more subtle experiences such as encountering Whites who were surprised at minority individuals' intelligence. Responses were dichotomized after data collection to exposed ("a few times per year", "few times a month", "at least once a week", or "nearly every day") and unexposed ("never" or "less than once per year"). A score was generated for the frequency of occurrence of each item and was totaled across all items.

RESULTS: Cases and controls were similar with respect to maternal age, education, martial status, parity, prenatal care initiation, smoking status and alcohol use. Cases were two times more likely to report being exposed to three or more experiences of racism over their lifetime and within the past year (OR=2.0, 95% CI=1.1, 3.9 and OR=2.1, 95% CI=1.0, 4.5, respectively). When the frequency of occurrence of these experiences was totaled, cases had a significantly higher score than controls for lifetime and past year exposure (p=0.01 for both).

CONCLUSIONS: African-American women's chronic exposure to perceived interpersonal racism in public settings is associated with preterm, LBW.

PUBLIC HEALTH IMPLICATIONS: A broad public health paradigm is warranted to reduce racial disparities in birth outcome. It should take into account the heterogeneity of experiences in public settings among African-American women, especially as it relates to chronic exposure to interpersonal racial discrimination.

Concurrent Session C5

Definitions, Politics and Interventions of Family Planning

INTERGENERATIONAL CYCLE OF TEEN PREGNANCY: HOW WE CAN HELP FAMILIES BREAK FREE

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BACKGROUND: Research has found that teenage pregnancy is cyclical; children born to teenage mothers are at a substantially greater risk of also having teenage births. However, there are families who break this cycle suggesting that there are opportunities or experiences that reduce the likelihood that children of teen mothers will also become teen mothers.

STUDY QUESTIONS: In this paper, we explore how school retention and educational attainment may help mothers and children extricate themselves from the intergenerational cycle of teen births and delay childbearing until reaching adulthood.

METHODS: The data for this project come from the longitudinal and intergenerational Panel Study of Income Dynamics (PSID). The sample for this project includes 7,600 pairs of mothers and children, restricted to pairs where children were at least 20 years old by the 2005 interview or had already reported a teen birth. Analyses explored how age at first births for parents and their children varied by educational attainment.

RESULTS: There was support for the cyclical nature of teenage pregnancy; children born to teenage mothers had a significantly greater risk of also reporting teenage pregnancies. Logistic regression models, with demographic controls and sampling weights, showed that educational attainment helped families break the cycle of teen births. Women who returned to school after a teen birth substantially reduced the risk that their children would also have a teen birth. Children with mothers that attended some college after teen births were 25% less likely to have teen births than children with mothers who did not return to school after a teen birth.

CONCLUSIONS: These findings suggest that educational attainment after teenage pregnancy can break the intergenerational cycle of teenage pregnancy. Additional education for teenage mothers, specifically college, has lasting effects on reducing the likelihood that their children will also have teenage pregnancies.

PUBLIC HEALTH IMPLICATIONS: This project unveils a mechanism to help break the cycle of teen pregnancy within families. By focusing our efforts toward improving school retention and educational attainment even after pregnancy, we can have a meaningful impact on reducing the probability that children of teen mothers will also become teen mothers.

Concurrent Session C5

Definitions, Politics and Interventions of Family Planning

THE TITLE X FAMILY PLANNING PROGRAM: A HISTORICAL EXAMINATION OF THE POLITICAL CHALLENGES AND SUPPORT BY PRESIDENTIAL ADMINISTRATION, 1970-2008

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BACKGROUND: The U.S. has the highest rates of unintended pregnancy (UP) of all industrialized countries. More than 17 million women are in need of publicly-funded contraceptives services/supplies. Title X, enacted in 1970, is the only federal policy devoted solely to providing voluntary and confidential family planning services to all women, regardless of age or economic status. Title X's critical role includes serving as a safety net provider, preventing UP and improving birth outcomes. However, this policy continues to face political challenges, and it is unknown how these challenges have differed by presidential administration.

STUDY QUESTIONS: To examine the political challenges and support, by presidential administration, that Title X has encountered since enactment.

METHODS: Secondary data sources, The Congressional Record and LexisNexis® Congressional, were used to retrieve federal bills (N=293) and compile Title X's legislative history (LH) (1970-2008). A thematic analysis was conducted on Title X's LH; reliability of coding and inter-rater reliability were established. Emerging themes were sorted by administration. A systematic search utilizing multiple search terms and sources produced a comprehensive LH; however, the inadvertent exclusion of bills due to the voluminous nature of the search and the secondary sources serve as a limitation.

RESULTS: Seven broad categories emerged: Administration; Appropriation; Requirements of Funds/Services; Restrictions of Funds/Services; Related Legislation; Related Policies; and Technical Amendments. Bills in each category were found in all administrations, however, characteristic proposals were revealed: establishing global and national institutes (Nixon); the first emergent of abortion bills (Ford); demonstration projects for infertility services (Carter); the first emergent of repeal bills (Reagan); application of Title X restrictions to global family planning funding (G.H.W. Bush); encouraging family participation (Clinton); and counseling to minors on how to resist sexual activities/coercion (G.W. Bush).

CONCLUSIONS: The variety of proposed bills contained language that challenged and supported Title X; characteristic proposals were found in each presidential administration.

PUBLIC HEALTH IMPLICATIONS: The expansive LH further corroborates the many political, social and economic challenges that Title X has confronted throughout the administrations. Title X is a critical part of the public health infrastructure and consistent political support/policy is needed to improve reproductive health outcomes.

Concurrent Session C5

Definitions, Politics and Interventions of Family Planning

FLORIDA HEALTHY START SERVICES AND EFFECTIVE POSTPARTUM CONTRACEPTIVE USE

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BACKGROUND: Florida's Healthy Start program provides care coordination and support services to high risk pregnant women and infants to improve pregnancy outcomes. Past evaluations have focused on infant mortality, low birthweight and prematurity which are complex outcomes not readily changed by program efforts. Our evaluation efforts have shifted to program-related behaviors and experiences that contribute to these outcomes, for both mother and infant.

STUDY QUESTIONS: What is the association of Florida Healthy Start (HS) prenatal services and postpartum use of an effective contraceptive method?

METHODS: A cross-sectional study was conducted using Florida PRAMS data merged with birth certificate and HS prenatal screening/services data for 2000-2005. The evaluation was limited to women who had not had a hysterectomy, were not currently pregnant, did not want to be pregnant and had a Healthy Start prenatal screen. All pregnant women by Florida law are to be offered screening prenatally. For this study, HS participants were women who received HS assessment and care coordination services. Comparison women were those who did not receive HS services. The study outcome was measured using PRAMS mothers who reported using an effective postpartum contraceptive method. Weighted logistic regression was used to adjust for potential confounders: race/ethnicity, foreign-born, father's name on birth certificate, Medicaid, use of birth control before pregnancy, stressful events, parity, birthweight, and other HS prenatal screen risk factors.

RESULTS: This study included 6,573 PRAMS respondents: 2,067 HS participants and 4,506 non-participants. The crude and adjusted odds ratios for effective contraceptive use by HS participants were 0.77 (95% CL: 0.63-0.93) and 0.90 (95% CL: 0.72-1.11), respectively. This adjusted odds ratio for HS does not differ for women who did or did not use contraception prior to pregnancy. These findings also did not change with prenatal counseling regarding contraception.

CONCLUSIONS: Florida Healthy Start prenatal services are not associated with the use of effective postpartum contraception even when prior contraceptive use and prenatal education on contraception are considered.

PUBLIC HEALTH IMPLICATIONS: Florida Healthy Start Program needs to review their intent and efforts in promoting the use of postpartum contraception.

Concurrent Session C5

Definitions, Politics and Interventions of Family Planning

EXPANDING UNDERSTANDING OF UNINTENDED PREGNANCY: THE LONDON MEASURE OF UNPLANNED PREGNANCY IN CALIFORNIA

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BACKGROUND: Women giving birth whose pregnancies were unintended often have elevated prenatal risk behaviors resulting in poor pregnancy outcomes. Yet unintendedness remains high, around 50%. Surveys have generally asked recent mothers about wanting a pregnancy at that time. The London Measure of Unplanned Pregnancy (LMUP) offers a more complex portrayal of feelings and behaviors about getting pregnant, including intention, partner influences, contraceptive use, and pre-conceptual preparations, along with desire and timing. Although initially validated in Britain, it has not been used in any population-based survey in the U.S. to our knowledge.

STUDY QUESTIONS: How can the LMUP advance our understanding of pregnancy intent?

METHODS: In 2008, the LMUP was incorporated into California's Maternal and Infant Health Assessment (MIHA), an annual survey of postpartum women modeled after PRAMS. Accounting for the complex survey design, LMUP questions were examined independently, and then scored as recommended into planned (scores of 10-12), ambivalent (4-9), and unplanned (0-3).

RESULTS: LMUP scoring categorized 52% of pregnancies as planned, 41% as ambivalent, and 7% as unplanned (Cronbach's alpha = 0.8). Just before pregnancy, 57% of the 3035 respondents intended to get pregnant, 13% were unsure, and 30% did not intend. Among intending women, 89%-96% selected the expected response options on the other LMUP items. Unintending women responded much less consistently, with 44% reporting mixed feelings about having wanted a baby; 63% having discussed but not agreed on pregnancy with their partners; 59% feeling that the pregnancy happened at an OK but not quite right time; 52% reporting no preparation behaviors; and 59% not using contraception. Further validation across demographic groups and among related measures will strengthen this work.

CONCLUSIONS: The LMUP was consistent with past measures of intent, scoring about half the pregnancies as planned, while offering a more complex distinction among women who planned, were ambivalent, and who did not plan the pregnancy.

PUBLIC HEALTH IMPLICATIONS: The LMUP's more complex portrayal of pregnancy planning may better identify women who are ambivalent about getting pregnant or are not planning a pregnancy. These women may benefit from preconception health messages that focus on their health, as opposed to healthy pregnancies.

Concurrent Session C6

No Time Llike the Present: Health Behaviors and Services Received during Pregnancy

SELF-REPORTED HIV TESTING DURING PREGNANCY IN 28 STATES, PREGNANCY RISK ASSESSMENT MONITORING SYSTEM (PRAMS), 2004-2006

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BACKGROUND: Universal HIV screening of women during pregnancy has been advocated by the Centers for Disease Control and Prevention, the American College of Obstetricians and Gynecologists, the American Academy of Pediatrics and others for over a decade. However, according to a 2002 national survey, 31% of women reported not having an HIV test during their most recent pregnancy.

STUDY QUESTIONS: What is the prevalence of HIV testing during pregnancy? What factors are associated with testing?

METHODS: Data from the 2004-2006 Pregnancy Risk Assessment Monitoring System (PRAMS) were used to examine whether women with a recent birth reported having an HIV test during pregnancy. SUDAAN was used to analyze data from 28 states with an overall weighted response rate > 70% (n=121,782). Descriptive statistics and multivariate logistic regression were used to explore associations between HIV testing experience and demographic factors.

RESULTS: Overall, 76.8% (95% CI: 76.4-77.1) of women reported having an HIV test during pregnancy, ranging from 44.8% (95% CI: 43.2-46.3) (Utah) to 95.5% (95% CI: 94.6-96.5) (New York state [excludes NYC]). In logistic regression analysis, state of residence was a significant predictor of HIV testing. Women < 25 years old were more likely to report testing than women =35 (OR=1.29, 95% CI: 1.18-1.40). White women were less likely (OR=0.82, 95% CI: 0.76-0.89) and black women were more likely (OR=2.01, 95% CI: 1.80-2.26) to report testing than those of other races. Women with >12 years of education were less likely than women with <12 years of education to report testing (OR=0.85, 95% CI: 0.77-0.93). Women not on Medicaid were less likely than Medicaid recipients to report testing (OR=0.78, 95% CI: 0.73-0.83).

CONCLUSIONS: Overall, approximately 75% of pregnant women reported being tested for HIV during pregnancy during 2004-2006; however, testing practices varied widely among states. Differences in testing by demographic characteristics may indicate that perinatal providers screen for HIV based on perceived risk rather than recommended universal screening.

PUBLIC HEALTH IMPLICATIONS: During 2004-2006, nearly 25% of women reported not receiving an HIV test during pregnancy; therefore, increased education efforts among prenatal care providers on implementing universal HIV testing guidelines are needed. PRAMS data can be used to evaluate the implementation of these guidelines.

Concurrent Session C6

No Time Like like the Present: Health Behaviors and Services Received during Pregnancy

PROVIDER ADVICE TO WOMEN ON WEIGHT GAIN DURING PREGNANCY

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BACKGROUND: Weight gain during pregnancy can have a significant impact on fetal growth and on postpartum weight retention. Currently, more women gain above the Institute of Medicine's pregnancy weight gain recommendations than within them. Prenatal care providers can influence women's behaviors by advising on weight gain during pregnancy.

STUDY QUESTIONS: What percent of women report receiving advice on weight gain during pregnancy from their prenatal care providers, and what are the predictors of receiving that advice?

METHODS: We analyzed 2004-2006 data from seven states in the Pregnancy Risk Assessment Surveillance System (PRAMS) that had a weighted response rate of >70% and a survey that included the question on provider advice on weight gain during pregnancy. Data were weighted to represent women delivering live births in each respective state. Independent predictors of women reporting receiving advice on pregnancy weight gain were identified through multiple variable logistic regression with backward elimination. Predictors included age, race, education, marital status, WIC status, Medicaid status, parity, smoking during pregnancy, drinking during pregnancy, pre-existing diabetes, hypertension during pregnancy, total weight gain during pregnancy and infant birth weight.

RESULTS: 77% of women reported receiving provider advice about weight gain during pregnancy. Women who were WIC participants (OR 1.34, CI=1.11-1.62), and experienced hypertension (OR=1.67, CI=1.17-2.39) were significantly more likely to receive provider advice. Women with a previous live birth of one to two infants (OR=0.57, CI 0.48-0.68), or 3 or more infants (OR=0.46, CI=0.36-0.59), and those who received prenatal care after the first trimester (OR=0.67, CI=0.54-0.84) were significantly less likely to receive provider advice, as were women who gained more than 40lbs during pregnancy (OR=0.81, CI=0.68-0.97).

CONCLUSIONS: The results support previous findings that provider advice on prenatal weight gain influences total weight gain. In addition, it suggests that women in special need of advice, those in the WIC program, are more likely to receive it than women not in WIC

PUBLIC HEALTH IMPLICATIONS: Prenatal care providers need to know that their advice makes a difference and women in their second or higher order pregnancies still need to receive advice on weight gain during pregnancy.

Concurrent Session C6

No Time Likelike the Present: Health Behaviors and Services Received during Pregnancy

MATERNAL CHARACTERISTICS THAT INFLUENCE DRINKING CESSATION UPON BECOMING PREGNANT

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BACKGROUND: Fetal alcohol syndrome (FAS) and fetal alcohol spectrum disorders (FASD) are among the most common birth defects, and are completely preventable. Racial disparities in FAS rates exist and evidence suggests that these disparities are partly due to significant racial differences in pregnancy-related drinking cessation.

STUDY QUESTIONS: What characteristics influence drinking cessation upon becoming pregnant for women of different race/ethnicities?

METHODS: This study involved secondary analysis of 2001-2006 PRAMS data from 26 states and New York City. Subjects were women aged 18-44 years who reported having any alcohol in the three months before pregnancy and whose reported race was White, non-Hispanic (White), Black, non-Hispanic (Black), Hispanic, Asian/Pacific Islander (AP), or American Indian/Alaska Native (AI/AN; N = 58,061). Stratifying by race, logistic regression examined the contribution of preconception drink level, marital status, age, education, smoking status, intention, WIC status, prenatal care, advice on alcohol use, stress, and physical abuse to the likelihood of drinking cessation.

RESULTS: For AP women, those who were unmarried and low level drinkers were the most likely to quit drinking. Within the remaining population groups, there was a decreased likelihood of drinking cessation as women became older and this effect was the strongest among AI/AN women. White and Black smokers had a decreased likelihood of drinking cessation, but Black smokers were the least likely. Interestingly, among Black women, an unintended pregnancy increased the likelihood of drinking cessation (OR = 1.45; 1.11, 1.88) while among AI/AN women, an unintended pregnancy decreased the likelihood (OR = 0.48; 0.25, 0.90). Receiving WIC assistance increased the likelihood of drinking cessation among White women (OR = 1.28; 1.09, 1.49) but decreased the likelihood among Hispanic women (OR = 0.61; 0.46, 0.81). Finally, compared to non-victims, physical abuse victims were 28% less likely to quit drinking but only among White women (OR = 0.72; 0.54, 0.97).

CONCLUSIONS: Racial disparities in drinking cessation are partly explained by the contributions of differing maternal characteristics to the likelihood of cessation within each racial category.

PUBLIC HEALTH IMPLICATIONS: Public health efforts targeted towards different race/ethnicities are needed to prevent alcohol-exposed pregnancies.

Concurrent Session C7

Serving It Up: The "N" in CHSCN (Children with Special Health Care Needs)

WHAT FACTORS ARE ASSOCIATED WITH STATE PERFORMANCE ON PROVISION OF TRANSITION SERVICES TO CHILDREN WITH SPECIAL HEALTH CARE NEEDS?

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BACKGROUND: Nearly 90% of children with special health care needs (CSHCN) survive to adulthood. CSHCN often have on-going health needs and higher lifetime medical expenditures compared to non-CSHCN. Transition services are critical for assuring continued receipt of medically and developmentally appropriate health care.

STUDY QUESTIONS: To what extent are individual, condition-related, and system-related characteristics associated with state performance in the provision of transition services to CSHCN?

METHODS: Descriptive, bivariate and multivariable analyses of data were conducted on 16,876 children, ages 12-17 years, from the 2005-06 National Survey of CSHCN. Polytomous logistic regression was used to compare characteristics of CSHCN residing within high, medium and low performance states, with low performance states as the reference group. Analyses were carried out using SAS-callable SUDAAN to appropriately weight estimates and adjust for the complex sampling design.

RESULTS: Compared to non-Hispanic white CSHCN, Hispanic (AOR 0.25, 95% CI: 0.17, 0.37) and non-Hispanic black (AOR 0.44, 95% CI: 0.30, 0.62) CSHCN were less likely to reside in a high performance than a low performance state. Compared to CSHCN having a medical home or adequate insurance coverage, CSHCN not having a medical home or adequate insurance coverage were less likely to reside in a high performance than a low performance state (AOR 0.73, 95% CI: 0.57, 0.95; AOR 0.73, 95% CI: 0.58, 0.93, respectively). Compared to non-Hispanic white CSHCN, Hispanic CSHCN also were less likely to reside in a medium performance than a low performance state (AOR 0.67, 95% CI: 0.50, 0.90). Compared to those who lived in two-parent biological families, CSHCN who lived in two-parent step families were less likely to reside in a medium performance than a low performance state (AOR 0.64, 95%CI: 0.48, 0.87).

CONCLUSIONS: Race/ethnicity, having a medical home, and adequate insurance coverage were important factors in a state's performance on provision of transition services to CSHCN. A better understanding of underlying inequities in income, health care access and institutional racism within the systems of care for CSHCN is needed.

PUBLIC HEALTH IMPLICATIONS: Efforts to support the integration of system-level factors, such as a medical home and attaining and maintaining adequate insurance, are likely to help states improve performance on providing transition services.

Concurrent Session C7

Serving It Up: The "N" in CHSCN (Children with Special Health Care Needs)

THE IMPACT OF CO-MORBID CONGENITAL ANOMALIES ON THE TIMELINESS OF HEARING SCREENING AND DIAGNOSIS FOR INFANTS WITH HEARING LOSS IN VIRGINIA, 2002-2006

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BACKGROUND: In the U.S., only about half of infants who do not pass the newborn hearing screening receive appropriate and timely diagnostic services and, when indicated, referral to early intervention (White, 2004). Although 30-40% of infants born with hearing loss also have additional congenital anomalies, very little is known about the effects of these conditions on follow-up and treatment for the hearing loss.

STUDY QUESTIONS: To what extent do co-morbid congenital anomalies affect the timeliness of screening and diagnosis of children with hearing loss in Virginia, 2002-2006?

METHODS: Virginia Early Hearing Detection and Intervention (VEHDI) data were used to identify children with confirmed hearing loss born between 2002-2006 (n=602). These data were deterministically linked to Virginia birth defects registry (VaCARES) data (n=37,922) and Virginia birth certificates (n=514,588) for the same time period. Unlinked records were verified with a manual record search. Screening and diagnosis delays were considered timely if they met CDC national goals of an initial hearing screen by 1 month and a confirmatory diagnosis by 3 months of age.

RESULTS: Co-morbid congenital anomalies were present in 30.2% of children with hearing loss. The overall hearing loss rate among children with congenital anomalies was 4.8 per 1000, and was highest in children with 3 or more anomalies (15.5 per 1,000). Children with 3+ congenital anomalies were at increased risk of not getting their initial screen by 1 month of age (RR=1.5; 95%CI: 1.2-2.1) and not getting a confirmatory diagnosis by 3 months of age (RR=1.24; 95%CI: 1.1-1.4). Age, race/ethnicity, insurance status, and maternal education were not associated with timeliness of hearing screening or diagnosis for children with co-morbid congenital anomalies.

CONCLUSIONS: Although infants with multiple congenital anomalies are faced with a challenging set of health issues, it is important to ensure that screening, diagnosis, and treatment of hearing loss are integrated into the infants' medical care as early as possible.

Concurrent Session D1

Taking a Bite Out of Women's Oral Health

RACIAL DISPARITIES IN MATERNAL ORAL HEALTH EXPERIENCES IN 10 STATES, PREGNANCY RISK ASSESSMENT MONITORING SYSTEM, 2004-2006

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BACKGROUND: There are significant racial/ethnic disparities in the oral health status of U.S. children and adults, but less is known about the oral health experiences of women in the peripartum period. As maternal periodontal disease has been implicated as a possible risk factor for preterm birth and since preterm birth rates vary significantly by race/ethnicity, population-based studies of maternal oral health experiences are needed.

STUDY QUESTIONS: The aim of this study is to describe and assess racial/ethnic differences in women's oral health experiences during their most recent pregnancy.

METHODS: We analyzed 2004-06 data from the CDC Pregnancy Risk Assessment Monitoring System (PRAMS), a population-based surveillance system that collects data on pregnancy and postpartum experiences of mothers who have recently delivered a live infant. Ten states included in the analysis had a >70% weighted response rate and three standard questions pertaining to oral health. We used weighted percentages/standard errors and multivariate logistic regression, controlling for selected descriptive characteristics.

RESULTS: Only 38% of all women (n=36,850) received dental counseling during pregnancy. Non-white women, with lower incomes, less education, inadequate prenatal care, who received Medicaid or were uninsured prior to pregnancy were more likely to have a teeth problem during pregnancy ($p<0.0001$), less likely to seek dental care ($p<0.0001$), and less likely to ever have had a teeth cleaning ($p<0.0001$). In multivariate analysis, compared to white women, Hispanic women were less likely to have a teeth problem (OR 0.78, CI 0.65-0.93). Black and Hispanic women were less likely to seek dental care during pregnancy (OR 0.85, CI 0.76-0.97; OR 0.80, CI 0.67-0.96) and were also less likely to ever have had a teeth cleaning (OR 0.60, CI 0.49-0.73; OR 0.35, CI 0.28-0.44) when compared to white women.

CONCLUSIONS: Significant racial/ethnic disparities in maternal oral health experiences exist. Most women are not offered dental counseling during pregnancy.

PUBLIC HEALTH IMPLICATIONS: Given the possible increased risk of preterm birth due to maternal periodontal disease, establishing and maintaining good oral health should be an integral component of preconception and peripartum care for all women, especially among minority women at highest risk for preterm birth.

Concurrent Session D1

Taking a Bite Out of Women's Oral Health

RISK FACTORS FOR INSUFFICIENT ORAL HEALTH CARE DURING PREGNANCY

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BACKGROUND: The literature over the past decade has emphasized the importance of oral health during pregnancy, not only for potential risks for poor pregnancy outcomes, but also for the long-term health of the woman and her children. Pregnant women are at higher risk for gingivitis and pregnancy granulomas, two precursors to periodontitis. Periodontal infections have been associated with pregnancy outcomes and birth outcomes, as well as with systemic health. Dental caries is another oral infection that is highly transmissible from mother to infant. Control of oral diseases in pregnant women has the potential to improve not only the oral health of the women, but also of their children. Pregnancy is an ideal time for appropriate referrals for oral health services. Little is known about the current rates of dental care during pregnancy and reasons for lack of care.

STUDY QUESTIONS: What are the current rates of self-reported dental problems and dental care during pregnancy among a large, socioeconomically and racial/ethnically diverse population-based sample of women?

What are the characteristics of women at highest risk of inadequate oral health care during pregnancy?

What are the barriers to appropriate use of dental care during pregnancy, among women overall, and among key subgroups?

METHODS: Using self-reports from a population-based survey of postpartum women in California during 2002-2007, prevalence rates of dental problems during pregnancy and non-receipt of dental care were calculated, overall and among subgroups. Unadjusted and adjusted logistic regression analyses with 95% confidence intervals were conducted to determine which maternal characteristics were significantly related to lack of receipt of dental care, first among all women and then among those who reported having a dental problem. Only variables which were significant in the unadjusted analyses were included in the adjusted models. Finally, women's main reasons for not receiving dental care were examined overall and by maternal characteristics. Chi-square tests were used to examine the association between each characteristic and the reported reason for not receiving dental care.

RESULTS: Overall, 52.3% of women reported a dental problem during pregnancy. Nearly 66% of all women had no dental visit during pregnancy, with 62% of women reporting a dental problem not receiving care. While women who are typically considered disadvantaged were more likely to lack dental care during pregnancy, over 40% of women with college educations or with the highest incomes also reported lack of care. After adjustment for all variables in the logistic regression model, factors associated with non-receipt of care included young age, non-White race/ethnicity, lower education, non-private prenatal insurance, lower income, non-English language, and lack of a regular source of prepregnancy medical care. The primary reason reported for non-receipt of dental care was lack of perceived need (38%), followed by financial barriers (20%); 14 % of women stated they thought it was unsafe to go to the dentist during pregnancy. Less-educated, lower-income, Medi-Cal-covered, unmarried women were more likely to face financial barriers, while college-educated, higher-income, privately-insured, married women were somewhat more likely to report attitudinal barriers and lack of perceived need for care.

CONCLUSIONS: A majority of pregnant women delivering in California, even those experiencing dental problems, receive insufficient dental care. Risks are elevated not only among poorest and least educated mothers, but also among those with moderate incomes or some college education. Efforts are needed to widely promote the importance of at least one dental visit during pregnancy, or more if the woman requires follow-up, and to remove financial barriers to oral health care during pregnancy.

PUBLIC HEALTH IMPLICATIONS: Oral health care should be a standard component of prenatal health care, and all women should receive at least one preventive dental visit during pregnancy, even if they do not have a dental problem. Results of this study can be used to guide programmatic and policy efforts to elevate oral health to the same level of importance as general health, by changing perceptions of the public, policymakers, and health providers. Results can also be used to educate policy-makers about existing financial barriers to dental care and ensure that current benefits are not removed. Given the connection between oral health and systemic health overall, and possible associations with pregnancy and birth outcomes, a stronger collaborative effort must be made between prenatal and dental providers, as well as policymakers, to ensure that all pregnant women receive the oral health care they need during their pregnancies.

Concurrent Session D1

Taking a Bite Out of Women's Oral Health

ACCESS TO PREVENTIVE DENTAL CARE BY PREGNANT MEDICAID RECIPIENTS, IOWA 2005-2006

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BACKGROUND: Pregnant women are at increased risk for periodontal disease. Periodontal disease has been associated with increased risk of premature birth. Because preventive dental care (PDC) can reduce periodontal disease, all pregnant women should receive PDC. Yet, the reported prevalence of pregnant women who obtain PDC during pregnancy varies from 23 to 58 percent. Its prevalence is disproportionately lower among low-income women. Little is known about access to PDC during pregnancy among Iowan women covered by Medicaid.

STUDY QUESTIONS: What is the prevalence and what factors are associated with PDC receipt among pregnant Medicaid recipients in Iowa?

METHODS: We examined live births from the matched Medicaid claims/birth certificate file for 2005-2006 (n=26,163). The linked file match rate was 96%. Receipt of PDC care was measured by Medicaid paid claims. We examined the PDC receipt by maternal characteristics (e.g. age, race/ethnicity, residence, educational level) and adequacy of prenatal care participation (Kotelchuck Index) using birth certificate information. We used SAS 9.1 to conduct descriptive, bivariate, and multivariable analyses.

RESULTS: Overall, 13.1% of pregnant Medicaid recipients had at least one paid claim for PDC during their pregnancies. Receipt of PDC did not differ by age. Compared to non-Hispanic (NH) whites, NH Blacks (AOR 1.7, 95%CI: 1.4, 2.0) and Hispanics (AOR 2.7, 95%CI: 2.3, 3.2) were less likely to receive PDC. Compared to women with more that 12 years of education, women with less than 12 years of education were less likely to receive PDC (AOR 1.4, 95% CI:1.3, 1.6). Women who lived in metropolitan statistical areas (not central cites), were more likely to receive PDC than women who lived in other geographical areas (AOR .08, 95%CI: 0.7, 0.9). Women who received inadequate prenatal care were less likely to receive PDC (AOR 1.4, 95%CI: 1.3, 1.6) compared to women who obtained adequate.

CONCLUSIONS: The prevalence of PDC as reported by Medicaid claims was low among pregnant women, regardless of maternal characteristics and PNC access.

PUBLIC HEALTH IMPLICATIONS: An assessment of the barriers and issues preventing pregnant Medicaid recipients in Iowa from receiving PDC is needed to define future efforts to promote and deliver PDC to pregnant Medicaid women.

Concurrent Session D1

Taking a Bite Out of Women's Oral Health

GEOGRAPHIC DIFFERENCES IN PREVENTIVE DENTAL CLEANING AMONG PREGNANT WOMEN IN SOUTH CAROLINA, 2004-2007

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BACKGROUND: The importance of oral health as part of overall health and well being has led to an increased interest in the role of maternal oral health and pregnancy outcomes. Accumulating evidence suggest poor oral health before and during pregnancy may associated with adverse pregnancy outcomes for both mother's and infants. Preventive dental cleaning can improve the overall health of a pregnant woman and may reduce the risk of adverse pregnancy outcomes. Historically, rural populations face many barriers in accessing dental health care. The extent to which pregnant women residing in rural area receive preventive dental cleaning has not been studied.

STUDY QUESTIONS: To determine the extent to which pregnant women residing in rural areas receive preventive dental cleanings and the extent to which this differs from pregnant women residing in urban areas.

METHODS: Bi-variate and multivariate logistic regression were used for analysis. Responses indicating a dental cleaning before, during and after pregnancy were used as separate dependent variables.

RESULTS: The proportion of rural respondents indicating a dental cleaning before (81.67%) and during pregnancy (29.24%) is significantly lower than urban women ($p<.05$). No significant differences were detected for dental cleaning after pregnancy. After adjusting for selected predisposing characteristics, enabling factors, and individual measures of need, residing in a rural area was not independently associated with having teeth cleaned before pregnancy (OR=.70, .48-1.03), during pregnancy (OR=.88, .63-1.21) or after pregnancy (OR=1.18, .87-1.61). Limitations of this study include the lack of a dental insurance variable in PRAMS, potential bias introduced by the self-report nature of PRAMS and lack of generalizability to pregnancies not ending in live births and to states other than South Carolina.

CONCLUSIONS: Despite the lack of significance after adjustment for other factors, a lower proportion of rural women indicated having a dental cleanings before and during pregnancy than urban pregnant women.

PUBLIC HEALTH IMPLICATIONS: Future activities to improve oral health among all reproductive age women, particularly those who are vulnerable, must contain mechanisms for educating women and their providers on the importance of oral health and distributing information on acceptable dental practice guidelines for pregnant women. In addition, policies promoting access to dental care among vulnerable populations should also be a key strategy in providing access to dental services for pregnant women.

Concurrent Session D2

Workshop: Preconception Health - From Concept to State Measurement

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DESCRIPTION OF WORKSHOP: Preconception health is recognized as crucial to improving reproductive health outcomes for women and infants. A growing body of evidence has emerged to support the implementation of public health initiatives and clinical practice recommendations. Increased pressure has been placed on public health and clinical programs to document services provided and to measure or evaluate policy and program impact. The current challenge is the lack of a comprehensive surveillance system to demonstrate the need and to monitor the impact.

For the past year, practitioners and epidemiologists from seven state public health agencies have worked collaboratively to propose preconception health indicators for use by state public health agencies and partners. This included defining preconception health and its respective domains; reviewing potential data sets; and proposing evaluating and selecting the initial indicators. Consistent advice was sought from a national panel of experts. The initial proposal includes 45 indicators in 10 domains: general health, chronic conditions, health care, infections, mental health, nutrition and physical activity, reproductive health, social determinants of health, and social/emotional health substance abuse.

Why propose state indicators now? First, state public health agencies are currently developing policies and programs to address preconception health. States need to able to assess preconception health among women in their state and to evaluate the impact of policies and programs. Second, current public health surveillance systems do provide state agencies with the opportunity to assess and monitor some preconception health issues. This information can be used to understand issues and promote awareness. Third, the importance of measuring preconception health issues needs to be raised with preconception health and public health surveillance leaders at a state and national level so that newer and better measures can be developed and promoted. This workshop provides the opportunity to learn about and discuss the new indicators and develop future plans.

JUSTIFICATION OF WORKSHOP:

- Continued efforts in infant mortality reduction and child health promotion must involve the new focus of improving the health of men and women during the reproductive years.
- Public health agencies need clear measures to develop, prioritize and evaluate preconception health initiatives and activities.
- New core state preconception health indicators should be developed and available by the time of the conference.
- Educate state and local practitioners about the new indicators.
- Broader discussion of these indicators and the large data effect required is necessary and essential to move policies and programs forward.
- Increase the knowledge and understanding of data sources that collect useful information.

BIOGRAPHICAL SKETCH OF PRIMARY PRESENTERS: Dr. William M. Sappenfield is the State MCH Epidemiologist and Chief of the Office of Surveillance, Evaluation and Epidemiology, Division of Family Health Services, Florida Department of Health. As both a pediatrician and an epidemiologist, Dr. Bill Sappenfield has more than 23 years of experience in epidemiological research and practice at a local, state and national level in maternal and child health. Dr. Sappenfield received his medical degree from Louisiana State University Health Sciences Center in New Orleans in 1980 and his masters of public health with emphasis in epidemiology from Harvard University in 1984. He completed his pediatric residency training at Vanderbilt University Medical Center in 1983 and his preventive medicine residency training at

the Centers for Disease Control and Prevention (CDC) in 1987. He also received applied epidemiology training through CDC's Epidemic Intelligence Service (EIS) program from 1984 to 1986.

Dr. Sappenfield has spent most of his career as a CDC epidemiologist working with state and local public health agencies to enhance their capacity to use epidemiology to improve the health of the women and children they serve. This includes being assigned to state public health agencies in Massachusetts, Mississippi and South Carolina, and working directly on assignment with City**M**at**CH**—a national public health organization working with MCH Leaders in urban public health agencies. Afterward, Dr. Sappenfield served four years as Team Leader of CDC's MCH Epidemiology Program where he was directly responsible for the national effort. For the last 4 years, Dr. Sappenfield has had lead responsibility for the Department's MCH epidemiology efforts including directing an office of five epidemiologists, working with programs across the Department, collaborating with state agencies, organizations, and universities; and assisting County Health Departments and community coalitions. Dr. Sappenfield also continues to serve as a consult to CDC's MCH Epidemiology Program.

Dr. Danielle Broussard earned a master of public health degree in epidemiology from the Rollins School of Public Health at Emory University in 1997 and pursued her interest in MCH by serving two years as the Program Coordinator for the Louisiana Pregnancy Risk Assessment Monitoring System. She broadened her focus to women's health issues through her roles as the Clinical Research Coordinator for Bone Health Research and Senior Program Coordinator for Women's Health and Sex/Gender-based Research at the Tulane Xavier Center of Excellence in Women's Health from 2001 to 2006. After earning a doctoral degree in Epidemiology with a focus in women's health from the University of Miami in 2006, she completed a year of postdoctoral research fellowship in MCH at the Tulane School of Public Health before entering Class 5 of the Council of State and Territorial Epidemiologists Applied Epidemiology Fellowship program during which she trained under the mentorship of Drs. Bill Sappenfield and Dave Goodman in MCH. Dr. Broussard has numerous presentations of her work as well as several published articles in the area of women's health, preconception health, and racial disparities in MCH to her credit.

LCDR Lauren Zapata received her MSPH in maternal and child health, and her PhD in behavioral sciences, from the College of Public Health, University of South Florida. After graduation, LCDR Zapata joined the Commissioned Corps of the United States Public Health Service as an Epidemic Intelligence Service officer placed in the Division of Reproductive Health. After completing the two-year applied epidemiology training program, LCDR Zapata stayed on with the Division of Reproductive Health where she currently works as a research scientist in the Fertility and Epidemiology Studies Team of the Women's Health and Fertility Branch. LCDR Zapata is committed to promoting the reproductive lives of women, maternal and child health, and ensuring optimal environments for children to thrive and develop.

Ms. Alvina Long Valentin has 16 years of public health nursing experience, clinic management and program development in the areas of women's health, pediatrics, adult medicine and home-based visiting in the U.S. and Guatemala. Her work includes experience in individual and group education and trainings. Ms. Long Valentin began her work in public health as a Peace Corps volunteer in the Community Health Program in Guatemala – focusing on outreach efforts in maternal and pediatric health in rural eastern Guatemala. She then returned to the US and studied nursing and public health at Johns Hopkins University. After an initial 2 years on an adult medicine floor, she worked as a Public Health Nurse for Arlington County, Virginia in maternity, family planning and pediatric clinics and in the home-based visiting program.

Ms. Long Valentin then returned to Guatemala where she worked as a public health project coordinator in a rural community in eastern Guatemala, overseeing community projects and public health trainings focusing on women, children and community health. She then served as the Diplomatic Mission Nurse for the U.S. Embassy in Guatemala where she coordinated health and safety initiatives for the mission and health care for U.S. families and Guatemalan employees. After her return to the U.S., Ms. Long Valentin was employed as the Nurse Administrator for the Spanish Catholic Center Medical Clinic in Silver Spring, MD where she oversaw the operations of an adult and pediatric medical clinic for uninsured, mainly immigrant patients. Since January 2007, Ms. Long Valentin has been with the Women's Health Branch at the NC Division of Public Health playing an active role in the coordination of the state's efforts in Preconception Health.

Concurrent Session D3

Exploring the Social Determinants of Child Health and Development

SOCIOECONOMIC STATUS, CHILD ENRICHMENT FACTORS, AND COGNITIVE DEFICIT AMONG PRESCHOOL-AGE CHILDREN: RESULTS FROM THE FOLLOW-UP OF GROWTH AND DEVELOPMENT EXPERIENCES STUDY

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BACKGROUND: Cognitive deficit is associated with poorer health and functioning throughout the lifespan and disproportionately affects children from lower socioeconomic status (SES) populations. Previous studies that found positive associations with child home enrichment generally had a limited distribution of SES.

STUDY QUESTIONS: We evaluated associations between cognitive deficit and SES and child enrichment in a population with a wide range of SES, particularly whether enrichment attenuates associations with SES.

METHODS: Children were sampled from a case-control study of small-for-gestational-age (SGA) conducted in a public hospital serving a low SES population (final n=197) and a private hospital serving a middle-to-high SES population (final n=244). SES (maternal education and income) and perinatal factors (SGA, maternal smoking and drinking) were obtained from maternal birth interview. Six child home enrichment factors (e.g. books in home) and preschool attendance were obtained from follow-up interview at age 4.5 years. Cognitive deficit was a score <=70 on the Differential Ability Scales, a standardized psychometric test administered at follow-up. SES and enrichment scores were created by combining individual factors. Analyses were adjusted for perinatal factors.

RESULTS: The percentages of children with cognitive deficit were 38.6% and 4.5% for children born at the public and private hospitals, respectively. Among children born at the public hospital, cognitive deficit was associated with low versus medium SES level (adjusted odds ratio (aOR)=3.1; 95% confidence interval =1.6-6.1), low versus medium enrichment level (aOR=2.0 [1.0-4.1]), and preschool attendance (aOR=0.3 [0.2-0.6]). Among children born at the private hospital, cognitive deficit was associated with medium versus high SES level (aOR=13.8 [2.6-71.9]), low versus medium enrichment level (aOR=5.6 [1.0-30.1]), and preschool attendance (aOR=0.1 [0.02-0.5]). Further adjustment for enrichment score and preschool attenuated the aORs for SES by 16% and 80% for children born at the public and private hospitals, respectively.

CONCLUSIONS: A child's individual SES was associated with cognitive deficit within advantaged and disadvantaged populations. Child enrichment was associated with lower odds of cognitive deficit and attenuated the SES influence.

PUBLIC HEALTH IMPLICATIONS: Health care providers should reinforce guidelines for home enrichment and refer children with delays to early intervention and education, particularly children from disadvantaged populations.

Concurrent Session D3

Exploring the Social Determinants of Child Health and Development

SOCIOECONOMIC STATUS AND MIDDLE CHILDHOOD HEALTH AND DEVELOPMENT: VARIATIONS BY SES MEASURE AND RACE

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BACKGROUND: In comparison to children from higher SES backgrounds, socioeconomically disadvantaged children have poorer physical and mental health and a diminished capacity for social and school/intellectual functioning. Evidence suggests that these associations are not static but may vary by child's age, by the specific SES indicator under investigation, by child race/ethnicity, and across various health/developmental outcomes. Much of the child development literature has focused on early childhood and adolescence with less known about health and functioning during middle childhood. Prior research shows that middle childhood is a period of continued neurophysiologic changes responsible for a range of executive functioning including behavioral self-regulation, information processing, and inhibition. A better understanding of the association between SES and health/functioning in middle childhood may shed light on the childhood antecedents of adult illness & inform efforts to reduce disparities.

STUDY QUESTIONS: We explore four questions: 1) is there an association between SES and health and functioning in middle childhood?; 2) does the association vary depending on the SES indicator used? Of particular interest is whether categorical or continuous measures of SES are more powerfully related to middle childhood outcomes and whether education and economic SES measures show different patterns of association with outcomes in middle childhood; 3) does the association vary across health/developmental outcomes?; and 4) are there racial differences in the direction and/or strength of SES associations with health and development for this age group?

METHODS: We recruited sixty families with a child between 8-12 years of age from the San Francisco Bay area September 2005-June 2006. The MacArthur Health/Behavior Questionnaire was used to assess health/adaptive functioning across four developmental domains: physical health, mental health, social functioning, and school/academic functioning. We examined a wide range of SES measures including continuous and categorical assessments of poverty, income, wealth, maternal and overall family educational attainment, subjective social status, and cumulative social risk. A series of multivariate ordinary least squares regressions was performed on the total sample and within race-specific groups. This study used a small convenience sample, which may have affected both the generalizability of our findings and our ability to detect differences in some of the outcomes studied. Further, these cross-sectional data do not infer causality but rather estimate associations. Larger probability samples and longitudinal studies will be helpful both in this regard and in testing mediational pathways.

RESULTS: This study had two principal findings. First, although the long-recognized, graded relation among SES and outcomes was present, associations employing categorical representations of SES were far more pervasive; and stronger in magnitude. Second, we found that the patterning of SES-outcome associations varied systematically by racial/ethnic group. Health/functioning was more strongly associated with educational attainment among Whites and with financial resources among Blacks. Whereas wealth was particularly salient in predicting worse outcomes among Blacks, among Whites more wealth was associated with worse outcomes. Highest overall family educational attainment was a stronger predictor of mental health, social functioning, and school/academic functioning whereas primary caregiver highest educational attainment was the stronger predictor for physical health; suggesting variation in pathways to health according to outcome. Physical health was associated more strongly with financial resources across the spectrum of SES, whereas mental health was more strongly associated with poverty.

CONCLUSIONS: Our findings show that categorical benchmark SES measures are more powerful predictors of health and adaptive functioning in middle childhood compared to continuous measures suggesting that the benefits of higher SES for health and development in middle childhood have more to do with reaching specific levels of status attainment that may afford one the resources necessary to change conditions important for developmental trajectories. We also found systematic differences in the association of SES with health/functioning across racial/ethnic groups suggesting the potential impact of targeted interventions such as increasing educational opportunities among whites, and wealth accumulation among Blacks, which may include education as a means of economic capital.

PUBLIC HEALTH IMPLICATIONS: Whereas previous studies using primarily continuous SES measures call for incremental improvements in income and education, these findings suggest that improvements in health/functioning in middle childhood will require a more significant status transition. Our findings suggest the potential impact of targeted interventions such as increasing educational opportunities among whites, and wealth accumulation among Blacks. Additionally, identifying vulnerable youth will require us to broaden our understanding of what constitutes risk. Focusing on traditional definitions of social disadvantage may hamper our ability to intervene on adversities facing affluent youth.

Concurrent Session D3

Exploring the Social Determinants of Child Health and Development

THE BURDEN OF CHILDHOOD ASTHMA IN PUERTO RICO

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BACKGROUND: Asthma has been described as the most common chronic condition in children. Epidemiological studies showed that Puerto Rican children have higher asthma prevalence compared to Mexicans, Cubans, and Dominicans living in the United States. Few studies were developed to understand the asthma in children living in Puerto Rico (PR). To generate information for interventions and public health policies, the Puerto Rico Asthma Surveillance System (PRSS), at the MCH Program, employed procedures to collect, analyze, and interpret childhood asthma related data.

STUDY QUESTIONS: What is the epidemiological profile of childhood asthma in PR?

METHODS: The PRSS integrated data from the Vital Statistics Office, from the Behavioral and Risk Factor Surveillance System, and from the leading health insurance companies. Health outcomes such as: asthma mortality rates, asthma prevalence, emergency room visits (ERV) and hospitalization rates, and drug utilization were analyzed to describe the targeted population. These indicators were stratified by gender and age. Confidence interval for proportions and rates were calculated using complex surveillance design methods and Poisson estimates. Statistical analyses were performed using R statistical package (V2.8).

RESULTS: In 2007, 28.4% (313,000) of the children were diagnosed with asthma at any time in their lifespan and 13.6% (150,000) currently suffers the condition. Both prevalence measures are two times higher compared to US children (NCHS). Children 0 to 4 years of age have higher rates of ERV and hospitalization than any other age group. Also, children under the government health insurance plan (GIP) have higher rates of ERV and hospitalization than children with private health plan. Lower rates of inhaled corticosteroids claims were observed in GIP enrollees than their counterparts.

CONCLUSIONS: Asthma continues to be a public health problem in PR. Children and adolescents suffer disproportionally from asthma when compared to other age groups. It appears to be a disparity between the private and public health insured.

PUBLIC HEALTH IMPLICATIONS: Efforts should focus in providing continuous education to primary health care providers in the application of the asthma guidelines for diagnosis and control of asthma. The asthma health authority in PR needs to continue supporting the PR Asthma Project initiatives to facilitate the access to proper asthma treatment for children.

Concurrent Session D3

Exploring the Social Determinants of Child Health and Development

TELEVISION VIEWING AND OVERWEIGHT PREVALENCE AMONG 3RD GRADE STUDENTS IN OHIO, 2006-2008

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BACKGROUND: The American Academy of Pediatrics recommends that children older than 2 years of age have no more than 1-2 hours of screen time (including television and other media) per day due to possible negative health effects including excessive weight gain.

STUDY QUESTIONS: Among Ohio 3rd graders, what are the patterns of television viewing and is television viewing associated with overweight prevalence?

METHODS: Public elementary schools were selected by probability proportional to size sampling without replacement. Height and weight were directly measured, and parents reported children's TV-viewing on an average school night. Using SAS procedures for complex sample design, TV-viewing patterns and prevalence of overweight (BMI for age =85th percentile of the 2000 CDC BMI-for-age growth charts) were estimated overall, by sex, and by free and reduced price meal (FRPM) eligibility. Sample sizes limited assessment by race/ethnicity. Chi-squared tests were used to test for differences between groups. Logistic regression was used to determine the association between TV-viewing and overweight prevalence.

RESULTS: Anthropometric and TV-viewing data were obtained from 2318 children. Overall, 22.1%±1.9 of children watched 3+ hours of TV/day. There were no differences in TV-viewing by sex ($p=0.8$), but a higher proportion of FRPM-eligible children watched 3+ hours of TV/day (31.4%±3.4) compared to non-FRPM eligible children (14.9%±1.4) ($p<0.01$). A significantly higher proportion of overweight children watched 3+ hours of TV/day (27.3%±2.1) compared to normal weight children (19.2%±2.2) ($p<0.01$). This was true among boys, girls and non-FRPM eligible children. However, among FRPM-eligible children, there was no significant difference in overweight prevalence by amount of TV watched/day. Overall, children who watch 3+ hours of TV/day were 1.5 (95% CI:1.2-1.9) times more likely to be overweight compared with children who watched 2 or fewer hours of TV/day, adjusted for age, race/ethnicity, and FRPM eligibility.

CONCLUSIONS: Over 1/5 of Ohio 3rd graders exceed recommendations of screen time/day based on TV- viewing data. Overweight was generally higher among those children watching more TV/day compared to those watching less TV/day. Additionally, high amounts of TV-viewing were significantly associated with overweight prevalence.

PUBLIC HEALTH IMPLICATIONS: Among Ohio 3rd graders, overweight prevention programs should include strategies to reduce hours spent watching TV.

Concurrent Session D3

Exploring the Social Determinants of Child Health and Development

THE EFFECT OF ACCULTURATION ON HEALTHY LIFESTYLE CHARACTERISTICS --- DATA FROM THE SCHOOL PHYSICAL ACTIVITY AND NUTRITION STUDY, 2004-2005

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BACKGROUND: Childhood obesity is a national epidemic that disproportionately affects Hispanic children. There is evidence that increased acculturation among this population adversely affects diet and other healthy lifestyle characteristics, thus leading to higher rates of overweight and obesity. No study has yet investigated weight loss behavior and nutrition knowledge among Hispanic 4th grade children. Along with dietary intake and meal patterns, these are important healthy lifestyle characteristics that must be understood in order to decrease overweight and obesity among Hispanic children.

STUDY QUESTIONS: How does acculturation affect healthy lifestyle characteristics among Hispanic 4th grade children in Texas public schools?

METHODS: Using the School Physical Activity and Nutrition (SPAN) study, we examined cross-sectional data on healthy lifestyle characteristics collected in Texas public schools from 4th grade children in 2004-2005. We calculated adjusted odds ratios and confidence intervals using multivariate logistic regression analyses to assess odds of healthy lifestyle characteristics among Spanish-speaking Hispanic children, as compared to English-speaking Hispanic children and White children.

RESULTS: The odds of milk and fruit consumption were almost two times greater among Spanish-speaking Hispanic children (milk: AOR: 1.6, CI: 1.1-2.2, fruit: AOR: 1.7, CI: 1.1-2.4) than English-speaking children and White children. The odds of eating at least two meals the previous day among Spanish-speaking Hispanic children (AOR: 0.5, CI: 0.3-0.8, p-value: <0.01) were also less than either English-speaking Hispanic children or White children. Spanish-speaking Hispanic boys had greater odds (AOR: 2.7, CI: 1.3-5.6, p-value: 0.01) of weight loss attempts than English-speaking Hispanic boys or White boys. Overall, Spanish-speaking Hispanic children (AOR: 0.4, CI: 0.2-0.8, p-value: 0.01) had less nutrition knowledge than English-speaking children and White children.

Spanish-speaking Hispanic children had better dietary habits than English-speaking Hispanic children and White children. For example, the odds of milk and fruit consumption were almost two times greater among Spanish-speaking Hispanic children than English-speaking children and White children (milk: AOR: 1.6, CI: 1.1-2.2, p-value: 0.01; fruit: AOR: 1.7, CI: 1.1-2.4, p-value: 0.01). The odds of eating at least two meals the previous day among Spanish-speaking Hispanic children were also less than either English-speaking Hispanic children or White children (AOR: 0.5, CI: 0.3-0.8, p-value: <0.01). Spanish-speaking Hispanic boys had greater odds of weight loss attempts than English-speaking Hispanic boys or White boys (AOR: 2.7, CI: 1.3-5.6, p-value: 0.01). Overall, Spanish-speaking Hispanic children had less nutrition knowledge than their peers (AOR: 0.4, CI: 0.2-0.8, p-value: 0.01).

CONCLUSIONS: Acculturation, which was measured by the primary language spoken at home, was shown to be associated with healthier diet, inadequate meal patterns, and less nutrition knowledge.

PUBLIC HEALTH IMPLICATIONS: It is important to develop culturally sensitive interventions aimed at Spanish-speaking Hispanics. Public health programs and health education must be geared to improve nutrition knowledge and to teach Hispanics the benefits of their traditional diets.

Concurrent Session D4

The Early Birth Catches the Risk

RACIAL DISPARITY IN THE RATE OF LATE PRETERM BIRTHS (34-36 WKS): THE EFFECT OF TRADITIONAL SOCIODEMOGRAPHIC AND MEDICAL RISK FACTORS

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BACKGROUND: For unclear reasons, the rate of late preterm birth (34-36 weeks, PTB) has been increasing among US-born women. Moreover, recent published data highlight that late PTB have greater mortality and morbidity than term births.

STUDY QUESTIONS: To what extent do traditional sociodemographic and medical risk factors modify the relationship between women's race and late PTB?

METHODS: Stratified and multivariable binomial regression analyses were performed on 2003 computerized Illinois vital records of singleton non-Latino African-American and White infants > 33 weeks gestation born to Chicago residents.

RESULTS: In Chicago, the rate of late PTB for African-Americans (N= 15,654) was 12.1% compared to 6.1% for non-Latino Whites (N= 10,194); Relative Risk (RR)= 2.0 (1.8-2.2). African-American mothers were more likely than Whites to have high-risk individual level factors including young age, unmarried marital status, low education, high parity, and inadequate prenatal care (PNC) utilization ($p < 0.01$). However, the racial disparity in the rate of late PTB persisted as maternal risk status improved. Most striking, among women who received adequate PNC the rate of late PTB was 5.4% for African-Americans compared to 2.1% for Whites, RR= 2.5 (2.1-3.0). The adjusted (controlling for maternal age, education, marital status, parity, prenatal care, and cigarette smoking) RR of late PTB for African-Americans (compared to Whites) equaled 1.4 (1.4-1.5). Medically induced deliveries among late PTB were less common among African-Americans than among Whites: 37.0% vs. 43.8% ($p < 0.01$). The racial disparity in the rate of late PTB persisted in each of the leading delivery categories: medically induced, spontaneous, and PROM; RR= 1.7 (1.4-2.0), 1.8 (1.7-1.9), and 2.0 (1.2-2.9), respectively.

CONCLUSIONS: We conclude that 1) African-Americans have a two-fold greater rate of late PTB than non-Latino Whites; 2) traditional sociodemographic and medical risk factors are associated with the race-specific rate of late PTB but fail to fully explain the racial disparity; and 3) medically induced deliveries do not contribute to the racial disparity in late PTB.

PUBLIC HEALTH IMPLICATIONS: Strategies are needed for identifying and addressing risk factors for late PTB and for eliminating the racial disparity in late preterm delivery.

Concurrent Session D4

The Early Birth Catches the Risk

MEDICAL INTERVENTION AND THE PRETERM BIRTH RATE: A REVIEW OF NATIONAL TRENDS, 1991-2006

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BACKGROUND: From 1991 to 2006, large increases in preterm cesarean section and induction of labor have paralleled significant increases in the preterm birth rate.

STUDY QUESTIONS: The objective of the study is to examine the relationship between recent changes in the medical management of pregnancy (cesarean section and induction of labor) and changes in the preterm birth rate.

METHODS: Trend and cross-sectional analysis of singleton births in the United States from 1991-2006. Main outcome measures are trends in preterm birth, preterm cesarean section, and preterm induction of labor.

RESULTS: From 1991 to 2006 while the rate of singleton preterm births increased by 13%, the cesarean rate for the same subgroup increased by 47% and the rate of induced labor more than doubled. In a multivariate analysis we found that, after adjusting for social and medical risk factors, a singleton preterm infant born in 2006 had an 88% higher chance of having a medical intervention (cesarean or induction of labor) than a comparable infant born in 1991. In an exploratory analysis of new birth certificate data for 19 states, an estimated 42% of singleton preterm births were delivered by labor induction or cesarean section without trial of labor.

CONCLUSIONS: Since both the relative and absolute proportion of spontaneous vaginal births declined from 1991 to 2006 for overall preterm and gestational age subgroups, the data suggest that all of the increase in the preterm birth rate was related to increases in medical intervention.

PUBLIC HEALTH IMPLICATIONS: Further research is needed into the decision-making process surrounding medical interventions related to preterm birth.

Concurrent Session D4

The Early Birth Catches the Risk

MASSACHUSETTS MOTHERS AT INCREASED RISK FOR DELIVERING LATE PRETERM INFANTS

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BACKGROUND: Late preterm infants (born between 34-36 weeks gestation) have a higher incidence of morbidity and mortality when compared with term infants (37-42 weeks). In 2007, 9.0% of infants born to mothers in Massachusetts were preterm (less than 37 weeks), 73% of these were late preterm. This late preterm rate has been increasing by 3% per year since 1997. Reasons for this trend have yet to be explored.

STUDY QUESTIONS: Which mothers have an increased risk for delivering late preterm infants?

METHODS: This is a retrospective cohort study using birth records of Massachusetts mothers who delivered live singleton infants between 2000 and 2007. Logistic regression models were used to identify maternal and pregnancy characteristics associated with increased risk for delivering late preterm infants. Adjusted odd ratios (OR) and 95% confidence intervals (CI) were reported.

RESULTS: The study cohort consisted of 605,103 births, of which 4.7% were late preterm. The characteristics of mothers with increased odds of delivering late preterm infants included (in decreasing order of magnitude); inadequate/no prenatal care (OR: 3.45, 95%CI: 3.27-3.64), presence of any maternal medical conditions for this pregnancy (OR: 1.73 95%CI: 1.69-1.78), African American ethnicity (OR: 1.48, 95%CI: 1.40-1.57), Haitian ethnicity (OR: 1.39, 95%CI: 1.26-1.52), parity =1 (OR: 1.29, 95%CI: 1.26-1.32), Puerto Rican ethnicity (OR: 1.24, 95%CI: 1.18-1.31), Cambodian ethnicity (OR: 1.24, 95%CI: 1.09-1.40), smoking during pregnancy (OR: 1.19, 95%CI: 1.14-1.24), Cape Verdean ethnicity (OR: 1.19, 95%CI: 1.06-1.33), high school education or less (OR: 1.12, 95%CI: 1.07-1.18), age 35+ yrs (OR: 1.09, 95%CI: 1.05-1.13), and preference for English language (OR: 1.08, 95%CI: 1.02-1.14).

CONCLUSIONS: Characteristics of mothers with an increased risk of late preterm delivery comprised two broad categories: health risks, including older age, smoking during pregnancy, inadequate or no prenatal care, low parity, and maternal medical conditions; and social factors, including, ethnicity, language, and less education. Further work is needed to understand why these ethnicity groups have increased odds for delivering late preterm infants.

PUBLIC HEALTH IMPLICATIONS: These results will contribute to the research literature and help guide future public health programs and policies to reduce the growing incidence of late preterm infants.

Concurrent Session D4

The Early Birth Catches the Risk

HISTORY OF PREGNANCY TERMINATION AS A RISK FACTOR FOR PRETERM BIRTH IN VIRGINIA, 2000-2007

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BACKGROUND: Preterm birth (PTB) is the leading cause of infant mortality and contributes substantially to the overall burden of childhood disability. A history of pregnancy termination has been identified as a risk factor for subsequent preterm birth in several studies, but there is little consensus about the exact nature of the relationship due to methodological concerns, including small sample size, incomplete reporting of terminations, and failure to distinguish between prior intentional terminations (PITP) and prior spontaneous terminations (PSTP).

STUDY QUESTIONS: To what extent do the total number and type of prior pregnancy termination impact risk of preterm birth among first live births in Virginia, 2000-2007?

METHODS: First live births between 2000-2007 to Virginia residents were matched to a maternally linked dataset containing the pregnancy history of all Virginia residents from 1990-2007. Due to the lack of identifiers in the PITP database, the pregnancy history dataset contained only live births and PSTPs. In Virginia, all fetal deaths, regardless of gestation, are reportable. PITPs were inferred by subtracting the number of PSTPs from the total terminations reported on the birth certificate. The final sample included 302,688 first live births, 55,931 of which (18.5%) included at least one prior termination.

RESULTS: Compared to women who had no history of previous pregnancy terminations, women who had 2 (OR = 1.1; 95%CI:1.05-1.18) or 3 or more (OR = 1.3; 95%CI:1.39-1.61) PIPTs had increased odds of a preterm first live birth. Women who reported 1, 2, or 3 or more PSPT had PTB odds ratios of 1.4 (95%CI:1.37-1.50), 1.7 (95%CI:1.48-1.98) and 3.0 (95%CI:2.09-4.22) times, respectively.

CONCLUSIONS: Prior pregnancy terminations were associated with increased odds of a preterm first live birth. Both PSPT and PIPT were significant predictors of a preterm first live birth. The highest odds were found for women with 3 or more PSPT, which may be suggestive of a biological component in the causal pathway that cannot be explained by this study.

PUBLIC HEALTH IMPLICATIONS: Pregnancy terminations, and multiple PSPTs in particular, are important indicators of risk prior to a woman's first live birth. Further research is needed to understand the etiology of PTB among women who are more prone to spontaneous terminations.

Concurrent Session D5

Epidemiology: A Tool to Improve Perinatal Care

LOWERING FETAL AND INFANT DEATH: RACIAL/ETHNIC DIFFERENCES IN ACCESS AND UTILIZATION OF OBSTETRIC CARE—TEXAS, 2000-2004

***Gita Mirchandani, PhD, MPH*, Julie Stagg, MSN, RN, Brian Castrucci, MA**
Texas Department of State Health Services

BACKGROUND: Healthy People 2010 goals include reduction of fetal and infant mortality. Since most infant deaths occur in the neonatal period, ensuring access to and utilization of appropriate obstetric care is key to reducing fetal and infant deaths.

STUDY QUESTIONS: What proportion of potentially viable fetal deaths, very low birth weight (VLBW), and very & moderately preterm births (<34 weeks) occurring in Texas hospitals during 2000-2004 were delivered in a sub-specialty hospital? What maternal factors are associated with delivery in a sub-specialty hospital?

METHODS: A retrospective study linked maternal and fetal/infant demographic information from fetal death & infant birth certificates with delivery hospital information from the American Hospital Association annual survey of hospitals where hospitals self-designate as one of three obstetric levels: level I (basic), level II (specialty), and level III (sub-specialty). Together with the Fetus and Newborn Committee of the Texas Pediatric Society, viability cut-offs were defined and analyses were restricted to fetal deaths, preterm and VLBW (<1,500 grams) births = 24 weeks gestation and =500 grams in weight.. We used ANOVA and chi square tests to look at differences between the two groups.

RESULTS: Slightly more than half (50.6%) of these births and fetal deaths occurred in a level III facility; however, greater proportions of Black women (55.2%) accessed sub-specialty care, compared to 50.5% of White women and 48.7% of Hispanic women ($p<0.0001$). These differences persisted when adjusting for degree of urbanization of mother's place of residence. Only 9% of births were transferred prior to delivery and this differed by race with 44.6% of White, 22.3% of Black, and 30.8% of Hispanic mothers transferred prior to delivery ($p<0.0001$).

CONCLUSIONS: While greater proportions of Black women accessed sub-specialty care, black women were transferred to higher levels of care in the smallest proportions.

PUBLIC HEALTH IMPLICATIONS: Texas must develop perinatal regionalization strategies, building upon further research into the racial/ethnic differences in access and utilization of high-level obstetric care.

Concurrent Session D5

Epidemiology: A Tool to Improve Perinatal Care

CONTRIBUTION OF CESAREAN DELIVERY AND INDUCTION OF LABOR TO DELIVERY PRIOR TO 39 WEEKS GESTATION: NEW JERSEY, 1997-2005

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BACKGROUND: New Jersey's rates of labor induction and cesarean delivery have been rising steadily for over a decade. This trend does not appear to be driven primarily by medical indications; the influence of physician and parental convenience raises concerns about unforeseen but avoidable complications. The March of Dimes recently ranked New Jersey below average in the prevention of preterm birth, and has raised concerns nationally about adherence to the established recommendation by the American College of Obstetrics and Gynecology against elective deliveries before 39 completed weeks of gestation.

STUDY QUESTIONS: To what degree have cesarean delivery and induction of labor increased the incidence of delivery prior to 39 completed weeks of gestation?

METHODS: Birth certificates were compiled from 1997 to 2005. Cesarean section without a trial of labor, and induction of labor were the outcomes of interest. Only "low-risk" deliveries were included, defined as singleton, vertex presentations, and excluding prior cesarean, abnormal bleeding, uterine tissue anomaly, hypertensive disorder and macrosomia. Gestational age was based on the clinical estimate. Shifts in incidence-by-gestational-age curves were examined for three time intervals— 1997-99, 2000-02, and 2003-05.

RESULTS: Consistent with overall trends in New Jersey, cesarean delivery without a trial of labor increased substantially among low-risk women across all gestational ages. Comparing 1997-99 with 2003-05, the risk of no-trial cesarean at 37, 38 or 39 weeks gestation approximately tripled for low-risk women (greatest change at 38 weeks). For labor induction, the strongest shift started at 38 weeks, increasing by at least 50% thereafter. Meanwhile the gestational-age-specific rate of cesarean following induction has remained relatively steady, at twice the rate for spontaneous labors. Overall, the proportion of live-born infants delivered before the 39th week increased from 25% to 29% for low-risk nulliparas and from 27% to 32% for low-risk multiparas.

CONCLUSIONS: Over a nine-year period, changes in the gestational-age-specific risk of no-labor cesarean and induced delivery has shifted the duration of gestation.

PUBLIC HEALTH IMPLICATIONS: Any shift toward shorter gestations suggests an increase in the risk of prematurity-related complication for infants and cesarean-related complications for mothers.

Concurrent Session D5

Epidemiology: A Tool to Improve Perinatal Care

HOSPITALS MATTER: DIFFERENTIAL RATES OF CESAREAN SECTION ACROSS HOSPITALS IN MASSACHUSETTS

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BACKGROUND: The rate of Cesarean-section (C-section) delivery varies substantially across hospitals. However, the extent to which hospital-level variation is attributable to hospital, versus maternal characteristics is unknown.

STUDY QUESTIONS: 1) Does between-hospital variation in rates of C-section remain after accounting for maternal characteristics and risk factors? 2) Does level of maternity care services explain any hospital-level variation?

METHODS: Data were extracted from Massachusetts birth records of singletons born to primiparous Massachusetts-resident women in 2006. A total of 32,910 births occurring within 49 Massachusetts hospitals were included in these analyses. Multiples, multiparous, birth-center, home, en-route, and out-of-state births were excluded. Multilevel logistic regression was conducted modeling the log-odds of C-section delivery. Age, education, race/ethnicity, preferred language, labor/delivery complications, medical risk conditions, place of birth, and prenatal-care source of payment were included as measures of maternal characteristics and risk factors. A subsequent model additionally included a variable indicating level of hospital neonatal/maternal services (level-1, level-2, and level-3, where lower level hospitals typically do not accommodate higher risk births.)

RESULTS: In models that adjusted for maternal characteristics and pregnancy risk factors, there was significant hospital-level variation in the log-odds of C-section delivery (variance = 0.35, $p<0.0001$). In a model which additionally included hospitals' level of neonatal/maternal services, the odds of having a C-section delivery was higher in level-2 compared with level-3 hospitals (OR=1.4, $p < .05$). No difference in the rate of C-section was observed between level-1 and level-3 hospitals. Significant between-hospital variance remained even after accounting for level of care (variance = 0.29, $p<0.0001$).

CONCLUSIONS: The rate of C-section varied significantly across hospitals in Massachusetts, after adjusting for maternal characteristics as well as level of maternity care services. Future studies are required to delineate mechanisms associated with differences in hospital C-section rates.

PUBLIC HEALTH IMPLICATIONS: Results of this study suggest an independent association of hospital characteristics with likelihood of C-section delivery, above and beyond individual level characteristics and risk factors. Strategies to reduce C-section delivery may need to address hospital characteristics, practices, and policy.

Concurrent Session D5

Epidemiology: A Tool to Improve Perinatal Care

BEING BORN AT THE RIGHT PLACE: DEFINITIONS AND DATA COLLECTION ON NEONATAL LEVELS OF CARE

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BACKGROUND: Perinatal regionalized systems, to include obstetrical transport and appropriate referral to neonatal intensive care, have been an important mechanism for improving outcomes for very low birth weight (VLBW) infants. However, regionalized systems have deteriorated over time and regulatory language defining levels of neonatal care vary significantly. State increases in infant mortality may, in part, be an unintended consequence of deficiencies in the regional organization of perinatal care.

STUDY QUESTIONS: How well do states define and measure appropriate levels of neonatal care for VLBW infants?

METHODS: We studied how states assess neonatal levels of care using 3 descriptive approaches. First, we systematically collected data from all 50 states' health department websites on definitions of levels of neonatal care; including language on the use of the American Academy of Pediatrics' (AAP) 2004 policy statement. Second, we analyzed the percentage of VLBW infants born in facilities with a neonatal intensive care unit (NICU) during 2005-2006 in 16 states using the 2003 revised birth certificate. Third, state-specific reports on Maternal Child Health Bureau (MCHB) performance measure #17 (which measures the percent of VLBW infants delivered at facilities for high-risk deliveries and neonates) from 2002-2006 were assessed in all states to see if they met the performance goal of 90%.

RESULTS: States varied considerably in neonatal level of care definitions, to include infant gestational age and birth weight criteria, healthcare provider criteria, transport responsibilities, and, enforcement of standards used. The 2003 revised birth certificate data showed that only 73% of VLBW infants were delivered in NICUs. Review of MCHB performance measure #17 showed only 10 of 50 states reported reaching the national goal of 90% of VLBW infants delivered in appropriate facilities with states ranging from 33% to 92%.

CONCLUSIONS: Review of state data sources revealed that no consensus exists for defining or measuring appropriate neonatal levels of care. Few states use the established AAP guidelines for defining these levels.

PUBLIC HEALTH IMPLICATIONS: Improving perinatal regionalized systems of care requires involvement from multiple stakeholders. State maternal-child health leaders in collaboration with clinicians have an opportunity to develop comparable data and methods to monitor the quality of healthcare delivery and improve outcomes to vulnerable newborns.

Concurrent Session D6

Family Planning, Maternal Behaviors and Outcomes

BEYOND PLANNING: RACIAL AND INCOME DISPARITIES IN UNINTENDED PREGNANCY AND PRENATAL CIGARETTE USE

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BACKGROUND: In the United States, half of all pregnancies are unintended and are at increased risk for harmful prenatal exposures, including cigarette smoking. Traditionally, research efforts have been directed at mistiming to understand women's pregnancy intentions and health behaviors. The current study aims to broaden the conceptualization of unintended pregnancy beyond pregnancy planning to explore how women's affective state, specifically her regard for the pregnancy, impacts engagement in prenatal cigarette use.

STUDY QUESTIONS: Does women's regard for the pregnancy predict prenatal cigarette use?

METHODS: Data were obtained from the Family Life Project, a longitudinal study of children and families living in geographical areas of concentrated rural poverty: Appalachia and the Black South. 1,252 women completed demographic questionnaires, and were interviewed about their pregnancy experience and prenatal substance use via the Missouri Assessment of Genetics Interview for Children (MAGIC) in the home 2 months postpartum. Four pregnancy intention groups were identified: planned/happy (26%), planned/unhappy (3%), unplanned/happy (56%), and unplanned/unhappy (15%); and 3 patterns of prenatal cigarette use: non-smokers (77%), quitters (6%), and smokers (17%). Multinomial logistic regression was used to test the prediction of demographic factors on the likelihood of prenatal cigarette smoking. Further, these odds ratios were stratified by pregnancy intention group.

RESULTS: Caucasian (OR= 4.87; 3.04-7.80), low income (OR= 1.53; 1.02-2.31), and single (OR=4.10; 2.72-6.20) women were more likely to be prenatal smokers. Further, controlling for demographic factors, women in the 'unhappy' pregnancy intention groups, regardless of whether or not the pregnancy was 'unplanned' were 1.87 times as likely to be prenatal smokers (CI= 1.27-2.78) compared to women who felt 'happy' about their pregnancies.

CONCLUSIONS: Women's regard for the pregnancy is an important predictor of engaging in prenatal cigarette use. Further work is necessary to identify sources of emotional support and strain for pregnant women, and prospective longitudinal work should be conducted to examine how stability of affective state impacts cigarette use, as regard may change throughout the course of pregnancy.

PUBLIC HEALTH IMPLICATIONS: Prenatal health education, particularly smoking cessation programs, should assess maternal regard for the pregnancy and include support services for maternal affective state.

Concurrent Session D6

Family Planning, Maternal Behaviors and Outcomes

FACTORS ASSOCIATED WITH UPTAKE OF POSTNATAL CARE IN SHAMVA DISTRICT OF MASHONALAND CENTRAL PROVINCE, 2009

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BACKGROUND: Postnatal care (PNC) is critical to the health and survival of a mother and her newborn.Thenewborn. The uptake of PNC has been low in Shamva district over the past 8 years. Uptake of PNC was 53.4% in 2008 whereas uptake of antenatal care was 89%. In 2007, 63% of the maternal deaths occurred in the postnatal period. We determined factors associated with uptake of PNC.

STUDY QUESTIONS: What environmental, demographic and socio-cultural factors that influence the intention of women to utiliseutilize PNC services?

METHODS: A 1:1 case control study was conducted in 5 institutions. A case was a woman who had gone for antenatal care only. A control was a woman who had gone for both antenatal and postnatal care. Some constructs of the Health Belief Model were incorporated into an interviewer administered questionnaire used to obtain information on demographic; knowledge, attitude and practices; socio-cultural; economic and health service variables.

RESULTS: We interviewed 150 cases and 150 controls. Knowledge of the importance of PNC in 6 weeks after delivery was different between the cases and controls (p=0.02). No difference in attitudes towards PNC between cases and controls. Both believed in its value and importance. Common practice after delivery for both was seclusion until the umbilicus fell off. Factors associated with reduced likelihood of uptake of PNC were: rural residence (OR=7.61, 95%CI: 1.48, 39.2); non-institutional delivery (OR=1.92, 95%CI: 1.01, 3.64); living more than 5 km from the health facility (OR=1.74, 95%CI: 1.06, 3.65). Factors associated with increased likelihood of uptake of PNC were being an employed woman (OR=0.45, 95%CI: 0.21, 0.98); partner employed (OR=0.50, 995%CI: 0.29, 0.85); knowing the importance of PNC (OR=0.09, 95%CI: 0.01, 0.94) and the self efficacy (ability to attend PNC within 12 hours of home delivery) (OR=0.46, 95%CI: 0.24, 0.86)

CONCLUSIONS: Rural residence, distance from health facility and non-institutional delivery were associated with reduced uptake of PNC. Employment of the woman; that of her partner, having knowledge on the importance of PNC at 6 weeks after delivery and self efficacy were associated with increased uptake of postnatal care.

PUBLIC HEALTH IMPLICATIONS: Need to strengthen education on importance of PNC during antenatal care.

Concurrent Session D6

Family Planning, Maternal Behaviors and Outcomes

EXAMINING THE INFLUENCE OF SOCIO-DEMOGRAPHIC VARIABLES ON THE USE OF CONTRACEPTION AFTER ABORTION IN THE UNITED STATES USING THE 2002 NATIONAL SURVEY OF FAMILY GROWTH

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BACKGROUND: In the U.S., nearly half of all pregnancies are unintended and almost half of these end in abortion; 47 percent of all induced abortions are repeat procedures. Contraception, especially post-abortion contraception, may be the most effective way to prevent unintended pregnancies and repeat abortions. This is the first attempt to characterize post-abortion contraceptive use in the U.S. at a national level.

STUDY QUESTIONS: What were the contraceptive prevalence and characteristics of women 1 and 3 months after abortion in the years preceding the 2002 National Survey of Family Growth?

METHODS: 7,643 women aged 15-44 were interviewed from a national probability sample of U.S. households between March 2002 and March 2003. Pregnancies that ended in induced abortion from January 1999 to December 2002 were included. Contraceptive use was based on self-report of method between January 1999 and March 2003 and categorized by method effectiveness. Analysis was conducted using SAS and SUDAAN. Chi square, $p < .05$, was used to identify significant associated attributes.

RESULTS: 1 month after abortion, 38% of women reported using no contraceptive method, 30% were using a moderately effective method, and 32% a highly effective method. At 3 months post-abortion, 32% were using a moderately effective method and 35% a highly effective method. Poverty, lower education, informal marital status, and higher parity were significantly associated with lower contraceptive use 1 month after abortion. Only poverty was associated with contraceptive use 3 months after abortion.

CONCLUSIONS: Women of lower poverty levels, lower educational achievement, and with more children were more likely to use no method or moderately effective methods compared to highly effective methods. The chief limitations are incomplete reporting of abortion events and accurate recall of time sensitive data.

PUBLIC HEALTH IMPLICATIONS: These findings provide solid programmatic guidance for policymakers, public health professionals, and researchers and demonstrate the need to implement complex strategies to increase contraceptive use in the immediate post-abortion period. National and state health and insurance policies should ensure that women be offered adequate and affordable contraceptive counseling and supplies. More research is clearly needed.

Concurrent Session D6

Family Planning, Maternal Behaviors and Outcomes

PREDICTORS OF REPEAT PREGNANCY AMONG MICHIGAN ADOLESCENTS AGES 10-19 YEARS SERVED BY THE SPECIAL SUPPLEMENTAL NUTRITION PROGRAM FOR WOMEN, INFANTS & CHILDREN (WIC), 2003-2007

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BACKGROUND: Repeat teen pregnancy is associated with poor maternal and infant health outcomes; prior studies have yielded somewhat mixed results meaning further research is necessary. This study explores the association between demographic characteristics and repeat teen pregnancy among Michigan's WIC program participants, 2003-2007.

STUDY QUESTIONS: What is the rate and what are the predictors of repeat teen pregnancy among MI WIC participants?

METHODS: Michigan Pregnancy Nutritional Surveillance Survey (PNSS) data from 2003-2007 were used for this study (n=287,100). The study sample was women below 20 years of age with non-missing outcome variable data (n=58,480). Parity, defined as the number of times that a woman has been pregnant for 20 or more week's gestation regardless of whether the infant was born alive or dead, is the dependent variable of interest in this study. Independent variables include: race/ethnicity, age /education (using a composite variable), poverty level, location, pre-pregnancy body mass index (BMI) and tobacco smoking. Univariate, bivariate analysis and logistic regression were used.

RESULTS: The rate of repeat pregnancy in the study population was 3.89% (n=2273). Of multiparous teens, 81% were 18-19 years of age with 65% of them having less than 12 years education, 83% were at 100% poverty level or lower, and 69% had a pregnancy interval less then 18 months.

Results of multivariate regression analysis revealed associations between repeat teen pregnancy and poverty level less then 100% (OR=1.476; 1.116-1.953), marriage (OR 4.185; 3.340-5.245), overweight or obese pre-pregnancy BMI (OR 1.528; 1.200-1.947) and cigarette smoking at first prenatal visit (OR 1.683; 1.244-2.277).

Factors associated with a protective effect on repeat pregnancy included: age 18 to 19 years with 12 or more years of education (OR=0.513; CI 0.459-0.574), poverty level greater then 150% (OR 0.526; 0.344-0.803), and underweight Pre-Pregnancy BMI (OR=0.582; 0.438-0.774).

CONCLUSIONS: Poverty level less then 100%, marital status, overweight or obesity and cigarette smoking at first prenatal visit are associated with repeat pregnancy in teens. Although protective, being 18-19 old suggests that the 1st pregnancy occurred at too young of an age.

PUBLIC HEALTH IMPLICATIONS: Adequate family planning and support including education on birth spacing are recommended to teens at increased risk of repeat pregnancy.

Concurrent Session D7

Lifestyle Factors and Child Health Outcomes

RISK FACTORS OF SODA AND OTHER SUGAR SWEETENED BEVERAGES AMONG 2 YEAR OLDS: FINDINGS FROM A POPULATION-BASED SURVEY

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BACKGROUND: Consumption of soda and other sugar sweetened beverages (SSBs) have been associated with increased weight and dental caries in pre-school age children. Currently there is scant evidence regarding the distribution, prevalence and risk factors associated with soda and other SSBs among young children. We examined the risk factors for consumption of soda and other SSBs (including soda, fruit drinks and Kool-Aid) among two year old children.

STUDY QUESTIONS: What are the risk factors for consumption of soda and other sugar sweetened beverages among a population based sample of 2 year old children?

METHODS: We used data from birth certificates, the Oregon Pregnancy Risk Assessment Monitoring Surveillance Survey (PRAMS, which oversamples non-white mothers), and PRAMS-2, which re-interviews PRAMS respondents when their child is, on average, 25 months old (weighted response rate = 56.7%). We compared consumption of SSBs on 0 vs. at least 1 day per week. 1911 women who had live births in 2004-2005 responded to the PRAMS-2 survey in 2006-2007. Re-weighted data was used to account for the complex survey sampling design and analyses were preformed in Stata 9.0. It is important to note that SSB consumption was based on mothers' self report, therefore there is a possibility for bias and underestimation of the frequency of consumption.

RESULTS: Of the PRAMS-2 respondents, 50.8% reported that their child drank SSBs at least one day a week. In multivariate logistic analysis, women most likely to have two year olds who drank SSB at least once a week were more likely to be low income (ORa 2.52, 95% CI 1.69-3.74) , eat out 2 or more days/week (ORa 2.52, 95% CI 1.69-3.74) and less than 25 years old at the time of birth (ORa 2.09, 95% CI 1.35-3.25) .

CONCLUSIONS: Over half of mothers reported that their children drank SSBs at least once a week. Providers should advise parents that any consumption of SSBs by young children us unhealthy.

PUBLIC HEALTH IMPLICATIONS: Underscoring the pervasiveness of soda and other SSB consumption among toddlers is necessary in order to mobilize action among parents, physicians and decision makers.

Concurrent Session D7

Lifestyle Factors and Child Health Outcomes

INFANT SECONDHAND SMOKE EXPOSURE IN LOUISIANA, 1998-2004: TREND AND HIGH RISK POPULATION

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BACKGROUND: Although there is a considerable body of literature documenting the adverse outcomes of secondhand smoke exposure, no previous epidemiological study has been conducted to evaluate the trend of infant secondhand smoke exposure (ISHSE) at home and define the population at highest risk.

STUDY QUESTIONS: Was there a trend of ISHSE from 1998 to 2004 and what infants were at high risk of secondhand exposure in Louisiana?

METHODS: 1998-2004 Louisiana Pregnancy Risk Assessment Monitoring System data, including only white and black women, were used for analyses. Women whose infants died or were not living with them were excluded from the study. Logistic regression was used to determine the trend of ISHSE from 1998 to 2004 and define variables associated with ISHSE. SAS-callable SUDAAN 10.0 was used for data analysis. Alpha was set at 0.05 for statistical significance.

RESULTS: There were 12,318 women included in the study. In 1998, the prevalence of ISHSE was 14.3%, 16.9%, and 10.2% overall, and for whites and blacks, respectively. In 2004, it was 13.8% overall, 12.5% among whites, and 15.8% among blacks. Adjusted annual percent change of odds of ISHSE was 9.0 % ($p = .0020$) among whites and -5.0 % ($p = .0084$) among blacks. There was no trend of ISHSE in the overall population ($p = .9414$). Odds of ISHSE was higher among women who reported current smoking than among women who did not (adjusted OR: 3.1, 95% CI: 2.7-3.5). Additionally, adjusted odds of ISHSE was higher among women who were younger than 20, had less than high school education, were unmarried, never breastfed their infants, had term delivery, or whose deliveries were paid for by Medicaid.

CONCLUSIONS: Although prevalence of ISHSE did not change in the total study population, it increased in blacks and decreased in whites between 1998 and 2004 in Louisiana. Smoking status, maternal age, education, marital status, delivery payment source, delivery status, and breastfeeding status were associated with ISHSE.

PUBLIC HEALTH IMPLICATIONS: Counseling women about smoking cessation during prenatal care is necessary to successfully reduce ISHSE in Louisiana.

Concurrent Session D7

Lifestyle Factors and Child Health Outcomes

FACTORS ASSOCIATED WITH HIV INFECTION AMONG CHILDREN BORN TO MOTHERS PARTICIPATING IN THE PREVENTION OF MOTHER TO CHILD TRANSMISSION (PMTCT) PROGRAMME AT CHITUNGWIZA HOSPITAL, ZIMBABWE

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BACKGROUND: HIV infection contributes increasingly to childhood morbidity and mortality. We investigated factors associated with HIV infection among children born to mothers participating in the PMTCT programme at the Chitungwiza Hospital.

STUDY QUESTIONS: What are the factors associated with HIV infection among children born to women participating in PMTCT?

METHODS: A 1:1 unmatched case-control study was conducted. A case was defined as a child who tested HIV positive, born to a mother who was a participant in the PMTCT programme. A control was a HIV negative child born to a mother who also was a participant in the PMTCT programme. We used an interviewer-administered questionnaire to collect data on infant feeding, nevirapine non- adherence at delivery, and common childhood morbidities. Checklist was used to gather information on mode of delivery and duration of labour, maternal CD4 counts and immunization status of the children

RESULTS: A total of 120 mothers were interviewed. Factors that were found to be associated with HIV infection included maternal CD4 count of less than 200 during pregnancy {Odds Ratio (OR) 6.63 (95% CI 2.59-16.91)}, breast feeding {OR 4.27 (1.13-16.17)}, and infants hospitalized since birth {OR 3.60 (95% CI 1.67-7.76)}.Exclusive breast feeding for less than 6 months was found to be protective {OR 0.44 (95% CI 0.20-0.95)}.

CONCLUSIONS: HIV infection was found among children whose mother's CD4 count was = 200cells/µL and if they were breastfed more than 6 months. Low maternal CD4 counts mean high maternal viral loads and higher risk of transmission to the infants. Breastfeeding exclusively for less than six months was protective. Infants less than six months are less likely to be given complementary feeds which tend to damage the gut wall. This decreases the risk of HIV infection in that age group.

PUBLIC HEALTH IMPLICATIONS: We recommended that antenatal care counselors encourage exclusive breast feeding period for less than six months if infant formula was not available for the mother to use. In addition, education at community level is needed to encourage HIV positive women of child bearing age to have their CD4 counts and viral loads measured before conception.

Concurrent Session D7

Lifestyle Factors and Child Health Outcomes

IDENTIFYING PATTERNS OF CHILDREN WITH ELEVATED BLOOD LEAD LEVELS IN ORLEANS PARISH PRE AND POST- KATRINA

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BACKGROUND: Prior to HurricanHurricane Katrina, New Orleans was identified as a high-risk parish for elevated childhood blood lead levels. In 2005, HurricanHurricane Katrina displaced nearly the entire population, approximately 70% have slowly returned. The high winds and flooding destroyed or significantly damaged a large percentage of homes which has resulted in the demolition or extensive gutting and repair of much of the housing stock; many have yet to be repaired which places a premium on habitable structures. The extensive damage shifted the footprint of the city, with a large portion of the returned population occupying a relatively small area. These changes in population distribution, as well as the removal of many lead-containing structures, have altered the risks and trends in the childhood blood lead poisoning. Analysis of surveillance data provides an opportunity to examine these changes.

STUDY QUESTIONS: What are patterns of changes in EBLs in post-Katrina New Orleans compared to pre-Katrina distributions, and is the post-Katrina distribution geographically correlated with demolition and rebuilding efforts as evidenced by New Orleans building, demolition, electrical, and mechanical permits?

METHODS: LACLPPP blood lead surveillance data of the years 2004, 2006-2008 were used to identify changes in the geographic distribution of EBLs from pre-Katrina to post-Katrina. Shifts in the geographic distribution were assessed using current population. Addresses of lead screening were geocoded using Centrus software. Structural damage estimates and building permits are obtained from the City of New Orleans GIS Data Portal (CNOGIS). ArcView® and SaTScan® are used to conduct spatial analysis to determine the extent of geographic correlation between childhood blood lead levels and rebuilding.

RESULTS: Preliminary comparison of the 2004 data to 2006-2008 data showed a reduction in the numbers and percent of children screened post-Katrina: from 7,115 (21%) in 2004 to 2,110 (14.6%), 4087 (26.6 %) and 5493 (34%) in 2006-2008 respectively. A substantial decrease in the percent of children with EBLs was observed long with a shift in the geographic distribution of EBLs post-Katrina. Before Katrina, the Africa-American, children aged 12-35 months and children with no Medicaid eligibility were at highest risk for elevated lead levels (odd ratio of 1.3, 1.5 and 2.1 respectively) but this changed after Katrina. SATscan showed significant clusters of EBLs cases along with and hazards introduced by rebuilding, demolitions: coordinates of 29.934950 N, 90.076470 W with radius of 0.64km, coordinates of 29.952910 N, 90.133640 W with radius of 0.16km, coordinates of 29.969370 N, 90.059050 W with radius of 0.42km

CONCLUSIONS: Analyzing the data geographically will focus program resources in areas most beneficial, and investigate the potential contribution of rebuilding-generated hazards.

PUBLIC HEALTH IMPLICATIONS: This examines the effects of rebuilding and the removal of lead hazards in older homes on EBLs. Coupled with GIS mapping, we can identify geographic areas and specific risk factors for EBLs, thus maximizing the ability to target primary prevention activities and reduce the cost of secondary prevention. Additionally, the results of this analysis will inform the development of public health messages

Concurrent Session D7

Lifestyle Factors and Child Health Outcomes

MEASURING LEVEL OF ANAEMIA AMONG HEALTH WORKERS AS AN APPROACH TO CONTROL ANAEMIA AMONG CHILDREN IN GYANPUR BLOCK OF UTTAR PRADESH STATE, INDIA

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BACKGROUND: Government of Uttar Pradesh State, India, has initiated on priority basis the anaemia control program among young children 6-23 months within the broad program of reproductive and child health on pilot basis to study what works and what does not. Prevalence of anaemia among young children was recorded to be as high as 84% in the survey conducted by A2Z, the USAID Micronutrient project in one block of Uttar Pradesh covering a population of 280,000. As part of the program, the training is conducted for all front line health care providers totaling to 467 for childhood anaemia control with the technical support from A2Z Micronutrient Program

STUDY QUESTIONS: How anaemic are these health care providers themselves who are supposed to be providing services for anaemia control?

METHODS: As a part of motivation and education to them, all frontline health workers' haemoglobin testing was done to show them their level of haemoglobin and measure anaemia prevalence among the front line health care providers. Those found anaemic, were given treatment. From fifteen batches of about 20-25 health workers in each batch, total of 467 front line workers were screened for anaemia prevalence using HemoCue 301 machine for the training. The results were instantly shared with them. Three categories of health workers were identified, auxiliary nurse midwife (ANM) who are full time, government paid employees covering 8000 population, aanganwadi workers (AWW), who are part time stipendiary workers from women and child development department who are covering 1000 population and supervisors for these two frontline health workers and volunteers working on incentives are known as Accredited Social health Activist (ASHA)

RESULTS: Total 61% (285/467) of health workers themselves were found to be anaemic using World Health organization criteria of 12 g/dL for women and 13 g/dL for men as the cut off points for diagnosis of anaemia. Among ANMs, 71% were anaemic, while AWW, most of them young women in reproductive age themselves, 58% were anaemic. 66% of ASHA volunteers were anaemic and 47% of supervisors were anaemic. This result was eye opening to all of them as well as Medical Officers who expected these workers to counsel their clients for anaemia control. Only 4 out of 467 health workers had their haemoglobin tested in last one year. Motivation of health workers after this exercise was very high for anaemia control activities. Medical officers followed up with these workers for treatment of anaemia and this further increased their counseling skills for their clients.

CONCLUSIONS: None of the health workers considered anaemia a serious morbidity. They did not know their own level of haemoglobin and this exercise proved very important step to educate and motivate them for anaemia control and for medical officers who work as their direct supervisors to stress on anaemia control in the region.

PUBLIC HEALTH IMPLICATIONS: Health Care Providers level of health is important and where behavior change is expected through counseling by health workers, it is necessary to ensure that health care workers are motivated and convinced of the services that they are providing to the client and practice them for their own health.

Concurrent Session E1

Improving MCH Systems of Care

THE MEDICAL HOME AND PREVENTIVE CARE SCREENINGS AND COUNSELING FOR CHILDREN

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BACKGROUND: The medical home for children is an approach to family-centered, community-based healthcare intended to deliver quality acute and preventive care. Receipt of certain components of preventive care for children, including advice about particular health topics, is low.

STUDY QUESTIONS: Does having a medical home improve receipt of age-appropriate, health-related screenings and advice (i.e., anticipatory guidance)?

METHODS: We conducted a cross-sectional analysis of the 2004-2006 Medical Expenditure Panel Survey (MEPS). Data were examined for children ages 0-17 years who had visited a health care provider in the year prior to the survey (N =21,055). Two binary indicators of the medical home were developed from 22 questions in MEPS, reflecting 4 of the 7 American Academy of Pediatrics' recommended components of the medical home. Multivariable logistic regression was used to examine the association between having a medical home, defined as either a person or as a person or facility, and receipt of specific health screenings and anticipatory guidance, controlling for confounding variables. In all models, standard errors account for MEPS' complex survey design.

RESULTS: Approximately 19% of children have a medical home if the medical home is defined as a person; whereas, 49% have a medical home if the definition is expanded to include a facility. Receipt of screenings or guidance in the past year ranges from 27% of children receiving advice on seat belt use to 93% of children having their weight measured. In fully adjusted multivariable models, both definitions of medical home are significantly associated with two health screenings (i.e., weight and height measured) and several anticipatory guidance topics (i.e., advice about dental check-ups, diet, and exercise), with odds ratios ranging from 1.23 – 1.47. Findings are limited by the self-report and cross-sectional nature of the data.

CONCLUSIONS: The medical home is associated with increased odds of children receiving some health screenings and anticipatory guidance.

PUBLIC HEALTH IMPLICATIONS: As state maternal and child health, Medicaid, and CHIP programs work to promote efficient and effective systems for the delivery of pediatric health care, the medical home model may serve as a viable opportunity to improve the delivery of components of well-child care, including health-related screenings and advice.

Concurrent Session E1

Improving MCH Systems of Care

THE USE OF Q-SORT METHODOLOGY TO OBTAIN STAKEHOLDER PARTICIPATION IN THE NEW MEXICO MATERNAL AND CHILD HEALTH NEEDS ASSESSMENT

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Boston University School of Public Health

BACKGROUND: The Title V Maternal and Child Health (MCH) Needs Assessment requires a thorough analysis of MCH needs statewide in order to establish priorities and objectives that best serve this population. Qualitative and quantitative data are collected to involve the perspective of multiple stakeholders to create a profile of need for the MCH population within a state.

STUDY QUESTIONS: How do stakeholders in New Mexico conceptualize MCH needs for their own communities, regions and for the state as a whole?

METHODS: Qualitative data was gathered and analyzed from both urban and rural areas within New Mexico to create an exhaustive list of priority needs for the MCH population within the state. A Q-sort process was utilized to ensure community and stakeholder input in this priority setting process. The Q-sort was administered during regional meetings statewide, and an online survey was created to be administered to stakeholders throughout the state.

RESULTS: Based on exploratory research during the regional meetings that utilized the Q-sort method, we found that stakeholders unanimously site health care coverage and access to care as the most important health need within New Mexico. Youth development and hunger/food insecurity were also listed by stakeholders as top MCH needs. The priority needs list within New Mexico will continue to evolve as more stakeholders participate in the online Q-sort.

CONCLUSIONS: The use of the Q-sort methodology has allowed us to reach a larger percentage of the stakeholder population and has provided a more balanced and inclusive list of priority needs for the 2010 Needs Assessment in New Mexico. While there were recurrent themes across the state, it is evident that stakeholders have very distinct and different health needs depending on their geography and their access to resources. Moreover, emerging issues such as hunger/food insecurity and youth mental health were not included in previous needs assessments.

PUBLIC HEALTH IMPLICATIONS: Using this methodology or a similar community participation method allows for a state or region to better represent the entire MCH population and therefore provide services that are more poignant and effective.

Concurrent Session E1

Improving MCH Systems of Care

A COMPARISON OF TWO SURVEILLANCE STRATEGIES FOR SELECTED BIRTH DEFECTS IN FLORIDA, 2003-06

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BACKGROUND: Surveillance programs use approaches to identify cases with birth defects (BD) that lie on a continuum ranging from "passive" (data linking, receiving case reports) to "active" (staff in hospitals to case find). Most states structure their activities around one approach on that continuum. However, the statewide, population-based Florida Birth Defects Registry (FBDR), a passive surveillance program relying solely on linkage of administrative datasets, also operates a smaller surveillance project with a comprehensive approach to case identification and diagnosis confirmation. By using these two approaches we have the opportunity to link data from the two systems and assess the FBDR on selected BDs in a limited catchment area.

STUDY QUESTIONS: What is the FBDR's estimated completeness of ascertainment for selected BDs and what are factors associated with failure to identify cases?

METHODS: Live-born infants from each approach born from 2003-2006 in a nine-county catchment area with selected BDs (neural tube defects, orofacial clefts, gastroschisis, and chromosomal defects) were linked to a common data source, the birth certificate file. We estimated the sensitivity of the FBDR for specific BDs, using the registry with case confirmation as the standard. Two-source capture-recapture models were used to estimate the FBDR's completeness of case ascertainment and the estimated prevalence of each BD in the catchment area.

RESULTS: The estimated completeness of ascertainment of the FBDR for selected BDs was 84.9% (84.1%, 85.6%). Estimated completeness for specific BDs ranged from 45.6% (39.8%, 53.4%) for anencephaly to 88.6% (87.4%, 89.9%) for Down syndrome. Factors associated with the FBDR's failure to identify an infant with one of the selected BDs were the infant being low/very low birthweight, being a multiple, and maternal birth in a foreign country.

CONCLUSIONS: While completeness of ascertainment of BDs in the FBDR varies by condition, coverage appears to be adequate for many public health functions. However, coverage is sufficiently incomplete to warrant caution in using these data for epidemiologic studies and clinical research purposes.

PUBLIC HEALTH IMPLICATIONS: Data from BD surveillance programs require careful assessment prior to use for services planning and evaluation, prevention strategies, education and referrals for services, and clinical research.

Concurrent Session E2

Workshop: Using State Data for Advocacy and to Speak to Policy Makers

Christina Bethell, PhD, MBA, MPH, Scott Stumbo, MA, Nora Wells
Child and Adolescent Health Measurement Initiative, Child and Adolescent Health Measurement Initiative, National Center for Family Professional Partnerships

DESCRIPTION OF WORKSHOP: This session provides concrete examples of data use to jump-start health services policy and system improvements for children, youth and families. Instruction and access to national and state-level findings on quality, access and equity of health care services for all children and children with special health care needs will be demonstrated with the Maternal and Child Health Bureau supported, user-friendly online Data Resource Center (DRC).

The 2007 National Survey of Children's Health (NSCH) and 2005/06 National Survey of Children with Special Health Care Needs (NS-CSHCN) will be introduced. This presentation will teach participants to easily access hundreds of findings from these datasets regardless of their current level of experience with using data. It will deepen their knowledge about using data to advocate for the improvement of health and community services, especially as it relates to MCH priorities. Successful improvement efforts in child health require engaged partners who understand the need for improvement. National and state-specific findings on youth and children with special health care needs arm advocacy workers with the evidence to demonstrate a variety of health and system needs and disparities. This session will deepen participant knowledge to define and consider global vs. condition or population specific needs for improving the quality and equity of care for all children and for CSHCN.

Topics include:

Coverage and Access
1) Insurance coverage, gaps in coverage and impact of uninsurance and type of coverage
2) Adequacy of insurance
3) Timely access to covered/needed care

Quality and Equity
4) Medical home for all children and children and youth with special health care needs
5) Mental, emotional and behavioral health
6) Health disparities for vulnerable populations (minorities, low income, by health status/CSHCN)

Prevention and Healthy Development
7) Childhood obesity (BMI, Activities, TV watching, etc)
8) Early childhood development
9) Transition to adulthood

JUSTIFICATION FOR WORKSHOP: This presentation will demonstrate why data is essential for advocacy and how to use data to justify that specific changes or programs you advocate for are worthwhile. We will demonstrate how family's stories give a face and heart to children's needs while data expands these stories to inform policy debates and drive change.

BIOGRAPHICAL SKETCH OF PRIMARY PRESENTERS: Dr. Bethell is Associate Professor in the School of Medicine at Oregon Health and Sciences University. She is the founding Director of The Child and Adolescent Health Measurement Initiative and the National Data Resource Center for Child and Adolescent Health. The CAHMI is a national initiative established in 1998 with the mission to advance a high quality, patient and consumer-centered health care system for children, youth and families. Dr. Bethell serves as principle investigator for the collaborative development, validation and national, state and local implementation of the tools such as The Promoting Healthy Development Survey (PHDS), The Young Adult Health Care Survey (YAHCS), the Children with Special Health Care Needs Screener (CSHCN Screener) and other child health and health care quality measurement tools, most of which have been endorsed for voluntary use

by the National Quality Forum. Currently, Dr. Bethell's work is focused on developing, disseminating and supporting the widespread use of health and health care services information through the federal Maternal and Child Health Bureau sponsored National Data Resource Center on Child and Adolescent Health (www.childhealthdata.org) as well as on projects to advance health and health services performance measurement and improvement in the area of preventive and developmental services and care for children with chronic conditions in pediatric offices and health plans. Prior to OHSU, Dr. Bethell served as Senior Vice President of the Foundation for Accountability. Dr. Bethell earned her Masters in Public Health and a Masters in Business Administration from the University of California, Berkeley and has earned a PhD in Health Services and Policy Research from the University of Chicago in 1996.

Nora Wells is Director, Family Voices National Center for Family/Professional Partnerships. Ms. Wells has worked for the past 25 years as a writer, public speaker, program and policy consultant and project director around the design and delivery of family centered health care services. In a collaborative project with Brandeis University, she co-directed a national survey of the health care experiences of families of children with special health care needs the "Your Voice Counts!!" with funding from the David and Lucile Packard Foundation. She has also directed the "From Data to Action" project, in which family leaders have interviewed managed care organizations in 12 states about policies for children with special health care needs. She is presently Director of Research Activities for Family Voices National Center for Family/Professional Partnerships. Family Voices research activities include collaborating with professionals, collecting and disseminating information and strengthening family leadership.

Concurrent Session E3

Smokin' U.S.A.

EXPOSURE TO CIGARETTE SMOKE AMONG INFANTS IN FLORIDA, 2001-2005

Marie Bailey, MA, MSW, Melissa Murray, MS, Tammie Johnson, DrPH
Florida Department of Health

BACKGROUND: Infant exposure to cigarette smoke is associated with infant mortality and morbidity. While the trend of reported infant exposure to cigarette smoke has significantly declined in Florida over the past several years, the rate of exposure remains high enough to warrant concern in the areas of respiratory illnesses and asthma among infants and children. To continue Florida's downward trend, we need to better understand the characteristics of the infants' primary caregivers.

STUDY QUESTIONS: What are the characteristics of mothers who report their infants being exposed to cigarette smoke compared to mothers who report that their infant is never exposed to cigarette smoke?

METHODS: The Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based surveillance system that collects information on maternal behaviors. Data were examined using the SUDAAN software package that adjusts for complex survey methodology and non-response. Florida PRAMS data from 2001-2005 were analyzed for trends, and data for 2003, 2004, and 2005 were analyzed using chi-square tests and logistic regression analysis to identify maternal factors associated with any infant exposure to cigarette smoke.

RESULTS: Logistic regression analysis showed that several maternal characteristics were associated with reporting any infant exposure to cigarette smoke: Non-Hispanic Whites were 2.8 (95% CI: 1.6, 5.1) times as likely as Hispanics; mothers younger than 25 were 1.8 (95% CI: 1.2, 2.9) times as likely as mothers age 25 and older; those whose pregnancies were unintended were 1.5 (95% CI: 1.0, 2.2) times as likely as those whose pregnancies were planned; Medicaid recipients were 1.8 (95% CI: 1.0, 3.0) times as likely as those who did not receive Medicaid; and current smokers were 3.2 (95% CI: 2.1, 4.9) times as likely than non-current smokers.

CONCLUSIONS: Our findings suggest that ethnicity, age, pregnancy intendedness, Medicaid status, and smoking status are significantly associated with infant exposure to cigarette smoke.

PUBLIC HEALTH IMPLICATIONS: The findings of this study can be used by public health programs to appropriately target new mothers who may need to be counseled about the adverse health effects of cigarette smoke exposure on infants.

Concurrent Session E3

Smokin' U.S.A.

PRENATAL SMOKING CESSATION FROM THE NORTHERN PLAINS TRIBAL PREGNANCY RISK ASSESSMENT MONITORING SYSTEM (NPTPRAMS)

Ssu Weng, MD, MPH, Christine Rinki, MPH, Jennifer Irving, MPH
Northern Plains Tribal Epidemiology Center

BACKGROUND: Maternal smoking during pregnancy increases the risk of infants with low birth weight, SIDS, and other conditions. In 2007, the infant mortality rate in one Northern Plains state was almost twice as high for NPAI (10.06 per 1,000 live births) as for whites (5.33).

STUDY QUESTIONS: Among women who smoked tobacco prior to pregnancy, what factors are associated with smoking cessation during the last thee months of pregnancy?

METHODS: Birth certificate (BC) and NPTPRAMS survey data for 948 respondents were combined to estimate maternal smoking rates. Bivariate tables and chi-square tests were used for associations between quitting and maternal demographics, receipt of prenatal services and tobacco-related services, awareness of Smoke Free Homes campaign, intention of pregnancy, source and payer of prenatal care, stressful events, abuse, and tribal smoking policy. Limitations include cross-sectional design and self-report.

For reviewers information, please remove the following if published:

The Aberdeen Area Indian Health Service IRB recently directed the authors to remove any reference to the state in which this PRAMS project was conducted in publications that also include presentation of survey results. Until this issue is resolved, all geographic references in publications or presentations must be 'Northern Plains' to protect tribal confidentiality.

RESULTS: Among mothers, 57.7% smoked during the 3 months before pregnancy, 38.4% during pregnancy, and 45.1% postpartum. 35.1% of pre-pregnancy smokers quit during pregnancy. Smoking cessation was more likely among women who completed at least 16 years of education (70.0% vs. 17.4% under eight years); did not report food insufficiency (37.6% vs. 25.0%); were light vs. moderate to heavy smokers (43.0% vs. 19.4%); had intended pregnancy (39.1% vs. unwanted, 23.2%); abstained from alcohol during the last trimester (36.0% vs. 22.3%); were not abused physically, emotionally or sexually during pregnancy (39.3% vs. 23.8%); reported 0-5 stressful events before delivery (37.3%) vs. 6-18 stresses (23.8%); did not perceive racial discrimination in healthcare before delivery (36.6% vs. 18.9%); received adequate prenatal care (43.3%) vs. inadequate/intermediate (29.4%). Preliminary results suggest no association with several prenatal health and tobacco-related services, but an association with tribal smoking policy. Correlations and interactions between services and psychosocial factors need further study. Comparisons are based on confidence intervals and chi square and need further testing.

CONCLUSIONS: Smoking cessation appeared more often related to behavioral and psychosocial factors than to receipt of health or tobacco services.

PUBLIC HEALTH IMPLICATIONS: Programs for smoking cessation require strong support for psychosocial issues.

Concurrent Session E3

Smokin' U.S.A.

SMOKING CESSATION AND POSTPARTUM DEPRESSION TWO YEARS AFTER LIVE BIRTH: ANALYSIS OF OREGON PRAMS-2 DATA, 2006

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BACKGROUND: Smoking cessation during pregnancy significantly reduces the adverse consequences for both mother and baby. Continued abstinence postpartum reduces a woman's lifetime risk for smoking related diseases and reduces children's exposure to tobacco smoke and its associated health risks. But, only about half of the women who quit smoking during pregnancy continue to stay quit postpartum.

STUDY QUESTIONS: Among women who quit smoking during pregnancy, which were most likely to continue not smoking 2 years after a live birth.

METHODS: Data are from the 2004 Oregon PRAMS and its 2-year longitudinal follow-up, PRAMS-2. 865 women responded to both PRAMS and PRAMS-2 (weighted response rate 38%). STATA version 10 was used for all statistical data analyses to account for oversampling and weighting.

RESULTS: 44.5% of PRAMS-2 respondents reported smoking before pregnancy reported quitting smoking during pregnancy (n=58). 59% of those who quit smoking during pregnancy, stayed quit 2 years postpartum. In multivariate analysis, after controlling for maternal age, maternal race/ethnicity and marital status, women who reported depressive symptoms 13-24 months after live birth were more likely to stay quit through at least 24 months after live birth (OR 11.27, 95% CI 1.83, 69.52).

CONCLUSIONS: We found that depressed women were more likely to continue to not smoke than non-depressed women. This was a surprising finding since some depressed women are reported to use nicotine as self-medication to combat depression - and smoking cessation sometimes precipitates depression. Women who report depressive symptoms 13-24 months after live birth may be chronic depressives, not typical postpartum depressives. At least one anti-depressive medication is also used to help smokers quit and stay quit.

PUBLIC HEALTH IMPLICATIONS: Depression and smoking are co-morbid conditions and should not be treated in isolation. More research is needed on using anti-depressants as a smoking cessation aid. Increased screening of depressive symptoms and smoking behaviors in new mothers is needed to understand this relationship.

Concurrent Session E4

Preconception: Just for Her, Just in Case

ARE U.S. PROVIDERS ORDERING FOLIC ACID FOR THEIR YOUNG, NON-PREGNANT PATIENTS SEEKING PREVENTATIVE CARE?

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BACKGROUND: Folic acid (FA) use started prior to pregnancy confers a decreased risk of neural tube defects, and may decrease the risk of preterm birth. Because approximately 20-50% of pregnancies are unplanned, the American College of Obstetricians and Gynecologists and the Institute of Medicine have published guidelines and policies that state that all woman of childbearing age should take daily 400 mcg of FA, the amount contained in a standard multivitamin (MVI).

STUDY QUESTIONS: How often do healthcare providers recommend FA or FA-containing MVIs to their non-pregnant, female patients of childbearing age and is there a racial disparity in these practices?

METHODS: This is a cross-sectional study using data from the Center for Disease Control and Prevention's National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS) (2005 and 2006). Among non-pregnant, female patients of childbearing age (15-44), the proportion of preventative health visits during which a provider ordered MVI or FA supplements was determined. Next, the rates of MVI/FA orders were compared among multiple covariates (Race/ethnicity, age, insurance status, region of the country, and provider type). Analysis was conducted using SAS-callable Sudaan to account for survey design and to obtain population estimates.

RESULTS: There were 4,634 preventative care visits for non-pregnant women of childbearing age, representing 32.1 million visits nationally. Overall, 7.16% of visits for non-pregnant women of childbearing age included provider-ordered FA supplements, as opposed to 43% of visits for pregnant women. Multivariate analyses revealed that "other" race/ethnicity, older age and Medicaid as the source of payment were all significantly ($P<0.05$) associated with visits that included provider-ordered FA.

CONCLUSIONS: Preventative care visits represent an important venue for anticipatory guidance regarding the benefits of FA for women of childbearing age, but appear to be under-utilized for all women. Annually there may be over 29 million missed opportunities during the course of preventative care.

PUBLIC HEALTH IMPLICATIONS: Primary care providers have a unique opportunity to improve rates of folic acid supplementation among non-pregnant women of childbearing age.

Concurrent Session E4

Preconception: Just for Her, Just in Case

PRECONCEPTION CARE COUNSELING VISIT NOT ASSOCIATED WITH PRE-PREGNANCY BMI

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BACKGROUND: Numerous studies have reported an association between pre-pregnancy body mass index (PPBMI), gestational weight gain, and birth outcomes. Monitoring preconception care visits (PCV) is important to understanding the potential for opportunities to educate women prior to pregnancy, including discussing healthy PPBMI, which may lead to improved maternal and infant health.

STUDY QUESTIONS: Is there an association between PPBMI and PCV?

METHODS: Linked PRAMS-birth 2004 data including information from 1,625 Louisiana women were used (response rate >70%). PPBMI was grouped according to the 1990 Institute of Medicine categories: underweight (<19.6), normal (19.6-25.9), overweight (26.0-29.0), and obese (>29.0). Analyses were done using SAS-callable SUDAAN to account for complex survey design; backwards elimination was used to identify significant variables (alpha=0.05) in the logistic regression model. Limitations include use of self-reported data and the inability to establish temporality/causality due to cross-sectional design.

RESULTS: The sample represented 62,078 Louisiana women who delivered in 2004. Less than 25% reported having PCV prior to pregnancy (24.3%,95%CI:23.9%,24.6%). The percent of women who reported having PCV in each of the four BMI categories ranged from 23.0% for underweight women to 25.7% for obese women, showing no statistical differences in PCV by PPBMI category.

CONCLUSIONS: There was no statistical association between PPBMI and PCV. Furthermore, the percent of women overall who reported having a PCV was low, suggesting need for pre- and inter-conception care promotion.

PUBLIC HEALTH IMPLICATIONS: PPBMI is an important factor to both maternal health and birth outcomes. Raising awareness of potential problems associated with overweight and obesity, especially for women who are considering becoming pregnant, is one of many necessary steps to improving overall health.

Concurrent Session E4

Preconception: Just for Her, Just in Case

PRECONCEPTION HEALTH STATUS AMONG NON-PREGNANT AND RECENTLY PREGNANT WOMEN: A COMPARISON OF FINDINGS FROM TWO POPULATION-BASED SURVEYS

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BACKGROUND: Data on preconception health generally come from two types of surveys—those among women in the general population and those among recent mothers. In California, these are the California Women's Health Survey (CWHS) and the Maternal and Infant Health Assessment (MIHA).

STUDY QUESTIONS: How does preconception health differ among women who could become pregnant and women who recently gave birth?

METHODS: Included are women aged 18-44 who had a recent live birth and participated in MIHA (n = 6,979) and women of the same age who could become pregnant and participated in the CWHS (n = 2,815) in 2006-2007. We examine pregnancy intention, frequent alcohol use (7+ drinks/week), folic acid intake, and overweight/obesity as reported at the time of the CWHS interview and before the most recent pregnancy by MIHA respondents.

RESULTS: Compared with CWHS, women in MIHA were more likely to be younger, Hispanic, married, and less educated. Overall, CWHS and MIHA women did not differ markedly on frequent alcohol use (5% vs. 3%), folic acid intake (42% vs. 45%), or overweight/obesity (46% vs. 43%). Only 7% of CWHS women were trying to get pregnant, whereas 57% of MIHA women intended pregnancy. In CWHS, trying to get pregnant was not associated with less alcohol use (OR = 1.16; 95% CI = 0.53, 2.55) or overweight/obesity (OR = 1.21; 95% CI = 0.85, 1.71) after adjusting for demographics. In MIHA, intending pregnancy was associated with a reduction in pre-pregnancy alcohol use (OR = 0.49; 95% CI = 0.29, 0.83) and overweight/obesity (OR = 0.84; 95% CI = 0.74, 0.95). In both surveys, intending was associated with folic acid intake.

CONCLUSIONS: It is generally assumed that preconception behaviors differ according to intent, yet trying to get pregnant was not necessarily associated with healthier behaviors in the general population. Although intention was associated with healthier preconception behaviors among recent mothers, recall may influence these results.

PUBLIC HEALTH IMPLICATIONS: Data on pregnancy expectations and health behaviors are important for informing policies and programs on women's health and preconception care, yet differences between surveillance systems with relevant data need to be better understood.

Concurrent Session E4

Preconception: Just for Her, Just in Case

STATUS OF PRECONCEPTION INDICATORS IN AN URBAN POPULATION OF LOW INCOME WOMEN AT ENTRY TO PRENATAL CARE

Deborah Ehrenthal, MD, Stephanie Rogers, RN
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BACKGROUND: Concrete outcomes of preconception care measurable at the time of conception for all women include pregnancy intendedness, folic acid use, and adequacy of birth spacing.

STUDY QUESTIONS: Is pregnancy planning associated with folic acid use or adequate inter-pregnancy interval in a population of low income women living in an urban setting?

METHODS: We used baseline data collected during a structured interview from women entering prenatal care in an urban practice setting and restricted our analysis to women without private health insurance. Indicators of preconception care included pregnancy intendedness, folic acid use, and inter-pregnancy interval of at least 12 months. Chi-squared and logistic regression were done using SPSS v16.0.

RESULTS: We explored responses from 800 women including 62% black and 32% white women with an average age of 24 years; 43% were nulliparous. Overall 17.4% stated their pregnancy was planned, 24.9% were taking folic acid or a multi-vitamin at the time they conceived, and 75.7% of multi-gravidas' most recent inter-pregnancy interval was greater than 12 months. Maternal age was significantly predictive of favorable preconception indicators with increasing rates of pregnancy planning ($p<0.001$) and rates of folic acid use ($p<0.03$) with increasing age. Race was also predictive and lowest rates of planned pregnancies ($p<0.0001$) and folic acid use ($p<0.01$) were seen among blacks compared to white or others. A planned pregnancy was associated with greater odds of folic acid use (aOR=1.58; 95% CI 1.05-2.38) and an inter-pregnancy interval greater than 12 months (aOR=2.30; 95% CI 1.02-5.19) after adjusting for maternal age and race.

CONCLUSIONS: We found low rates of pregnancy planning and folic acid use overall, but lowest rates were among black women. Increasing age was associated with significant increase in adequacy of preconception indicators for all women. A planned pregnancy was associated with use of folic Acid as well as an inter-pregnancy interval of at least 12 months.

PUBLIC HEALTH IMPLICATIONS: Disparities in preconception status at entry to prenatal care were greatest for younger women and black women suggesting them as key groups to target with preconception care messages with a focus on pregnancy planning.

Concurrent Session E5

Life Course Perspective: Not Just Water Under the Bridge

PERINATAL ETIOLOGY OF CARDIOVASCULAR DISEASE RISK FACTORS IN YOUNG CHILDREN: A POPULATION-BASED ANALYSIS

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University of Miami Miller School of Medicine

BACKGROUND: Approximately 26% of US 2-to-6-year olds are overweight (body mass index [BMI] > 85th %ile for age and sex) yet little is known about the relationship between weight, cardiometabolic disease risk factors and perinatal etiology among young children.

STUDY QUESTIONS: Do perintal factors, and mother's smoking status during pregnancy and presence of breastfeeding in particular, influence children's cardiometabolic health (e.g. weight, lipid profiles) in the early childhood years?

METHODS: Representative samples of 3- to 6-year olds (N=2,922) from the 1999- 2006 National Health and Nutrition Examination Survey were used to examine the relationships between BMI, waist circumference (WC), C-reactive protein (CRP), triglyceride, total and HDL cholesterol and mother's smoking status during pregnancy, and infant feeding method. The 85th %ile was used as a cut-point to define normal/abnormal BMI and the 75th %ile for WC was similarly applied. The 90th percentile was used as a cut-point for abnormal CRP, LDL and total cholesterol, and triglyceride and the 10th percentile for HDL cholesterol.

RESULTS: Non-Hispanic black women who breastfed were significantly less likely to have a 3-to-6 year old with a BMI > 95th %ile (OR = 0.62, 95% CI 0.42, 0.90), a WC > 90th %ile (OR = 0.54, 95% CI, 0.36, 0.79), and LDL cholesterol > 90th %ile (OR = 0.45, 95% CI, 0.20, 1.01). Similarly, breastfeeding was protective against abnormal levels of CRP, LDL, HDL and total cholesterol in this ethnic group. Non-Hispanic black children who were fed solid foods fed before 6 months were significantly more likely to have a BMI > 95th %ile (OR = 1.64, 95% CI,1.13, 2.42). Hispanic women who smoked during pregnancy were more likely than not to have an obese 3-to-6 year old (OR= 1.62, 95% CI 0.96, 2.71).

CONCLUSIONS: Cardiometabolic disease risk in young children is associated with perinatal factors. Minority women should not smoke and should be encouraged to breastfeed as their children are disproportionately affected by the obesity epidemic, which in turn is a risk factor for later life onset of cardiometabolic disease.

PUBLIC HEALTH IMPLICATIONS: Childhood obesity is a public health epidemic in the United States. If risk factors for obesity can be identified as early as possible, and ideally during the perinatal period of development, maternal education can be implemented.

Concurrent Session E5

Life Course Perspective: Not Just Water Under the Bridge

ASSOCIATION BETWEEN SUBTYPES OF INTRAUTERINE GROWTH RESTRICTION WITH OR WITHOUT MATERNAL SMOKING DURING PREGNANCY AND THE RISK OF HYPERCHOLESTEROLEMIA IN LATER LIFE: A 40-YEAR COHORT STUDY

Xiaozhong Wen, PhD Candidate*, Jospeh Hogan, ScD, Elizabeth Triche, PhD, Edmond Shenassa, ScD Stephen Buka, ScD

Epidemiology Section, Department of Community Health, Brown University, Center for Statistical Sciences, DepartmentvDepartment of Community Health, Brown University, Maternal & Child Health Program, School of Public Health, University of Maryland

BACKGROUND: Intrauterine growth restriction (IUGR) is associated with high risk of hypercholesterolemia in adults, which can be explained by the fetal programming hypothesis. But birth size is likely to be a proxy of some genetic and environmental factors that truly cause hypercholesterolemia. As an important determinant of IUGR, maternal smoking during pregnancy is a reasonable starting point to identify IUGR subtypes at high risk of hypercholesterolemia.

STUDY QUESTIONS: Which subtypes of IUGR are at high risk of hypercholesterolemia in later life?

METHODS: Self-reported medical history of hypercholesterolemia was obtained in structure interviews among 1,370 subjects aged 34~44 years in the New England Family Study (1959-2000). Based on birth records, we classified subjects by fetal growth (small for gestational age, SGA vs. appropriate for gestational age, AGA) and maternal smoking status during pregnancy (non-smoking, moderate, and heavy smoking). Kaplan-Meier product-limit estimate and Cox proportional hazard regression were used to investigate the associations. We also examined the mediating effect of growth trajectory in childhood and adolescence.

RESULTS: Subjects born SGA were more likely to develop hypercholesterolemia by age 44 years than subjects born AGA (cumulative incidence, 34.1% vs. 24.3%). Only the SGA subgroups with maternal smoking had higher risk of hypercholesterolemia (adjusted hazard ratio and 95% confidence interval: moderate smoking, 1.70 [1.02-2.83]; heavy smoking, 2.45 [1.40-4.29]), compared with the AGA subgroup without maternal smoking. These associations were stronger among males than females. Among all SGA and AGA subgroups, the SGA subgroup with heavy maternal smoking had the greatest increase in body mass index (BMI) during childhood and adolescence. Additional adjustment for the changes in weight, height and BMI during childhood and adolescence did not result in any substantial reductions in the estimated associations.

CONCLUSIONS: Only IUGR subtypes with maternal smoking during pregnancy had a high risk of hypercholesterolemia up to early middle age, which could not be explained by differential growth trajectory in childhood and adolescence. Fetal hypoxia and nicotine may play a role in pathways.

PUBLIC HEALTH IMPLICATIONS: The intergenerational effect of maternal smoking during pregnancy on offspring's risk of hypercholesterolemia adds to the rational for smoking cessation among pregnant women.

Concurrent Session E5

Life Course Perspective: Not Just Water Under the Bridge

LOW BIRTH WEIGHT ACROSS GENERATIONS: GENETICS, EPIGENETICS, OR ENVIRONMENTS?

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BACKGROUND: For unclear reasons, maternal low birth weight (< 2500g, LBW) is a risk factor for infant LBW independent of risk status during the current pregnancy.

STUDY QUESTIONS: To what extent does neighborhood poverty across generations underlie the association of maternal and infant LBW? What proportion of LBW infants are attributable to generational exposure to neighborhood poverty among former non-LBW White and African-American mothers?

METHODS: Stratified and multilevel logistic regression analyses were performed on an Illinois transgenerational birth file of non-Latino White and African-American singleton infants (the 1989-1991 birth cohort) and their mothers (the 1956-1976 birth cohort). For Cook County residents, 1990 census data was appended to the infant generation and 1960/1970 US census data were appended to the maternal generation.

RESULTS: Among White infants (N=12,043), the LBW rate was 6.8 % for those of former LBW mothers compared to 3.7% for those of former non-LBW mothers, RR= 1.8 (1.3-2.4). Among African-American infants (N=21,693), the LBW rate was 19.1% for those of former LBW mothers compared to 13.0% for those of former non-LBW mothers, RR= 1.5 (1.3-1.6). In multilevel logistic regression models that accounted for clustering by mother's residential environment, the adjusted (controlling for maternal sociodemographic characteristics, prenatal care usage, and grandmother's residential environment) odds ratio of infant LBW for former LBW (compared to non-LBW) White and African-American mothers equaled 1.9 (1.3-2.6) and 1.6 (1.4-1.7), respectively. Among White (N=10,099) and African-American (N=506) infants with mothers and maternal grandmothers who resided in high-income neighborhoods during their pregnancies, the population attributable risk (PAR) of LBW for maternal LBW were 5.0% and 4.2%, respectively. Among former non-LBW White and African-American mothers, the PAR of infant LBW for generational residence in low-income neighborhoods were 24% and 3.5%, respectively.

CONCLUSIONS: Maternal LBW is a risk factor for infant LBW independent of generational exposure to neighborhood poverty; and, this generational transmission phenomenon works the same in both races. A disproportionately large percentage of LBW African-American births are attributable to generational impoverishment.

PUBLIC HEALTH IMPLICATIONS: These findings strongly suggest that non-genetic factors underlie the racial disparity in LBW rates.

Concurrent Session E5

Life Course Perspective: Not Just Water Under the Bridge

SLEEP AND THE DEVELOPMENT OF OBESITY IN YOUNG CHILDREN

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BACKGROUND: Recent studies suggest that shorter sleep duration may increase the risk of obesity in children and youth. Little is known the timing of the relationship between sleep and obesity and whether the relationship is lasting or dissipates over time.

STUDY QUESTIONS: Do daytime and nighttime sleep have independent effects on subsequent obesity in children and youth? At what age is the association between sleep and obesity apparent? Does poor sleep in early life have lasting effects on obesity measured years later?

METHODS: We conducted a longitudinal analysis of the Panel Survey of Income Dynamics, Child Development Supplements in 1997 and 2002. The outcome was body mass index in 2002, converted to z-scores and trichotomized as normal weight, overweight or obese using established cut-points. Family time diary data were used to calculate duration of daytime and nighttime sleep for n = 1,678 children ages 0 – 12 in 1997. Ordered logistic regression was used to model association between 1997 sleep and 1997 weight status, controlling for 2002 sleep, demographic characteristics, television viewing, socioeconomic status, mother's BMI, and, for children over age 5, the child's baseline BMI. Standard errors were adjusted to account for the complex sampling design.

RESULTS: For children ages 0 – 4 at baseline, duration of nighttime sleep in 1997 was strongly associated with obesity in 2002, controlling for sleep in 2002. In older children, sleep duration was not associated with subsequent obesity. Daytime sleep had little effect on subsequent obesity at any age. In children ages 0 – 4, the optimal amount of nighttime sleep was approximately 9.5 hours, with an extra hour for children having < 9.5 hours associated with reduced risk of obesity. For these children, duration of sleep in 1997 was more closely associated with obesity in 2002 than was duration of sleep in 2002.

CONCLUSIONS: Duration of nighttime sleep in children ages 0 – 4 was associated with obesity at ages 5 – 9. Napping had no effects on the development of obesity. Poor sleep duration at ages 0-4 appears to be a lasting risk-factor for subsequent obesity.

PUBLIC HEALTH IMPLICATIONS: Sleep duration is a modifiable risk factor that could have important implications for obesity prevention and treatment.

Concurrent Session E6

Too Much to Carry? The Burden of Chronic Disease in Pregnancy

TRACKING GESTATIONAL DIABETES MELLITUS IN MASSACHUSETTS: OPPORTUNITIES AND CHALLENGES

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BACKGROUND: The prevalence of gestational diabetes mellitus (GDM) in Massachusetts (MA) rose 44% during 1998-2006. This increase might be associated with changing characteristics of women giving birth in MA. Supplementing birth certificate data with hospital discharge (HD) records could improve the description of GDM occurrence in MA.

STUDY QUESTIONS: How can linked data enhance surveillance for diabetes during pregnancy and what factors are associated with GDM in MA?

METHODS: We linked data from birth certificates and fetal death reports (BC/FD) with HD records for mothers with deliveries during 1998-2006. We identified women with documented GDM or pre-existing/chronic diabetes mellitus (DM) using both BC/FD and HD (ICD-9-CM-Codes 648.8 and 250.0), and compared information from both sources. We calculated the prevalence of GDM by maternal characteristics (race/ethnicity, age, parity, plurality) and estimated their respective adjusted population attributable fraction (aPAF). Information on other important risk factors for GDM such as pre-pregnancy body mass index (BMI) was not available from either data source.

RESULTS: During 1998-2006, there were 658,834 unique deliveries in MA. A total of 29,155 (4.2%) women had GDM reported on either BC/FD or HD. For 12,597 women, GDM information from BC/FD and HD were discordant. There were 4,076 women with GDM reported on BC/FD but not HD, and 8,521 women with GDM reported on HD but not BC/FD. The overall prevalence of GDM increased from 3.4% in 1998 to 4.9% in 2006. The aPAFs for race, age, parity, and plurality were 12.2%, 23.1%, 4.4%, and 1.1%, respectively. The prevalence of pre-existing DM was 1.0% (6,767). For 4,853 women, DM information from BC/FD and HD were discordant.

CONCLUSIONS: Our findings indicate that combining data from BC/FD and HD enhances the ability to capture women with GDM and DM. Maternal age was strongly associated with GDM. If older women were to become pregnant between the ages of 20 and 29 years, we would expect approximately 6,700 fewer cases of GDM. Information on BMI could change these results.

PUBLIC HEALTH IMPLICATIONS: Improved identification of women with GDM and understanding factors that contribute to the development of GDM is key to reducing poor health outcomes.

Concurrent Session E6

Too Much to Carry? The Burden of Chronic Disease in Pregnancy

PSYCHOSOCIAL STRESS ASSOCIATED WITH GESTATIONAL DIABETES MELLITUS

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BACKGROUND: Psychosocial stress has been proposed to cause insulin resistance via psychoendocrine pathways. Few studies have examined the association between prenatal psychosocial stress and gestational diabetes mellitus (GDM).

STUDY QUESTIONS: Is prenatal psychosocial stress associated with higher prevalence of GDM? Which types of stress are associated with GDM?

METHODS: The 2007 Missouri Pregnancy Risk Assessment Monitoring System (PRAMS) surveyed 1,390 women with a recent live birth by mail and phone. The study was limited to the 1,360 women without pre-existing diabetes. Stress was measured by stressful circumstances experienced during the year prior to delivery, both the number (none, 1-2, 3-5, 6+) and types (financial, relationship, illness or death, relocation, and arrest). Multivariate binomial regression analysis was used to estimate prevalence ratios (APRs) and 95% confidence intervals (CIs) for GDM adjusted for maternal age, race, prenatal care payer, cigarette smoking, alcohol drinking, prepregnancy obesity, and hypertension. SUDAAN was used to account for complex sampling design.

RESULTS: Among study women with recent live births, 8.2% reported having GDM, and 73.4% experienced one or more stresses before and during pregnancy. The three most commonly reported stresses were relocation (39.1%), family member illness (28.2%), and arguments with husband/partner (28%). There was a significant linear trend (p=0.03) in increasing APRs with increasing number of stresses (APR for 1-2 stresses: 1.39, 95% CI: 0.82-2.38; APR for 3-5 stresses: 1.92, 95% CI: 1.09-3.37; APR for 6+ stresses: 2.27, 95% CI: 0.94-5.50). Having stress related to relationships, such as divorce, separation, arguments, etc, (APR: 1.56, 95% CI: 0.99-2.46) and relocation (APR: 1.52, 95% CI: 0.99-2.33) showed marginally significant associations with GDM after adjustment for other types of stresses and other risk factors.

CONCLUSIONS: The number of stresses was positively associated with GDM. Experiencing stress related to relationships and relocation was marginally associated with an increased prevalence of GDM.

PUBLIC HEALTH IMPLICATIONS: These findings suggest psychosocial stress as a non-traditional risk factor for GDM. Future studies are needed to replicate our findings and better identify the relationship and timing of stress and GDM.

Concurrent Session E6

Too Much to Carry? The Burden of Chronic Disease in Pregnancy

WHAT IS THE BURDEN OF CHRONIC DISEASE RISK FACTORS AND CONDITIONS AMONG LOW-INCOME WOMEN WHO RECENTLY DELIVERED A LIVE BIRTH?

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BACKGROUND: Women of reproductive age with chronic disease are at increased risk for poor pregnancy outcomes. Low-income women may be more likely to have chronic diseases when they become pregnant and to lack health insurance. Understanding the burden of chronic disease and related risk factors among low-income women may help service providers plan ways to better meet their health needs.

STUDY QUESTIONS: What is the prevalence of selected chronic disease and related risk factors among low-income women who recently delivered a live birth?

METHODS: We analyzed data from the 2005-2006 Pregnancy Risk Assessment Monitoring System (PRAMS) and corresponding birth certificate. Data from 16,437 women were weighted to represent all women delivering live births in each of the 7 states. We examined the following: burden of pre-existing diabetes, gestational diabetes, any hypertension, and, smoking or binge drinking 3 months before pregnancy, smoking during pregnancy, excessive weight gain during pregnancy, and postpartum depressive symptoms by Federal Poverty Level (FPL). Chi square tests for independence were conducted to test for differences in chronic disease condition and risk factors between low-income women (<100% FPL) and higher income women (>250% FPL).

RESULTS: One-third of women were low-income. Among low-income women, two-thirds reported 2+ chronic disease conditions or risk factors and one-half reported having no health insurance prior to pregnancy. The most common risk factors reported were excessive weight gain during pregnancy (49.7%), smoking before pregnancy (34.2%), and obesity (25.5%). Compared to higher income women, low-income women were more likely ($p < .05$) to have pre-existing diabetes (2.9% vs. 1.1%), smoke before (34.2% vs. 14.4%) and during pregnancy (24.8% vs. 5.4%), to be obese (25.5% vs. 18.7%), and experience postpartum depressive symptoms (23.3% vs. 7.9%).

CONCLUSIONS: Compared to higher income women, low-income women with live births experience higher rates of selected chronic disease conditions and corresponding risk factors.

PUBLIC HEALTH IMPLICATIONS: Publicly funded family planning clinics currently provide services (e.g. contraceptive care, cancer screenings) for low-income women who are unlikely to receive care elsewhere. Expanding these services to further address chronic disease conditions and risk factors may be needed to improve their health and future pregnancy outcomes.

Concurrent Session E6

Too Much to Carry? The Burden of Chronic Disease in Pregnancy

OBSTETRIC HOSPITALIZATIONS WITH HEART DISEASE AND SEVERE MORBIDITY IN THE UNITED STATES

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BACKGROUND: In developed countries, the number of maternal deaths associated with heart disease has been increasing during last two decades. Currently, nationwide surveillance of severe maternal morbidity is recognized as a valuable tool to complement maternal mortality audit.

STUDY QUESTIONS: Did the prevalence of delivery and postpartum hospitalizations with heart disease such as valve disease, congenital heart disease, dysrhythmias, cardiomyopathy/heart failure and others increase in the United States from 1995-1997 to 2004-2006? Do these hospitalizations contribute substantially to severe maternal morbidity (acute renal failure, pulmonary embolism, cardiac arrest, acute myocardial infarction, shock, sepsis, etc.)?

METHODS: Estimated 47,882,817 delivery and 660,038 postpartum discharges were identified from the 1995-2006 Nationwide Inpatient Sample. The odds ratios examining the associations of each category of severe morbidity and a composite outcome (defined as having at least one severe morbidity) with heart disease were obtained from multivariate logistic models after adjusting for age, hospital characteristics, and chronic conditions. The contribution of heart disease to severe morbidity was estimated using adjusted population attributable fractions.

RESULTS: During the period of study no substantial changes in the prevalence of heart disease were observed among delivery hospitalizations (range 12.9-14.8 per 1,000 deliveries). In contrast, the rate of postpartum hospitalizations with heart disease per 1,000 deliveries increased from 0.48 in 1995-1997 to 1.44 in 2004-2006 (p for linear trend<.001). In 2004-2006, delivery and postpartum hospitalizations with heart disease were 8.4 and 3.4 times, respectively, more likely to be complicated with at least one severe complication compare to hospitalizations without heart disease. Hospitalizations with heart disease contributed to 13.5% of delivery and 16.6% of postpartum hospitalizations with composite severe morbidity.

CONCLUSIONS: The prevalence of heart disease, a substantial contributor to maternal morbidity, is significant among obstetric hospitalizations in the United States. The rate of postpartum hospitalizations with heart disease tripled between 1995-1997 and 2004-2006.

PUBLIC HEALTH IMPLICATIONS: Nationwide surveillance signals an increase in rates of heart disease in the postpartum period. Taking action on these findings requires focused efforts with more nuanced clinical information to understand the implications for maternal health.

Concurrent Session E7

Perinatal Care and Outcomes

DETERMINANTS OF PERINATAL MORTALITY IN MARONDERA DISTRICT, MASHONALAND EAST PROVINCE, ZIMBABWE 2009

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BACKGROUND: Perinatal mortality is an important indicator for child health. Millennium development goal of reducing child mortality cannot be reached without reducing perinatal mortality. Marondera district located Mashonaland East Province of Zimbabwe recorded perinatal mortality ratios of 58.6/1000 and 64.6/1000 in 2007 and 2008 respectively. These ratios were above Mashonaland East provincial averages of 32/1000 and 36/1000 during the same periods. We conducted this study to determine factors associated with perinatal mortality in Marondera district.

STUDY QUESTIONS: What are the factors associated with perinatal mortality in Mashonaland East Province?

METHODS: A 1:2 unmatched case control study was carried out from June to August 2009. We interviewed 103 cases and 206 controls. A case was any mother in Marondera district who had a stillbirth or early neonatal death from 01/08/2008 to 31/07/2009. A control was any mother whose baby survived the perinatal period during the same period. We used the following variables to control for confounding in the analysis: parity, place of delivery and presence or absence of pregnancy complications

RESULTS: Primary or no maternal education [Unadjusted OR (UOR) =5.50 (3.14-9.33)] labor complications [UOR=7.56 (4.38-13.06)], home delivery [UOR=7.38 (4.03-13.68)] and preterm delivery [UOR=15.06 (8.24-27.54)] increased the risk for perinatal mortality when compared to women with normal births. Antenatal care appointments [UOR=0.19 (0.10-0.34)], having a gainfully employed husband [UOR=0.36 (0.20-0.63)] and living within 5km of a health facility [UOR=0.41 (0.22-0.78)] reduced the risk of perinatal mortality. Independent determinants of perinatal mortality included being of apostolic religion [Adjusted OR (AOR)=3.11 (1.05-9.18)], having a home delivery [AOR 7.17 (2.48-20.73)], experiencing labor complications [AOR=8.99 (3.11-25.98)], maternal HIV infection [A OR=5.36 (2.02-14.26)], antenatal care appointments [AOR=0.32 (0.18-0.87)] and delivering a low birth weight infant [AOR=9.46 (3.91-27.65)].

CONCLUSIONS: Labor complications, inadequate resources and inaccessible health facilities contributed to perinatal mortality. Antenatal care booking and delivering in health institutions are important in reducing perinatal mortality.

PUBLIC HEALTH IMPLICATIONS: We recommend improvement in quality of obstetric care, training of health workers in management of obstetric and neonatal emergencies, education of pregnant women targeting antenatal care and institutional deliveries and initiation of dialogue with members of the Apostolic faith.

Concurrent Session E7

Perinatal Care and Outcomes

LABOR INDUCTION AMONG LOW RISK WOMEN: THE RISK FOR PRIMARY CESAREAN DELIVERY, MASSACHUSETTS, 2001-2007

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BACKGROUND: Elective induction has become more common before 39 weeks gestation. Concurrently, the primary cesarean delivery rate continues to increase. Recent research on elective induction conflicts with previous studies demonstrating an increased risk of cesarean delivery among primiparas. Additional studies are needed to further explore the association.

STUDY QUESTIONS: Is elective induction associated with primary cesarean delivery among women with no medical indications? What factors are associated with increased risk for primary cesarean among these low risk women who were induced?

METHODS: We used the Massachusetts birth certificate (BC) data from 2001-2007. This analysis was restricted to singleton births, between 35-38 gestational weeks. We excluded women with the following medical indications for induction: eclampsia, hypertension, diabetes, renal disease, premature rupture of the membranes, placental abruption and placenta previa. Women with labor/delivery complications and repeat cesareans were also excluded. This final study population defined as "low risk" had 69,576 births. We used univariate analyses and logistic regression modeling to determine the association between labor induction and primary cesarean delivery controlling for maternal age, education, race/Hispanic ethnicity, parity, and gestational age. Limitations of this analysis include inaccurate BC reporting and potential missing medical indications for induction.

RESULTS: Of the 69,576 births included in our analysis, 14.8% were induced and 8.8% of these women delivered by primary cesarean, compared to 8.6% who were not induced. In the adjusted model, women who were defined as low risk and induced had a similar risk (RR 1.05; CI: 0.98, 1.13) for primary cesarean section compared to women who were not induced. However, among low risk women who were induced, the risk for primary cesarean was 6 times higher for primiparas compared to multiparas (RR 6.28; CI: 5.35, 7.38) and 30% higher at 35-36 weeks gestation compared to 37-38 weeks (RR 1.32; CI: 1.11, 1.55).

CONCLUSIONS: Low risk primiparous women and women at 35-36 gestational weeks induced into labor are at an increased risk of primary cesarean delivery. Additional research is needed to confirm these relationships.

PUBLIC HEALTH IMPLICATIONS: Primiparous women and women at 35-36 gestational weeks should be advised about the risk of primary cesarean delivery when discussing elective induction of labor.

Concurrent Session E7

Perinatal Care and Outcomes

PERINATAL REGIONALIZATION FOR VERY LOW BIRTH WEIGHT INFANTS: A META-ANALYSIS OF THREE DECADES OF EVIDENCE

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BACKGROUND: The systems of perinatal regionalization that emerged in the 1970s organized neonatal care into three levels within geographical regions, with level III hospitals providing specialized care needed by high-risk infants. Though guidelines have shifted over the years to reflect changes in neonatology and hospital systems, recommendations for the birth of very low birth weight (VLBW) infants (<1500g) at tertiary hospitals have remained consistent. Despite these recommendations, some regions continue to see large percentages of VLBW infants born in lower-level hospitals, and many systems appear to be de-regionalizing.

STUDY QUESTIONS: 1) What is the combined measure of effect of published data on hospital level of birth and neonatal/ pre-discharge mortality for VLBW infants, and 2) Does that effect vary based on differences in study methodologies or population?

METHODS: A comprehensive search strategy and a priori inclusion criteria were used to select studies. Odds ratios (OR), 95% confidence intervals (CI), heterogeneity statistics, and meta-regression were calculated using Comprehensive Meta-Analysis 2.0 software.

RESULTS: Thirty-nine studies published between 1978 and 2008 were included for meta-analysis. VLBW infants born at non-level III hospitals had a 45% increase in odds of neonatal/pre-discharge mortality compared to those born at level III hospitals (OR 1.45, 95% CI 1.27-1.66). The largest impact was seen among <1000g birth weight infants born at level I hospitals (OR 2.82, 95% CI 2.34-3.40). Significant effect was also seen for births at level II hospitals (OR 1.48, 95% CI 1.24-1.77), but not at enhanced level II hospitals (OR 1.24, 95% CI 0.91-1.68). Studies published after 2000 also showed no significant effect (OR 1.14, 95% CI 0.90-1.44). Results are based on hospital of birth regardless of subsequent transfer, and do not reflect level of care received to outcome.

CONCLUSIONS: The cumulative body of evidence still suggests improved outcomes for VLBW infants born at tertiary hospitals. However, effect varied by hospital level of comparison, decade of publication, and birth weight.

PUBLIC HEALTH IMPLICATIONS: Differential access to care and disparities in perinatal outcomes highlight the need for a system organized by medical condition of the infant. Strengthening regionalized perinatal systems may help states improve outcomes for high-risk infants. The results of this meta-analysis can assist states in planning for MCHB-Title V objectives.

Concurrent Session E7

Perinatal Care and Outcomes

REASONS FOR THE INCREASING HISPANIC INFANT MORTALITY RATE — FLORIDA, 2004–2007

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BACKGROUND: Since 1996, Florida's infant mortality rate (IMR) has ceased to decline. In contrast, Florida's Hispanic IMR (HIMR) increased by 50% during 2004–2007. Because of changes to Florida's death certificate in 2004, whether this increase is real or an artifact is unclear.

STUDY QUESTIONS: Why did Florida's HIMR increase during 2004–2007?

METHODS: Our study included all live births occurring instate to Florida residents, using 2004–2007 linked birth and infant death certificates. Hispanic was defined as Mexican (n = 68,465), Puerto Rican (n = 45,477), Cuban (n = 45,974), Central/South American (n = 87,719), or other/unknown Hispanic (n = 14,786). Routine HIMR uses infant Hispanic classification for deaths, but maternal Hispanic classification for births. We calculated a nonroutine HIMR by using maternal Hispanic classification for both births and deaths. We used rates and Chi-square to assess trends. Kappa was used to assess agreement for maternal and infant ethnicity. Kitagawa method was used to assess the contribution of birthweight to HIMR.

RESULTS: Routine HIMR increased 50% from 4.0 in 2004 to 6.0 in 2007 ($P < .001$). However, nonroutine HIMR increased only 20% from 4.5 in 2004 to 5.4 in 2007 ($P = .04$). The change in Hispanic reporting on death certificates after 2004 accounted for 55% of the routine HIMR increase. During this time, the agreement in maternal and infant ethnicity did not change as measured by Kappa. In the nonroutine analyses, the number of live births and HIMR increased among all Hispanic groups except Central/South Americans; HIMR increased among both U.S. and foreign-born mothers. The Kitagawa method indicated that an increase in lower birthweights for Hispanics contributed to 30% of the nonroutine increase.

CONCLUSIONS: Differences in Hispanic reporting on the revised death certificates accounted for the majority of the routine HIMR increase. However, a 20% increase was observed by using the nonroutine HIMR.

PUBLIC HEALTH IMPLICATIONS: States implementing the new death certificate should be aware of increased reporting of Hispanic ethnicity and consider use of the nonroutine HIMR for consistency. The interpretation of ethnicity on birth and death certificate data should be considered in understanding infant mortality.

Concurrent Session F1

Influenza and Pregnancy: Updates on the H1N1 Situation

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INTRODUCTION TO THE TOPIC: Flu preparedness has been a concern for CDC and for state health departments for many years. CDC (DRH and NCBDDD) began formal planning in October 2007, with a meeting of disaster preparedness partners who met to discuss anticipated hospital access issues for pregnant women and infants during pandemic influenza. In April 2008, DRH, the Vulnerable Populations Workgroup, Association of Maternal and Child Health Programs (AMCHP), and NCBDDD collaborated to convene a group of subject matter experts to identify the evidence, gaps, and best practices related to pandemic influenza and pregnant women in regards to vaccine, treatment, non-pharmaceutical interventions, and communications strategies. In spring 2009, the first cases of H1N1 flu were reported in pregnant women. There were 30 hospitalizations and 6 deaths among pregnant women in the US reported in Lancet, July 2009; as of August 21, 2009, there had been 28 deaths. Many more cases are expected through the fall and winter. Obstetric complications reported to CDC as of July 2009 include pregnancy loss, preterm birth, respiratory failure requiring mechanical ventilation, hospitalization, and death. Infants and young children have been disproportionately affected during this outbreak also, with severe outcomes ranging from respiratory failure to death. To date, 2009 H1N1 influenza has caused greater disease burden on people younger than 25 years of age than older people. Based on findings from seasonal influenza, CDC predicted that certain groups within the pediatric age range might also have a higher risk for severe complications from the 2009 H1N1 virus infection. Children with chronic underlying health conditions (e.g., chronic pulmonary or neuro-developmental disorders) have been among those at highest risk.

DESCRIPTION OF WORKSHOP: This session will review the current knowledge regarding seasonal and 2009 H1N1 influenza in obstetric, newborn, and pediatric populations.

The first presentation will focus on pregnant women and newborns, presenting the epidemiology, clinical presentation, and collaboration between CDC and the states on data collection and analysis.

The second presentation will update attendees on current experience with 2009 H1N1 influenza in children, including risk factors for severe disease and recommendations for treatment and prevention.
In the third talk, local and state perspective will be provided, from the point of view of the experience in California, which has reported many cases of severe illness from flu in pregnant women and children.

Finally, we will present results from formative research investigating knowledge of flu, preparedness issues, and concerns about flu vaccination and treatment with antiviral medications among pregnant women and providers. Also discussed will be how those results are being used at CDC to drive new communications efforts to reduce disease burden in the US.

JUSTIFICATION FOR WORKSHOP: The 2009 H1N1 epidemic began in April 2009 and has affected over 24,000 Americans all around the country. Pregnant women, infants, and young children are among the groups at highest risk for severe complications from influenza. These high risk groups have been targeted for receipt of seasonal and 2009 H1N1 vaccine. In addition, CDC recommends that pregnant women who are suspected of having 2009 H1H1 disease be treated promptly with antiviral medications without waiting for results of testing.

Participants need to fully understand the needs of pregnant women and children during the course of this outbreak, in order to effectively plan local, state, and federal resource allocation and medical care capacity. In addition, collaboration between CDC, state, and local health agencies regarding efforts to communicate with providers and the public will enhance our dissemination of key messages.

BIOGRAPHICAL SKETCH OF PRIMARY PRESENTERS: Brian C. Castrucci, MA is the Director of the Office of Program Decision Support at the Texas Department of State Health Services. Mr. Castrucci received his bachelor's degree from North Carolina State University in political science where he graduated summa cum laude and master's degree from Mailman School of Public Health at Columbia University. Mr. Castrucci is the 2009 recipient of the 2009 National Maternal and Child Health Epidemiology Young Professional Achievement Award for his contributions to and leadership in the field of Maternal and Child Health. Mr. Castrucci has authored or co-authored several peer-reviewed publications. This work has focused on tobacco use during adolescence and pregnancy, breastfeeding, bi-national reproductive health outcomes, obesity, and HIV/STD surveillance and prevention. Throughout his career, Mr. Castrucci worked to create synergy between research and practice through the analyses and translation of high quality research and investigation to inform policy decisions and program development.

CDR Jennifer Williams is a nurse epidemiologist on the Prevention Research team at the National Center on Birth Defects and Developmental Disabilities. Jenny is a certified family nurse practitioner and received her master of nursing and master of public health from Emory University. Jenny came to CDC in 2001 as an Epidemic Intelligence Service Officer. Jenny's recent work focuses on pandemic influenza and pregnancy, and, most recently, maternal health issues and 2009 H1N1 influenza virus. She also works on barriers to glycemic control in women with diabetes.

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MATERNITY CARE PRACTICES AND BREASTFEEDING AMONG HISPANIC WOMEN DELIVERING A LIVE-BORN INFANT: PREGNANCY RISK ASSESSMENT AND MONITORING SYSTEM, 2004-2006

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BACKGROUND: Research shows that acculturation and breastfeeding behaviors are associated among Hispanic women. Little research exists on the relationship between acculturation, breastfeeding behaviors, and Hispanic women's experiences with maternity care practices.

STUDY QUESTIONS: What is the prevalence of breastfeeding practices among Hispanic women by acculturation? What specific maternity practices are associated with Hispanic women's breastfeeding behaviors?

METHODS: PRAMS is a state, population-based surveillance system that collects information on maternal behaviors. We used multiple years of data from 11 states and New York City who collected information on maternity care practices from 2004-2006 with response rates 70% or higher. Data were examined using the SUDAAN software package that adjusts for complex survey methodology and non-response. Analysis examined Hispanic women with live-births whose language of questionnaire response was known and infant was with mother (n=8,973). We used a proxy measure to categorize Hispanic participants as high (English speaking, n=3,984) or low (Spanish speaking, n=4,989) on acculturation. The outcome variable was breastfeeding continuation to 10 weeks or longer. 10 maternity care practices were examined and the analysis adjusted for several demographic and service use variables (e.g., WIC).

RESULTS: Data show that 20.4% (se=0.95) of highly acculturated did not breastfeed as compared to 9.0% (se=0.58) of less acculturated Hispanics. Of the ones who initiated, English speakers were significant less likely to breastfeed to >10 weeks (OR=0.47; 95% CI: 0.41-0.54). After adjusting for a number of covariates, highly acculturated were less likely to continue breastfeeding for 10 weeks or longer (AOR=0.52; 95%CI: 0.44-0.61) than those lower on the measure. Maternity care practices associated with breastfeeding longer included baby fed breast milk only (AOR=2.22; 95% CI: 1.77-2.80), baby fed on demand (AOR=1.39; 95%CI 1.08-1.79), baby breastfed in the hospital (AOR=1.91; 95%CI: 1.33-2.75) and gift pack with formula (AOR=0.64; 95%CI=0.48-0.88).

CONCLUSIONS: Breastfeeding behaviors of Hispanic women varied by level of acculturation. Maternity care practices that are associated with breastfeeding duration may provide insights about developing breastfeeding promotion interventions for this growing population group.

PUBLIC HEALTH IMPLICATIONS: Language in which women respond to surveys can be used to assess breastfeeding behaviors and to inform breastfeeding promotion programs.

PARENTAL CONTACT WITH LAW ENFORCEMENT IN SAN BERNARDINO COUNTY AND DEATH OF INFANTS FROM SUDDEN INFANT DEATH SYNDROME SIDS (A CASE CONTROL STUDY)

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BACKGROUND: Infant deaths are a critical indicator of health status and social well being. Sudden Infant Death Syndrome (SIDS) is the leading cause of death for infants from one month to one year of age. Our previous studies show that maternal and paternal contact to law enforcement in San Bernardino County increase risk of children dying from SIDS.

STUDY QUESTIONS: Do infants born to parents who have "either contact" or "joint contact" with law enforcement have risk of death from SIDS?

METHODS: One hundred and fifty-two cases (infants that died from SIDS) in San Bernardino County during 1991-1997 were matched to two (304) controls (infants that lived past a year) of the same birth date range (15 days before/after birth of case) and birthweight group from California birth cohort files. The personal identifiers of fathers were retrieved from local birth files and sent with personal identifiers of mothers to the County's Sheriff's Department (CSD). Law enforcement records of parents contained in the central names index database (CNI) were analyzed in 23 categories of exposure types (e.g. name included in a police report, arrest,) and Code (e.g. Penal, Health and Safety). Records of both parents together and either parent were investigated.

RESULTS: Twenty three parents (cases) and 18 parents (controls) had joint exposure to CSD. Eighty-three parents (cases) and 88 parents (controls) had either contact to CSD. If both parents had some type of contact with CSD their infant was almost three times at risk of dying from SIDS (Odds ratio [OR] 2.83, $p < 0.001$, Chi Square [X2] = 10.5, confidence interval [CI] 1.48-5.43). If either parent had some form of contact with CSD, their infant was also almost three times at risk of dying from SIDS (OR 2.95, $p < 0.0001$, X2 = 28.5, CI 1.97-4.42). Other exposure types that gave significant results were if both parents were arrested, included in a police report or listed as suspects. Fifteen more exposure types including arrest, suspect, witness, victim and included in a police report gave significant results if either parent was listed.

CONCLUSIONS: We have shown infants born to parents where either parent or both had with law enforcement have an increased risk of dying from SIDS.

PUBLIC HEALTH IMPLICATIONS: Collaboration between public health and law enforcement departments could benefit parents who have had specific types of law enforcement contact and might serve to prevent SIDS death.

ASSESSMENT OF THE RATE AND PREDICTORS OF DENTAL CARIES AND LOSS TO FOLLOW-UP IN CHILDREN SERVED BY THE MICHIGAN DEPARTMENT OF COMMUNITY HEALTH 'VARNISH! MICHIGAN'

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BACKGROUND: The 'Varnish! Michigan' program was conducted from October 2007-2008 to evaluate the prevalence of caries, provide up to four fluoride varnish applications, educate parents and school staff, and provide referrals for dental care for children from 13 Early Head Start and Head Start programs.

STUDY QUESTIONS: What are the rate and predictors of oral disease in children served by the 'Varnish! Michigan' program and do these factors differ by age and race? Does the rate of repeat varnish applications vary by oral health indicators, age and/or race?

METHODS: Oral health program data were used for this study excluding children not receiving a varnish application. We assessed caries likelihood at inception, urgent treatment need, prevalence of caries overall and newly developed, and number of varnish applications. Bivariate analysis included assessment by age and race. Multivariate analysis included significantly associated bivariate factors and study site.

RESULTS: Among 7,391 children initially screened, 7% showed signs of early childhood caries, 7% needed urgent dental care, 9.5%.had at least one carious lesion. At the first screen, after adjustment, Hispanic (OR 0.5, 95% CI 0.370 -0.606) and multi-racial children (OR 0.6, 95% CI 0.510- 0.684) were at less risk of caries compared to Whites. Overall, children age 3-5 years and those of Hispanic ethnicity had a greater likelihood of caries in both crude (OR 1.7, 95% CI 1.256-2.186) and adjusted models (OR 1.6, 95% CI 1.159-2.121) relative to younger children and those of White race respectively. The likelihood of new caries did not vary significantly by age; Hispanic (OR 2.7, 95% CI 1.745-6.522) and Black children (OR 1.7, 95% CI 1.051 -3.352) were at greater risk of new caries compared to Whites after adjustment. Whites were significantly more likely to obtain a repeat varnish application.

CONCLUSIONS: Children aged 3-5 years had poorer oral health relative to younger children. Black and Hispanic children were less likely to receive multiple screens/varnish applications, but were more likely to develop new caries relative to Whites.

PUBLIC HEALTH IMPLICATIONS: Culturally tailored interventions are recommended for children aged less than 3 years to avoid the onset of early childhood caries.

TRANSFORMING QUALITATIVE DATA TO QUANTITATIVE: ….DATA ANALYZED FOR EVIDENCE BASED FUNDING

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BACKGROUND: The Indian Nations have from ancient-times related happenings in the community by word of mouth. Descriptive studies, which depicts majority of studies in epidemiology, only provide correlations or associations while experimental studies depict causality for prevention based program planning. It is however important to prove causality for prevention based evidence based research to be funded. There is a wide variety of descriptive statistics that can be used without the high cost of collecting data from scratch. The first step in using these descriptive statistics is the transformation of the qualitative data into quantitative data.

STUDY QUESTIONS: Is it possible to scientifically transform qualitative child maltreatment data to quantitative data for epidemiological causality study design analysis?

METHODS: Child Maltreatment (CM) qualitative data from two communities collected by child welfare agencies was abstracted by three trained data abstractors into a database which includes potential CM risk factors. The reliability and validity of data was tested using the inter-rater and intra-rater analysis performed on the data abstracted testing for agreement adjusting for errors (Kappa Test). An epidemiologist extensively trained in the interpretation of the CM data collected was used as the gold standard for the inter-rater Kappa tests. All estimates were made with a 95% confidence interval (CI), and SAS version 9.1 was used for all analyses. Excellent Kappa for this study was depicted as a Kappa score of 75%-100%, good 40%-74%, and poor < 40%, per abstractor.

RESULTS: Two out of three abstractors had excellent intra rater Kappa scores of 79% (CI: 67% -89%) and 94% (CI: 88% -99%) and good inter rater Kappa score while the last abstractor scored a poor Kappa score for both intra and inter rater Kappa tests.

CONCLUSIONS: Data selected for the epidemiological causality study was based on excellent average Kappa scores. All other data not meeting the excellent Kappa score criteria were deleted and this data was re-entered by an abstractor who met the excellent Kappa score requirements.

PUBLIC HEALTH IMPLICATIONS: The reliability and validity of data used in epidemiological causality study is crucial for optimal causality inference and vital to epidemiological studies.

REDUCING THE EFFECT OF MISSING DATA ON CHILD MALTREATMENT DATA ANALYSIS IN INDIAN NATIONS, 2008

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BACKGROUND: Missing data is an inherent statistical problem of data gathering that is often ignored. Most statistical programs end up with a default excluding cases with missing data from analysis. This results in a "complete case analysis" which is less representation of the sample population, reduces the sample size and in effect the power of the analysis. It is therefore important to determine a standardized scientific way of handling these cases.

STUDY QUESTIONS: What is the most appropriate way to handle missing Child Maltreatment data in order to have a data report that is most representative of the target population?

METHODS: Missing data from the Child Maltreatment database was managed using the various methods: List wise deletion, case-wise deletion/pair-wise deletion, multiple imputations and maximum likelihood. Simple frequencies, fractions and ratios were compared for each method used in managing the missing data cases. All estimates were made with a 95% confidence interval (CI) and a variable with less than 10% imputed or deleted data was determined as good. SPSS and SAS version 9.1 were used for all analyses.

RESULTS: A combination of various methods was found to be most useful in handling missing data for this particular analysis. Data was systematically imputed and validated from test re-test survey questions and variables with less than optimal data entry were deleted. The frequencies, fractions and ratios generated while using these combination of methods was most representative of the study population.

CONCLUSIONS: It is difficult to justify the use of a method of handling missing data over the other. A predetermined method agreed upon in the analysis plan, before the survey implementation which has been pre-approved by the institutional review board (IRB) is a good starting point.

PUBLIC HEALTH IMPLICATIONS: Surveys are costly! Deleting cases due to missing data is even more costly and can reduce the effectiveness and efficiency of a surveillance tool. It is important for all statisticians and epidemiologists to strategize on how to handle missing data in order to improve the effective use of data that has cost so much to gather.

ASSOCIATION BETWEEN PAST INSTITUTIONAL DELIVERY AND CURRENT PERCEPTION OF DELIVERY PLACE AMONG WOMEN IN TWO DISTRICTS OF KABUL CITY, AFGHANISTAN

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BACKGROUND: More than three and a half decades of civil war in Afghanistan has left this country devastated and at the bottom of most development and health indicators. Maternal and neonatal health has been worst affected. A maternal mortality ratio of 1,600/100,000 live births calls for specific priorities to be set for health programs across the country. One of the most effective strategies to reduce mortality among mothers is increasing institutional deliveries. However, what influences the demand for institutional deliveries among mothers needs to be carefully researched.

STUDY QUESTIONS: Did past institutional deliveries affect current perception of preferred delivery place among women in two districts of Kabul City, Afghanistan?

METHODS: This study used secondary data from a maternal health survey in two districts of Kabul City to retrospectively examine the association between institutional delivery during the last childbirth and current perceptions favoring delivery at a health facility among 643 women. Univariate analyses were conducted to describe distribution of individual subjects on demographic characteristics and theoretical variables. Cross tabulations and stratified analyses were done to explain relationships among different variables under study. Crude and adjusted unconditional logistic regression analyses were carried out for examining the association of characteristics with the dependent variable. A backward elimination strategy was followed to get to the fully adjusted and final models. Lastly, the final model was conditioned on age of mothers.

RESULTS: Our analysis showed that women who had institutional deliveries during their last childbirth were more likely to have perception favoring delivery at a health facility, as compared to those women who had home deliveries. A prevalence odds ratio of 5.70 (2.72-11.94); $p<0.0001$ obtained through unconditional logistic regression model signifies this association after adjusting for all other variables under study and accounting for potential confounders and effect modifiers. Conditional logistic regression yielded an odds ratio of 5.62 (2.69-11.73); $p<0.0001$ for the association.

CONCLUSIONS: Women who had institutional deliveries during their last childbirth were more likely to have perception favoring delivery at a health facility, as compared to those women who had home deliveries.

PUBLIC HEALTH IMPLICATIONS: 1) Women who have delivered in government hospitals or private clinics may be useful community health promoters of institutional delivery; 2) Efforts should be made to identify and resolve other barriers to institutional delivery.

REVEALING DISPARITIES IN POOR OUTCOMES OF PREGNANCY USING SENTINEL EVENT ANALYSIS

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BACKGROUND: Reproductive loss remains a critical problem in the United States. Often there is inadequate detail regarding the cause of death or the contributing factors. In-depth review of individual and aggregate fetal/infant death cases when studied as sentinel events sheds light on the root causes of poor pregnancy outcomes, contributing factors and areas for targeted interventions.

STUDY QUESTIONS: What are the disparities among major causes/contributing factors of Fetal/Infant Mortality and are they amenable to intervention?

METHODS: We utilized a population-based Fetal-Infant Mortality/Morbidity Review/Registry (FIMMRR) to capture detailed data on mortalities for the 21 birth-hospitals in the Central New York Region. Data were abstracted from maternal and infant medical records. All spontaneous late Fetal deaths (>= 300 Grams) and all Infant deaths (>= 300 Grams, up to 1 year-of-age) born during the period January 1, 2006 through December 31, 2007 were reviewed (n=400). Data were analyzed for disparities based on insurance payer type for obstetrical care.

RESULTS: In the Central New York Region, significant disparities exist. Utilizing the Perinatal Periods of Risk (PPOR) approach, we find an overall Fetal-Infant Mortality Rate of 12.0 per 1,000 Live Births & Fetal Deaths among Medicaid insured women compared to an Overall Rate of 8.8 ($p<.01$)among women with other payer types. This disparity is especially striking in the Maternal Health/Prematurity and Infant Health cells of the PPOR map (7.7 vs 5.8 and 1.0 vs 0.1, respectively). Additional analyses show the influence of contributing factors.

CONCLUSIONS: With the current economic crisis and a noticeably increased rate of Medicaid insured obstetrical patients, the review and analyses of sentinel events continues to have demonstrable value in identifying disparities in the outcomes of pregnancy.

PUBLIC HEALTH IMPLICATIONS: Utilizing a clinically oriented, community based FIMMRR and evaluating data from chart reviews of fetal and infant mortalities reveals disparities and targeted areas for improvement are identified.

ROLE OF SHARED FAMILIAL FACTORS IN ENGAGEMENT IN DISORDERED EATING BEHAVIORS AMONG SIBLING PAIRS IN A FAMILY

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BACKGROUND: Approximately 15-40% of adolescents in United States and worldwide practice Disordered Eating Behaviors (DEB). Although DEB appears benign, engagement in DEB predisposes adolescents to high risk of Eating Disorders (ED) and significant morbidities and mortality. The role of shared familial factors which predisposes siblings at an increased risk of DEB has not been investigated.

STUDY QUESTIONS: What is the role of shared familial factors in engagement in DEB among sibling pairs in a US sample?

METHODS: A prospective cohort study was designed using data from National Longitudinal Survey of Adolescent Health. DEB in a sibling was defined as a composite variable of engagement in weight control behaviors, binge-eating with loss of self-control and medical diagnosis of ED. Based on DEB status of a sibling, sibling pairs were classified as affected (both engaged in DEB), discordant (one engaged in DEB) and unaffected (none engaged in DEB). Using generalized logit models we assessed the role of shared familial factors (gender of sibling pair, type of sibling pair, sibling age and BMI difference and marital status of parents) in development of DEB among three sibling groups.

RESULTS: Of the total 1637 sibling pairs; 59 pairs (3.6%) were affected, 407 pairs (16.0%) discordant and 1171 pairs (71.5%) unaffected. The presence of female-female, biologically not-related siblings, sibling age and BMI difference significantly differentiated sibling pair groups. Twin sibling pairs were 41% less likely to be affected (AOR 0.59, 95% CI: 0.31-1.12), 30% less likely (AOR 0.70, 95% CI: 0.54-0.92) to be discordant for DEB as compared to biologically not-related siblings. Female-female sibling pairs were 3.2 times more likely to be affected (AOR 3.19, 95% CI: 1.96-5.21), male-male sibling pairs were 53% less likely to be discordant (AOR 0.47, 95% CI: 0.37-0.58) as compared to male-female sibling pairs

CONCLUSIONS: Type of sibling pair and gender of sibling pair were shared familial characteristics predisposing sibling pairs in families at an increased risk of DEB.

PUBLIC HEALTH IMPLICATIONS: Care providers will find results useful in identifying high risk sibling adolescents as risk of engagement in DEB, early detection and prevention of future risk of development of ED.

THE COMBINED EFFECT OF HYPERTENSIVE DISORDERS AND PREVIOUS PRETERM ON RECENT DELIVERY: PRAMS, 2004-2006

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BACKGROUND: Preterm delivery occurs in 12% of births nationally and increases the risk of neonatal death. Several hypertensive disorders are associated with preterm delivery (PTD); having a previous PTD is the largest risk factor for PTD in subsequent pregnancies.

STUDY QUESTIONS: What are the combined effects of previous PTD and hypertensive disorders (HtnD) during pregnancy on the most recent delivery?

METHODS: Cross-sectional PRAMS data from 20 states (2004-2006) were used to examine associations between recent PTD (< 37 weeks gestation) and previous PTD and HtnD (i.e., high blood pressure, hypertension, pregnancy-induced hypertension, preeclampsia, or toxemia) during the most recent pregnancy. A composite variable describing previous PTD and the existence of any HtnD was created with the following levels: prior term delivery/no HtnD (referent); prior term delivery/HtnD; previous PTD/no HtnD; previous PTD/HtnD. Logistic regression models, adjusted for race/ethnicity, maternal age, marital status, and pre-pregnancy BMI, adequacy of prenatal care, stressful life events, smoking during the last three months of pregnancy, and annual household income, were assessed using complex sampling methods (SAS, version 9.2).

RESULTS: For 1,700,000 women included in weighted analyses, the prevalence of recent PTD was 7.2%. After controlling for the confounders mentioned above and compared to the referent group, the odds of recent PTD were as follows: 1.9 (95% confidence interval, CI=1.6-2.3) times higher among those reporting prior term delivery and HtnD; 4.2 (95%CI=3.7-4.9) times higher in women who had a previous PTD but no HtnD; 7.5 (95%CI=5.9-9.6) times higher among women with HtnD and a previous PTD (95%CI=5.9-9.6).

CONCLUSIONS: The combined effect of HtnD and previous PTD on recent PTD is greater than the independent effects of either condition. Limitations of this analysis include an inability to disentangle the effects of chronic versus pregnancy-associated HtnD or demonstrate a temporal relationship between recent PTD and HtnD. The use of self-reported data may have biased the findings.

PUBLIC HEALTH IMPLICATIONS: Options for treatment of HtnD are limited during pregnancy. Strategies to improve delivery outcomes among multiparous women with a history of PTD should focus on screening for and management of risk factors for HtnD, e.g., obesity, during the interconception period.

RACIAL/ETHNIC DISPARITIES IN POSTPARTUM DEPRESSION TREATMENT FOR ILLINOIS WOMEN, 2004-2006

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BACKGROUND: Postpartum depression (PPD) is estimated to affect 10-20% of new mothers. PPD is associated with negative outcomes for both women and infants, but most cases can be effectively treated through outpatient methods, such as counseling or medication. The purpose of this study was to describe PPD treatment by race/ethnicity among Illinois women.

STUDY QUESTIONS: Are there racial/ethnic differences in treatment rate or treatment type among Illinois women diagnosed with PPD?

METHODS: Data were obtained from the Illinois Pregnancy Risk Assessment Monitoring System (PRAMS) for 2004-2006, which asked three questions about PPD diagnosis and treatment. Analyses were restricted to women reporting a PPD diagnosis. Women were considered to receive "any treatment" if they responded "yes" to either receiving counseling or taking medications. To account for the complex sampling design, analyses were conducted using SAS-callable SUDAAN and SAS survey procedures. Multivariable logistic regression was used to examine the association between race/ethnicity and PPD treatment while adjusting for maternal age, education, marital status, parity, insurance, WIC and TANF participation, pregnancy intention, physical abuse, and stressful life events.

RESULTS: Approximately 7.6% (95% CI: 6.9-8.4) of new mothers reported being diagnosed with PPD. Of women with PPD, 78.8% (74.0-83.0) received any treatment, 69.0% (63.7-73.9) took prescription medications, and 37.3% (32.1-42.7) received counseling. After adjustment in the multivariable models, Black and Hispanic women had significantly lower odds of receiving any treatment (Black OR=0.31 [0.15-0.64, p=0.0016]; Hispanic OR=0.18 [0.09-0.35, p<0.0001]) and taking medication for their PPD (Black OR=0.28 [0.15-0.55, p=0.0002]; Hispanic OR=0.14 [0.08-0.27, p<0.0001]) compared to White women. There was not a significant difference between racial/ethnic groups in odds of receiving counseling.

CONCLUSIONS: Black and Hispanic women were less likely than White women to receive any PPD treatment. This disparity was due to lower medication use by these sub-groups because there were no racial/ethnic differences in receiving counseling.

PUBLIC HEALTH IMPLICATIONS: As part of the Illinois priority on perinatal depression, interventions should be developed in Hispanic and Black communities to address cultural attitudes that impact PPD treatment, specifically medication use. Provider cultural competence during PPD screening and treatment referral will also be important for encouraging treatment for Black and Hispanic women with PPD.

TRENDS IN CESAREAN SECTION RATE IN ILLINOIS: A JOINPOINT ANALYSIS

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BACKGROUND: In 2006, the Cesarean section (c-section) rate in the United States was 31.6%, a 51% increase from the 1997 rate. The rising rate is a public health concern because of the potential for adverse maternal and infant outcomes. The purpose of this study was to use hospital discharge data to examine trends in Illinois c-section rates.

STUDY QUESTIONS: How has the Illinois c-section rate changed over time and does the trend vary by maternal or delivery characteristics?

METHODS: Data were obtained from the Illinois hospital discharge system for all delivery hospitalizations during 1994-2007. Joinpoint software was used to examine trends and to estimate the average annual percent change (AAPC) during 2000-2007 and to compare trends across subgroups of history of prior c-section, payer, maternal age, plurality, and maternal medical conditions. An index was created to classify women as "any-indicated-risk" or "no-indicated-risk" based on the presence of codes corresponding to 32 potential medical indications for c-section. Due to limitations of the dataset, the association between c-section and outcomes was unable to be assessed.

RESULTS: The Illinois c-section rate increased from 19.3% in 1997 to 30.4% in 2007. Joinpoint suggested significant trend changes in 1997, 2000, and 2005, showing decline during 1994-1997 and increases during 1997-2007. The overall AAPC for 2000-2007 was 5.4% (95% CI: 5.0-5.9). Both the primary and repeat c-section rates increased over the time period, as did the c-section rate in every sub-group of maternal age, payer, plurality, and maternal medical conditions. The primary c-section rate for singleton "no-indicated-risk" deliveries remained around 1.0% during 1994-2000. Joinpoint suggested a significant trend change in 2000, showing an increase during 2000-2007, with an AAPC of 12.4% (95% CI: 10.7-14.0) for that time period.

CONCLUSIONS: In Illinois, both primary and repeat c-section rates have been rising since 1997, regardless of maternal age, payer, plurality, and maternal medical conditions. C-section rates for "no-indicated-risk" deliveries have been rising since 2000 at a rate faster than the overall c-section rate during that time period.

PUBLIC HEALTH IMPLICATIONS: Curbing the increase in c-section will require simultaneously addressing the patient, provider, and system factors driving the increase, particularly for c-sections with no medical indication.

GESTATIONAL WEIGHT GAIN IN RURAL/FRONTIER WOMEN DELIVERING A TERM INFANT, MATERNAL OUTCOME MONITORING SYSTEM (MOMS) — WYOMING, 2003–2005

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BACKGROUND: Excess and insufficient gestational weight gain are associated with maternal and infant morbidities.

STUDY QUESTIONS: How does gestational weight gain vary among rural women?

METHODS: MOMS is a PRAMS like survey of 9,023 Wyoming women, who delivered a live birth during 2003–2005. Respondents reported pre-pregnancy weight, height and the amount of gestational weight gain. Gestational weight gain was categorized according to 2009 Institute of Medicine recommendations. Gestational weight gain was analyzed as a three level outcome and logistic regression was used to assess associations between weight gain and demographic factors.

RESULTS: Only 34.6% of Wyoming women gained an appropriate amount of weight during pregnancy; 22.6% gained insufficient weight and 42.8% gained excessive weight. In a multivariate model, all factors except for maternal race/ethnicity were associated with adequacy of weight gain. Women with high school education or less were more likely to gain insufficient weight compared to women who had more than a high school education (AOR:1.20 95% CI:1.02-1.42). Primiparous women were more likely to gain excessive (AOR: 1.44 95%CI: 1.26-1.65) and were less likely to gain insufficient weight when compared with multiparous women (0.71,0.60-0.84). Teen women were more likely to gain excessive (1.16,1.01-1.33) and insufficient weight (1.43,1.08-1.91) than women 20-34 years. Obese women were more likely to gain excessive (6.83,5.41-8.63) and insufficient weight (3.58,2.74-4.68) than healthy weight women. Underweight women were less likely to gain excessive (0.46,0.36-0.60) and more likely to gain insufficient weight (1.72,1.39-2.14) than healthy weight women. Medicaid women were more likely to gain excessive (1.16, 1.01-1.33) and insufficient weight (1.37, 1.16-1.6) than non-Medicaid women.

CONCLUSIONS: Most Wyoming women are not gaining the recommended amount of weight during pregnancy, and excessive weight gain is more prevalent than insufficient gain. Teens, obese/overweight and primiparous women tended to gain excessive weight. Lower educated women, teens, older women, obese and underweight women tended to gain insufficient amounts of weight.

PUBLIC HEALTH IMPLICATIONS: A one-sized fits all approach should not be taken for gestational weight gain interventions.

DEVELOPING A STATE-SPECIFIC COST ESTIMATE FOR SPINA BIFIDA

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BACKGROUND: Motivating adoption of public health policy changes or interventions often requires measures of economic efficiency. Several tools are available for identifying the most efficient use of resources in treating and preventing disease, but some methods only reveal costs to "society" and do not identify who pays for what and which aspect of society (i.e. the individual, public, or private payers) will reap the benefits. Moreover, costs and distribution of costs vary from state to state.

Cost estimates for spina bifida are especially important because highly effective, relatively low-cost and low-risk preventive measures exist (i.e. folic acid supplementation/fortification).

STUDY QUESTIONS: What information and methods are readily available for communicating meaningful, state-specific information about the economic costs of birth defects?

METHODS: To generate a simple estimate of the additional annual societal costs of spina bifida for the state of Texas, we used the model Total Cost = ?jAVGj x Nj, where AVG = cost per case for N affected individuals in each jth stratification of interest (cases of spina bifida in an average birth cohort in Texas).

We also applied Texas spina bifida rates to published cost estimates for the U.S. or for other states and obtained actual expenditure data from various administrative databases.

RESULTS: An estimated average lifetime cost of spina bifida ($635,000), multiplied by 120 (average number of live born Texas children with spina bifida) = $76,200,000. That is, each year another $76 million lifetime costs is incurred in Texas due to new cases of spina bifida.

Program or agency-specific data were obtained from several Texas sources. For example, annual costs of treating spina bifida in Texas include $1.75 million paid by the Title V-funded Children with Special Health Care Needs program; Medicaid/CHIP pays $6 million, and private insurers cover about $5.7 million.

CONCLUSIONS: While societal-level costs can be estimated, they may not be adequate to motivate spending on policy changes or interventions. Reporting of costs for a particular program may be adequate and will vary by proposed prevention strategy.

PUBLIC HEALTH IMPLICATIONS: Relevant cost data are available to inform and potentially motivate prevention partners and policy makers about the economic benefits of birth defects prevention.

MEDICAID FAMILY PLANNING WAIVERS: AN EFFECTIVE POLICY TOOL FOR REDUCING THE PREVALENCE OF BIRTH DEFECTS?

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BACKGROUND: About one-half of U.S. pregnancies are unplanned, and preconception behaviors that reduce the risk of birth defects are less likely to be practiced among women whose pregnancies are unintended. Therefore, unintended pregnancies may be more likely to be affected by birth defects. Several maternal characteristics associated with increased risk of birth defects are also associated with lower socioeconomic status. Medicaid family planning waiver expansion programs, which increase access to contraceptive services and preconception screening to this vulnerable population, have the potential to make a noticeable impact on the prevalence of birth defects.

The Texas Women's Health Program (TWHP) is Medicaid demonstration program that extends eligibility for family planning services (FPS) to women ages 18-44 with incomes less than 185% of the Federal Poverty Level.

STUDY QUESTIONS: Are Medicaid family planning waivers an effective tool for reducing the prevalence of birth defects?

METHODS: County-specific counts of TWHP participants were multiplied by each county's pregnancy rate to project the number of expected pregnancies annually among TWHP participants. The result was multiplied by 9% to estimate the maximum number of pregnancies averted through TWHP, and then by each county's average birth defects per pregnancy; the result was the number of expected birth defects cases that could be averted.

Subsequent models incorporated these assumptions: 1) 100% participation of eligible women; 2) expected participation after statewide adoption of a proposed outreach program; 3) expansion of eligibility to all ages.

RESULTS: At current participation rates, it is estimated that only 179 pregnancies affected by birth defects would be prevented annually, about 1.1% of cases in the state. However, 100% participation predicted a reduction in birth defect cases of 314 (2.1%) and the post-outreach model, 307 (1.9%). Expanding to all ages predicted a negligible reduction in cases.

CONCLUSIONS: This analysis suggests that improved access to FPS may have a modest impact on reducing the birth defects.

PUBLIC HEALTH IMPLICATIONS: Efforts to prevent birth defects have focused on preventing associated periconceptional exposures and conditions. However, supporting efforts to prevent unintended pregnancies may be a more effective use of limited resources.

THE EFFECT OF INCENTIVES ON ENROLLMENT IN A MATERNITY MANAGEMENT PROGRAM AMONG COMMERCIALLY INSURED WOMEN

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BACKGROUND: Incentives are widely used in health services to encourage individuals to participate in desired behaviors that are viewed as having positive outcomes. While there is a wide body of research documenting the basis for this approach, which derives from social exchange and economic theories, little research has examined the dimension of the incentive and aligned this with sociodemographic and clinical variables of the target population.

STUDY QUESTIONS: Does an incentive increase the probability that a pregnant woman will enroll in a maternity management program or do other factors predict program enrollment?

METHODS: We examined data from 22 national employers that offered a variety of incentives to pregnant women if they enrolled in the maternity management program. These varied from $100.00 gift certificates from various department stores to a benefit incentive. The latter involved waiving medical care copays. Data were retrieved from an interactive maternity management computer data system.

RESULTS: Initial analysis was nondirectional. Neither the gift card nor the benefit design worked across employer type. Further analysis indicated the group least likely to respond to the gift card was an international finance company. They had a participation rate of 4%. Coversely, the gift card did appear to increase enrollment for women employed in manufacturing. Their enrollment rate was close to 80%. Companies offering their employees benefit incentives tended to have less variation and averaged about 35% enrollemnt.

CONCLUSIONS:
1) Incentives can be used to target health behaviors among pregnant women.
2) Incentives are more effective when they examine what might be more attractive to the target population.
3) Companies offering health services would benefit from segmenting their target population to encourage increased program participation and adherence.

PUBLIC HEALTH IMPLICATIONS: There is a long history of tying incentives to health services but there is less known on the effects of the incentive on diverse populations. Our study suggests anyone creating an incentive based intervention would benefit from understanding what would be valuable to the target population and plan their program accordingly. This concept, which is becoming increasingly popular, is called segmentation.

USING INTERACTIVE VOICE RESPONSE (IVR) MESSAGING TO INCREASE POST PARTUM VISITS IN A SAMPLE OF COMMERICALLY INSURED RETAIL FOOD SERVICE WORKERS: A PILOT STUDY

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BACKGROUND: The Agency for Health Care Quality (AHRQ) publishes standards for post partum visits (PPV). Published compliance rates, however, vary greatly according to how the data are collected and the population under study. Managed care organizations report rates from claims and supplement the information from chart review data. The national PPV rate for 2008, using only claims data, was approximately 46%. The preintervention rate for our sample was 40%. We used the baseline rate to set a 5% improvement goal. Our sample consisted of a group of women who worked or whose spouses worked in food services retail, which is considered the secondary labor market.

STUDY QUESTIONS: Does an IVR reminder encourage women who are pregnant to have a post partum visit?

METHODS: We employed a quasi experimental design to evaluate the effects of our intervention. Our original sample was 116 currently pregnant women. Either she or her spouse worked in retail food services. We used an IVR messaging system to call these women to remind them to have their PPV's 21-56 days post delivery. We evaluated claims data to calculate PPV compliance. We compared PPV compliance before and after our intervention and performed a Z Test to determine if the rate difference was statistically significant. The greatest limitation to our study involves the use of global billing for maternity claims that are paid "in one shot" and, therefore, limit the number of pregnant women who can be identified early (before delivery) through claims data.

RESULTS: After a three month pilot, claims data demonstrated the PPV rate increased to 45%. This initial difference was not statistically significant. The final results will be higher because not all claims have been adjudicated.

CONCLUSIONS: Process evaluation demonstrates that IVR messaging can be a useful resource for communicating with pregnant women. We allowed women to call back if they were not able to talk when they received the initial IVR message. This additional function made the IVR messaging system more flexible and, therefore, increased its utility. We are allowing for more time to allow claims to be adjudicated and, afterwards, will run a more comprehensive logistic regression to determine which independent variables, along with the IVR message, may have predicted adherence with PPV guidelines. This will include, but not be limited to, marital status, family size, proxies for race and income, and chronic disease comorbidities.

PUBLIC HEALTH IMPLICATIONS: Interactive Voice Response (IVR) messaging has been used extensively in health services but less so in maternity care. IVR messaging has a wide range of advantages including:

1) Economy
2) Autonomy
3) Confidentiality
4) Access to certain population groups
5) Improved data quality
6) Standardized interviewing

Our preliminary results demonstrate that IVR messaging may be an effective and cost efficient tool with applications in maternity management.

EFFECTS OF INTERPREGNANCY INTERVALS IMMEDIATELY FOLLOWING A FETAL DEATH ON MATERNAL AND PERINATAL HEALTH

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BACKGROUND: Birth spacing has been found to be independently associated with perinatal morbidity and mortality, with inappropriate birth spacing accounting for about 12-15% excess risk for maternal and infant death across the globe. There have been studies to identify the appropriate interval following preterm and term births as well as abortions, but little work has been done to identify the appropriate interval following a fetal loss. It can be extrapolated from previous studies that spacing a birth after a fetal loss would be essential in reducing adverse perinatal outcomes for subsequent pregnancies. Currently, clinicians and health professionals in the United States are advocating pregnancy intervals of 18 to 24 months for women regardless of the birth outcome. However there is currently no research in support of this interval for women who experienced a fetal loss.

STUDY QUESTIONS: What is the optimal interpregnancy interval immediately following a fetal loss that will result in a healthy outcome for the subsequent pregnancy?

METHODS: A retrospective cohort was formed to evaluate pregnancy outcomes of women who had a reportable pregnancy immediately following a fetal death, (N=1530). Multivariate logistic regression models assessed the association between pregnancy intervals and subsequent adverse pregnancy outcomes, controlling for gestational length of previous fetal death and other confounders. An appropriate pregnancy interval is considered one that minimizes adverse perinatal health outcomes.

RESULTS: This study found that the interpregnancy interval corresponding to the lowest odds of an adverse outcome varied based on timing of previous fetal death. For early fetal death, the interpregnancy interval associated with the lowest odds of an adverse perinatal outcome was any interval longer than six months with an OR of 0.35(0.18, 0.71). For women who experienced a late fetal death, the interval associated with the lowest odds of an adverse birth outcome was 6-24 months, OR=0.51(0.25, 1.0) although only borderline significant.

CONCLUSIONS: Different recommendations should be made based on the timing of the previous fetal death.

PUBLIC HEALTH IMPLICATIONS: The results of this study can be used to influence clinician recommendations and public health interventions aimed at decreasing adverse perinatal outcomes through optimizing interpregnancy intervals.

THE EFFECT OF DEPRIVATION ON ADOLESCENT PREGNANCY: AN ECOLOGICAL ANALYSIS

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BACKGROUND: The United States has the highest teenage birth rate among all industrial nations. Texas consistently ranks among the top five states with the highest teenage birth rate.

STUDY QUESTIONS: The purpose of this study was to examine the role of neighborhood deprivation on county level pregnancy rates in the state of Texas, while controlling for other social-demographic variables.

METHODS: Data from the 2000 Census and 2001-2005 Texas birth records were examined at the county level (n=254) for 15 to 17 year olds. Neighborhood deprivation was measured using the Townsend Index which includes markers for unemployment rates, overcrowded households, housing units with no vehicle available, and home ownership. Neighborhood deprivation, border status, county designation, and other social-demographic variables at the county level (i.e., of race/ethnicity percentages, high school graduates, working mothers, foreign born, and non-married households with children) were examined in bivariate analyses with county level pregnancy rates. Multiple regression was used to determine the effect of deprivation and other factors on pregnancy rates.

RESULTS: The average pregnancy rate for 15 to 17 year olds at the county level was 40.8 per 1,000 females (SD=15.9). Neighborhood deprivation, percent of Hispanic population, border status, percentage of high school graduates, and percentage of non-married households with children had significant effects on county level pregnancy rates. Results indicate there is a 1.20 (95% Confidence Interval = 0.19 – 2.20) increase in county level pregnancy rates for every one unit increase in the Townsend Index (i.e., greater deprivation).

CONCLUSIONS: The current study indicates that counties with greater neighborhood depravations, as indexed by the Townsend, have higher teenage pregnancy rates. While many studies have identified individual factors associated with teenage pregnancy, this highlights the importance of community or environmental factors.

PUBLIC HEALTH IMPLICATIONS: If teenage pregnancy rates are to decrease, more attention should be paid to identify and address deprivation issues at the county level. Tailoring effective intervention efforts and resource allocations around these county level deprivation issues are fundamental to decreasing teenage pregnancy rates and achieving the Healthy People 2010 goal of reducing the teenage pregnancy rate to 43.0 per 1,000 females. Nearly 45% of Texas counties currently do not meet this goal.

ACCESS TO MEDICAL HOME AMONG CHILDREN WITH SPECIAL HEALTH CARE NEEDS–OHIO, 2005-6

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BACKGROUND: Children with special health care needs (CSHCN) require health services beyond that required by children generally. Their need for access to a wide range of support to maintain health makes access to a medical home particularly important. A medical home is a primary care which is accessible, continuous, comprehensive, family-centered and coordinated. Receipt of care within a medical home for CSHCN is a Healthy People 2010 objective and Ohio is committed to ensuring access. Identifying risk factors for lack of access will inform the targeting of public health actions.

STUDY QUESTIONS: The objectives of this study were to 1) identify risk factors for lack of access to medical home and 2) assess the relationship between insurance type and access to medical home.

METHODS: Data were from the 2005-6 National Survey of CSHCH, which was conducted using the State and Local Area Integrated Telephone Survey (SLAITS). Statistical analyses on Ohio children (n=821) were conducted using SAS survey procedures for complex sample design. Multivariate logistic regression was used to identify independent risk factors for lack of access to medical home. Predicted odds were calculated.

RESULTS: Among Ohio's CSHSN (16.2% of all children), 44.3% [95%confidence interval (CI) 40.3-48.4] lacked access to a medical home. Hispanic CSHCN (compared to non-Hispanic white) were more likely [Odds Ratio (OR) -- 1.23; 95% Confidence Interval (CI)-- 1.22-9.95] to lack access as were CSHCN with moderate or severe difficulty compared to mild (OR-- 2.05; 95% CI-- 1.35-11.33). Compared to CSHCN with private insurance only, those with public insurance (OR-- 1.54; 95% CI-- 1.0-2.48) and those who were uninsured (OR-- 5.5; 95% CI-- 1.54-19.9) were more likely to lack access. Age, household poverty level, and household education were not independently associated with lack of access. Findings are limited by the high proportion of missing data (17%) on severity of illness. Additionally, the small sample used in this analysis allows for state level conclusions, but may not be adequate to detect week associations and does not provide information for smaller geographical areas. The study's definition of CSHCN is broader than the criteria for inclusion for many public health programs; extrapolation of findings to the population served by public health programs must be done with caution.

CONCLUSIONS: Among Ohio CSHCN, independent risk factors for lack of access to medical home include public insurance or uninsured status, having moderate or severe level of difficulty, and being of Hispanic ethnicity.

PUBLIC HEALTH IMPLICATIONS: Public health programs should work to improve access to medical home among individuals on public insurance or who are uninsured, who have more moderate or severe level of difficulty, or who are of Hispanic ethnicity.

RISK OF FOOD INSECURITY IN MOTHERS OF CHILDREN WITH SPECIAL HEALTH CARE NEEDS

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BACKGROUND: Food insecurity (FIS) refers to a limited or uncertain availability of nutritionally adequate foods, and affects millions of households in the United States annually. It is not known how common FIS is among families of children with special health care needs (CSHCN). This population represents unique opportunities for screening and outreach.

STUDY QUESTIONS: Are mothers of CSHCN at higher risk of FIS than mothers who do not have CSHCN?

METHODS: Data were obtained from the 2004 Oregon Pregnancy Risk Assessment Monitoring System (PRAMS) and its two year follow-up (PRAMS-2), administered in 2006. Of the 1,968 women who responded to 2004 Oregon PRAMS, 865 responded to PRAMS-2. FIS was assessed with a single question on each survey, at Time-1 and Time-2, respectively. Mothers responding "yes" to this question were classified as FIS for the time period.
CSHCN status was identified with a 10-item question about ongoing needs for specific health services. CSHCN status of mothers responding "yes" to any one or more of the ten items was classified by the number of health services needed: none, one, or more than one need.

Controlling for covariates, a logistic regression model was built using PRAMS-2 data to examine whether CSHCN status was associated with increased odds of FIS. Longitudinal analysis was carried out to assess whether CSHCN status at Time-2 predicted a shift to FIS at Time-2.

RESULTS: CSHCN comprised 11.7% of the two-year-olds in this sample. 11.9% of mothers were FIS at Time-1, while 12.8% were FIS at Time-2. 62 (7.5%) women moved from food security at Time-1 to FIS at Time-2.
In the cross-sectional model, CSHCN status at Time-2 was not associated with FIS. In the longitudinal model, CSHCN status for two or more health services predicted a shift from food security at time-1 to FIS at Time-2 (OR = 9.03, 95% CI: (2.47 – 33.04); $p < 0.001$).

CONCLUSIONS: This study reveals that CSHCN status predicts onset of FIS. Further longitudinal research is needed to elucidate risk factors that predict FIS over time.

PUBLIC HEALTH IMPLICATIONS: This study identifies a unique and vulnerable population for FIS screening and intervention.

CLIENT CHARACTERISTICS AND BIRTH OUTCOMES OF FLORIDA LICENSED MIDWIVES

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BACKGROUND: As health care reform becomes a major topic of discussion among policymakers and the public, one solution that has been suggested to improve quality and reduce the cost of maternity care is the increased use of midwives. Both Certified Nurse-Midwives (CNMs) and Direct-Entry Midwives (DEMs) practice in the United States. In Florida, the educational and training requirements for Licensed Midwives (LMs) are more stringent than the licensing requirements for DEMS in any other state. However, this population of providers has been studied only rarely. A better understanding of their practice patterns and outcomes would inform maternity care reform discussions in Florida.

STUDY QUESTIONS: Do LM clients differ from the typical childbearing female population in Florida? If so, how?
Do infants born to LM clients have higher birth weights than infants born to other healthy, low-risk mothers?
Are infants born to LM clients at higher risk for birth trauma?

METHODS: The study used birth certificate data to compare mothers and infants with "licensed midwife" as the birth attendant to mothers and infants with other named attendants. Licensed midwife clients were compared to healthy, low risk mothers using univariate and multivariate methods. High-risk women (i.e, those who could not be cared for by a midwife due to chronic health conditions, pregnancy complications, etc. were excluded from analysis.) Data were anlyzed using "intention to treat" and unadjusted data. That is, transferred home births that were intended to be delivered by an LM but were attended by a physician were included in the "LM" group for one analysis, and in the "MD" group for another. Findings were compared for both analyses. The study was limited by: 1.) use of birth certificate data, which may have inaccuracies; 2. a descriptive cross-section design rather than a longitudinal design;

RESULTS: LM clients differed from women attended by physicians and CNMs on several demographic variables. Infants delivered by LMs tended to be heavier than full-term infants delivered by other providers. However, the incidence of birth trauma was comparable.

CONCLUSIONS: This study was designed to describe the client outcomes and characteristics of women attended in birth by Licensed Midwives. Interesting and promising differences emerged. Further research needs to be done, using a randomized controlled trial and more complete data, to compare outcomes of LMs to other providers.

PUBLIC HEALTH IMPLICATIONS: Although this study was limited and preliminary, it can inform further research that could measure the impact of Licensed Midwifery care on maternal and infant health. Such information would be vital for policymakers, providers and insurers.

PREGNANCY INTENTION AND HEALTH INSURANCE STATUS IN WOMEN SEEKING A PREGNANCY TEST IN RHODE ISLAND TITLE X CLINICS

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BACKGROUND: Pregnancy intention has implications for women and children. Women with unintended pregnancies are at high risk of premature rupture of membranes and preterm delivery. Unwanted children are more likely to be preterm and of low birth weight, and to experience early morbidity/mortality.

STUDY QUESTIONS: Does health insurance status determine pregnancy intention in women seeking pregnancy tests in Rhode Island Title X clinics? What factors confound this relationship?

METHODS: The Care database was used to examine pregnancy intention and reproductive risks among women waiting for pregnancy test results. Logistic regression models examined overall and pregnancy test-specific crude odds ratios for the insurance coverage-pregnancy intention association. Additional logistic regression models adjusted for demographic, socioeconomic, health, and health care utilization variables. This study did not distinguish between public/private insurance. Medicaid status has been identified in the literature as a risk factor for unwanted pregnancy.

RESULTS: Women without health insurance had lower odds of an unwanted pregnancy than insured women (OR=0.63, CI: 0.54-0.74). After age, visit to provider in past year, current depression, using birth control and previous pregnancy/delivery complications adjustment, uninsured women were also less likely to report unwanted pregnancies (AOR=0.71, CI: 0.59-0.84). Women <19 years of age and those who felt depressed were more than twice as likely to report an unwanted pregnancy (AOR=2.50, 2.02-3.08 and AOR=2.02, CI: 1.58-2.60, respectively). Similar results were observed in stratified models. In the negative test results model, women who were young, depressed, or uninsured had greater odds for unwanted pregnancies (AOR=1.73, 1.24-0.96 and AOR=1.57, 1.09-2.28, respectively). In the positive test results model, uninsured, young, or depressed women were also more likely to report an unwanted pregnancy (AOR=2.84, 2.15-3.76 and AOR=2.12, 1.49-3.02, respectively).

CONCLUSIONS: Results support previous studies that used similar timing for the pregnancy intention question. However, findings show that young women and depressed women seeking pregnancy tests in RI Title X clinics may be at a greater higher risk of the consequences of unintended pregnancies. This association was strongest for women with positive pregnancy test results (AOR=2.84).

PUBLIC HEALTH IMPLICATIONS: Health interventions and prospective studies on pregnancy intention in groups at the highest risk of adverse reproductive outcomes need to be prioritized.

MOM'S MOUTH MATTERS: IMPLICATIONS OF ORAL HEALTH MISCONCEPTIONS AND CARE BARRIERS IN THE PERINATAL PERIOD FOR WOMEN'S AND CHILDREN'S HEALTH

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BACKGROUND: Poor oral health is increasingly linked to adverse pregnancy outcomes, including preterm birth and low birth weight infants. Little is known about childbearing women's experiences obtaining dental care. Access to and use of oral health care can be hampered by poor information about appropriate care during pregnancy, personal views on dental care, and system issues such as delivery of care advice and insurance coverage.

STUDY QUESTIONS: What are Florida women's experiences in obtaining dental care prior to and during their pregnancies?

METHODS: Data for this study was obtained from the Healthy Futures Project. 272 African American women, 18-35 years old who were residents of one of three Florida counties were invited to take part in two in-depth, face-to-face interviews 1 month and 6 months after the birth of the baby. Interview questions on obtaining oral health care before and during pregnancy and recall of guidance on oral health care during prenatal care were transcribed and analyzed using MAXqda2007, a qualitative data analysis software program. Through subject level and thematic content analysis, key themes regarding the interviewees' perspectives on obtaining oral health care before and during pregnancy were assessed. Participants self-selected to take part in the interviews and their views may not be representative of the general population.

RESULTS: A third to half of participants (by county) did not seek dental care; over half did not recall receiving dental information during prenatal visits. Barriers to obtaining dental care included lack of insurance, difficulty finding a Medicaid dentist, appointment delays, misconceptions about the safety and appropriateness of dental care during pregnancy, and sporadic anticipatory guidance during prenatal care.

CONCLUSIONS: Patients and practitioners need guidance on appropriate oral health care in the perinatal period with a special emphasis on misconceptions about allowable care during pregnancy. Improved insurance coverage and Medicaid funding for oral health care can enhance access and use. Further work is needed to understand and address women's perceptions of dental care.

PUBLIC HEALTH IMPLICATIONS: Given the implications of poor oral health on possible adverse birth outcomes and its larger connection with general health of mothers and babies, attention to oral health misconceptions and barriers is warranted.

USING ELECTRONIC MEDICAL RECORDS TO EVALUATE THE IMPACT OF A TARGETED PRENATAL CARE INTERVENTION USING A POPULATION EFFECTIVENESS APPROACH

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BACKGROUND: Evaluation of the impact of perinatal care programs targeting high risk women is limited by the difficulty of finding an appropriate comparison group. The population effectiveness approach provides a strategy to measure the change in outcome at the population level by comparing the occurrence of outcomes in a population when some are treated, to the outcomes when none/few are treated (Munoz & Hoover 1995).

STUDY QUESTIONS: Using a population effectiveness approach, what is the impact of a state's perinatal care program on infant health outcomes?

METHODS: We evaluated the impact of a comprehensive intervention targeting at risk women in a multisite clinical practice using a population effectiveness approach. Before and after data were obtained from the delivery hospital obstetrical data warehouse. Rates of preterm delivery for the entire practice during the 2 years prior to program implementation (when none/few were treated) were compared with rates during a full year after program implementation (when some were treated). Demographic shifts were considered by adjusting for maternal characteristics using odds ratios (OR) with 95% Confidence Intervals (95%CI). Univariate analyses and multivariable logistic regression were completed using SPSS v16.0.

RESULTS: The intervention was initiated in 2007 and outcomes were evaluated for women who received prenatal care from the practice before and after the intervention: 2,231 women delivered in 2005/2006 and 1,395 delivered in 2008. Crude rates of preterm and very preterm delivery did not change significantly for the practice population following program implementation. However, after adjusting for multiple gestation pregnancies and maternal health characteristics/risks, we observed a decrease in the odds of very preterm delivery (OR=0.70; 95%CI:0.49,1.0) and a non-significant change in the odds of preterm delivery (OR=0.90; 0.74,1.10).

CONCLUSIONS: The evaluation showed that the perinatal health program had a marginally significant impact on infant health outcomes. Using data from electronic records allows for adjustment of competing risks increasing the validity of the historical comparison group.

PUBLIC HEALTH IMPLICATIONS: Utilizing a population effectiveness approach provides an alternative framework for evaluating targeted perinatal interventions.

PRESENCE OF DIABETES IN MOTHERS GIVING BIRTH IN THE STATE OF HAWAII, BY MATERNAL CHARACTERISTICS AND RELATED OUTCOMES, HAWAII HOSPITAL DISCHARGE, 2002-2008

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BACKGROUND: Diabetes is a common medical condition that can become a major complication during pregnancy. Diabetes is increasingly recognized to have long term adverse consequences to mothers and children.

STUDY QUESTIONS: What is the burden of diabetes among women giving birth and does it vary by maternal characteristics and related outcomes in the State of Hawaii?

METHODS: Hospital discharge information was analyzed for 127,265 mom-infant pairs covering all births in Hawaii from 2002-2008. A composite variable to identify the presence of diabetes was determined from International Classification of Diseases (ICD9) codes in the mother: diabetes mellitus (250.0), diabetes complicating pregnancy (648.0), and abnormal glucose tolerance test (648.8); and in the infant: infant of diabetic mother syndrome (775.0). Variation by maternal demographics and related outcomes was assessed.

RESULTS: An estimated 7.9% (95%CI: 7.7-8.2) of births involved Diabetes. The highest estimates were among mothers 35 years of age or older (14.0%, 95%CI: 13.4-14.6), those with private insurance (9.1%, 95%CI: 8.7-9.4), and births weighing less than 2500 grams (10.6%, 95%CI: 9.7-11.5) or over 4500 grams (19.6%, 95%CI: 17.2-22.0). The number of cesarean deliveries among singleton births were twice as prevalent (11.6%, 95%CI: 11.1-12.1) compared to non-diabetic mothers (6.6%, 95%CI: 6.3-6.9). The mean total costs was higher in the presence of diabetes by $2466 (95%CI: 2052-2880) for vaginal and $2835 (95%CI: 1982-3688) for cesarean deliveries compared to births not associated with diabetes. The additional mean length of stay for mothers was 0.30 days (95%CI: 0.27-0.33) in vaginal and 0.40 (95%CI: 0.33-0.48) days for cesarean. The additional mean length of stay for infants was 0.50 days (95%CI: 0.41-0.59) in vaginal and 0.60 days (95%CI: 0.30-0.91) for cesarean deliveries.

CONCLUSIONS: The presence of diabetes were associated with increased costs, longer length of stays, high and low birth weight, and varied by maternal characteristics. A composite variable using multiple ICD9 codes likely provides a better estimate than any one code alone.

PUBLIC HEALTH IMPLICATIONS: To address the burden of diabetes in pregnant women, further investigation is required to assess relationships between individual identifiers of diabetes and reproductive and other long term outcomes. Examination of disparities among specific groups may shed light on the overall burden picture for diabetes in mothers.

DENTAL CARE NEEDS, RECEIPT OF CARE, AND LOW BIRTH WEIGHT IN LOUISIANA

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BACKGROUND: Previous studies have reported an association between dental care received during pregnancy and low birth weight (LBW, <2,500 g). This association has not been investigated among Louisiana women.

STUDY QUESTIONS: Is there an association between need for and receipt of dental care during pregnancy and LBW among Louisiana women?

METHODS: Louisiana PRAMS data linked with birth records from 2000-2004 were used for analyses (response rate > 70%). Infants weighing <500g at birth and women who self-identified as a race other than black or white were excluded. The sample included 7,142 women, weighted to represent 252,889 women. Need and receipt of dental care was categorized as: needed to see a dentist and went (NW), did not need to see a dentist and went (nNW), needed to see a dentist but did not go (NnW), and did not need to see a dentist and did not go (nNnW). SAS-callable SUDAAN was used to account for complex survey design in evaluating associations; backwards elimination was used to identify significant variables (alpha=0.05) retained in the final logistic regression model. Limitations include inability to establish causality from cross-sectional PRAMS data and self-reported information collected after delivery.

RESULTS: Ten percent of women delivered a LBW infant. The percents of LBW deliveries for the dental care groups were 8.7% NW, 8.0% nNW, 10.7% nNnW, 10.4% NnW, ($p<0.05$). The association between receipt of dental care and LBW did not remain significant after controlling for other factors.

CONCLUSIONS: Despite a significant bivariate association, there was no statistical relationship between dental care group and LBW after controlling for other factors. Fewer LBW infants were born to women who went to the dentist during pregnancy, irrespective of need. Going to the dentist may serve as a proxy for overall health consciousness.

PUBLIC HEALTH IMPLICATIONS: PRAMS oral health questions do not specifically assess periodontal disease. Using self-identified need for services likely includes less severe needs, thereby weakening the likelihood of finding an association. Additional data are needed to further investigate the relationship between oral health and birth weight among Louisiana women.

RESTRICTING CHLAMYDIA SCREENING AMONG WOMEN AGED >25 YEARS DURING BUDGET CONSTRAINTS, INFERTILITY PREVENTION PROGRAM — IOWA, 2005–2007

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BACKGROUND: Chlamydia, the most common bacterial sexually transmitted infection (STI), is a substantial cause of preventable infertility. The Infertility Prevention Program (IPP), CDC's national chlamydia testing and treatment program, includes sexually active women aged =25 years and their partners. Iowa IPP also tests selected women aged >25 years; in family planning clinics, selection criteria include women with a new partner, multiple partners, a partner with a STI, or signs or symptoms of disease. Faced with decreased funding and limited testing, Iowa IPP requires further information to focus services to those at highest risk.

STUDY QUESTIONS: When faced with budget constraints, how can Iowa IPP decrease chlamydia testing, yet still identify and treat most infections?

METHODS: Iowa IPP behavioral, clinical and laboratory data for 2005–2007 were analyzed. Chlamydia diagnosis required a positive nucleic acid amplification test. Analyses were restricted to women attending family planning clinics and stratified by age.

RESULTS: Overall, 6,309/119,357 (5.3%) chlamydia tests were positive: 5,539/98,580 (5.6%) tests among women aged =25 years; 443/9,512 (4.7%) among women aged 26–29 years; and 327/11,253 (2.9%) among women aged =30 years. By restricting testing to women aged <30 years, IPP would have identified 5,982 (94.8%) infections by conducting 108,092 (90.6%) tests. Among women aged 26–29 years, 1,489/9,512 (15.7%) tests did not meet selection criteria. By restricting testing to women aged =25 years and only those women aged 26–29 years who meet selection criteria, IPP would have identified 5,942 (94.2%) infections by conducting 106,603 (89.3%) tests.

CONCLUSIONS: Iowa IPP can limit chlamydia testing among women aged >25 years, yet identify most infections, by enforcing selection criteria and limiting participants' ages.

PUBLIC HEALTH IMPLICATIONS: Iowa IPP can use these results to modify criteria for testing when faced with decreased funding.

RISK FACTORS FOR DEPRESSION AMONG ADOPTED CHILDREN: ANALYZING DATA FROM THE NATIONAL SURVEY OF CHILDREN'S HEALTH (NSCH) AND THE NATIONAL SURVEY OF ADOPTIVE PARENTS (NSAP)

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BACKGROUND: Depression is a serious condition that can be particularly worrisome in children and can occur at higher rates in adopted children. Recently published datasets can inform our understanding of this condition in adopted children.

STUDY QUESTIONS: What traits or circumstances of adopted children help explain their higher levels of depression?

METHODS: We combined data from two surveys conducted by NORC through the State and Local Area Integrated Telephone Survey (SLAITS) mechanism of the NCHS: the 2007 NSCH, a population-based survey of parents of children under 18 years of age, sponsored by MCHB; and the 2007 NSAP, a survey of parents of adopted children identified through the NSCH, sponsored by ASPE and ACF. We then analyzed data on 2,089 adopted children for whom a parent completed both surveys. Some of the risk factors considered included age at adoption, type of adoption, poverty status, and prior abuse. Analysis methods accounted for complex survey design.

RESULTS: The rate of depression among adopted children is approximately three times greater than that of non-adopted children (based on analysis of NSCH). The multiple logistic regression model controlled for race, sex, and age of child. Statistically significant factors in the final model included adoptive parent's report of the quality of his/her relationship with the child, language spoken in the home, whether any household member smoked, and diagnosis of Conduct Disorder. Perhaps more interestingly, type of adoption, number of parents in household, other mental health diagnoses, whether the child had ever lived with his/her birth family, and suspected abuse prior to adoption, were not significant factors.

CONCLUSIONS: Adopted children who have Conduct Disorder or live in a household where someone smokes, English is not the primary language, or the adoptive parent reports a worse than expected relationship with the child, appear to be at greater risk for depression.

PUBLIC HEALTH IMPLICATIONS: Mental health screening and services for adopted children, particularly for whom the aforementioned risk factors are present, are important elements in ensuring overall health.

*At date of submission, the 2007 NSCH Public Use File had not been released. Consequently, specific rates were withheld from this abstract which will be reported in the final presentation.

MORTALITY DUE TO SELECTED CONGENITAL HEART DEFECTS AMONG INFANTS, CHILDREN, AND ADULTS - UNITED STATES, 1999-2005

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BACKGROUND: Previous reports suggest that mortality due to congenital heart defects (CHDs) decreased in recent decades.

STUDY QUESTIONS: Is the trend in decreasing mortality due to CHDs continuing? How does mortality vary by age, ethnicity, sex, and CHD phenotype?

METHODS: We used data from 1999-2005 US death certificates to calculate mortality due to CHDs by age at death, ethnicity, and sex. The underlying cause of death, as classified by the International Classification of Disease, Tenth Edition (ICD-10) code, was used to identify deaths. To calculate death rates for individuals >1 year of age, postcensal (2000-2005) and intercensal (1999) population estimates were used in the denominator; for infant mortality, live birth counts were used. We also calculated median age at death by CHD phenotype.

RESULTS: Between 1999 and 2005 there were 24,803 deaths due to CHDs; 48% occurred among infants. Overall CHD mortality was greater for males than females. Both overall and infant mortality due to CHDs declined significantly during this time period (19.3% and 15.3% reductions respectively). Infant mortality was highest among non-Hispanic (NH) Blacks (55.3 per 100,000) in contrast to NH-Whites (40.0 per 100,000) and Hispanics (41.6 per 100,000). Among individuals <75 years of age, unspecified congenital heart defects (ICD-10 code: Q24.9) accounted for 34% of all deaths due to CHDs and was the most commonly reported CHD cause of death. Among individuals >75, atrial septal defect and ventricular septal defect were the most commonly reported CHD causes of death. Patent ductus arteriosus and hypoplastic left heart syndrome had the youngest median age at death (13 and 14 days respectively).

CONCLUSIONS: Mortality due to CHDs continues to decline. There are racial-ethnic disparities in mortality due to CHDs among infants and young children. These findings should be interpreted considering the limitations of death certificate data.

PUBLIC HEALTH IMPLICATIONS: Reduced mortality may be attributable to continued improvements in diagnosis and surgical treatments of CHDs. However, racial disparities in mortality may suggest unequal access to care. Provision of appropriate care for older children and adults with CHDs will become increasingly important as mortality due to CHDs continues to decline.

THE RIGHT PLACE AT THE RIGHT TIME: HIGH-RISK PREGNANCY AND DELIVERY AT SUBSPECIALTY CENTERS - PREGNANCY RISK ASSESSMENT MONITORING SYSTEM, MICHIGAN 2004-2006

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BACKGROUND: Since many conditions and complications may deem a woman's pregnancy high-risk and may have subsequent adverse outcomes for both mother and infant, it is imperative to deliver and receive care at hospitals with high level capacity.

STUDY QUESTIONS: We assume that high risk pregnancies are not only associated with preterm births but also with referrals and deliveries at tertiary centers. Is that true?

METHODS: The 2004-2006 Michigan Pregnancy Risk Assessment Monitoring System was used for this study. High risk pregnancy was defined as either hypertension or diabetes prior to pregnancy or both while low risk was none of the above. Prevalence of preterm birth and delivery at a subspecialty center were the two outcomes compared among high versus low risk women. Same logistic regression model was used to control for prior preterm birth, placenta morbidities, maternal age, race, and education, and pre-pregnancy insurance. Analysis was done with SAS 9.1 (Cary, NC).

RESULTS: Women with high risk pregnancies were more likely to deliver a preterm infant (15.5% versus 8.5%) than those with low risk but only marginally more likely to deliver at a subspecialty center (48.3% versus 45.3%). After adjustment, the odds of high risk pregnancies ending in preterm deliveries were almost twice higher and significant compared to low risk (OR 1.79, 95% CI: 1.25-2.55). However, this was not mirrored by deliveries of high risk pregnancies at tertiary centers: OR 1.40, 95% CI: 1.04-1.90. Placenta morbidities and prior preterm delivery were significant predictors but only of preterm birth (OR 2.91, 95% CI: 1.76-4.82 and 4.22, 95% CI: 3.0-5.95, respectively).

CONCLUSIONS: Chronic disease, placenta morbidities and history of preterm birth were significant predictors of preterm delivery, but less or non-predictive of delivery at a subspecialty center. Given the inherent limitations of this study, further research is recommended to better understand why women with chronic and acute pregnancy complications are not delivering at facilities offering advanced care.

PUBLIC HEALTH IMPLICATIONS: Providers should identify women of reproductive age with chronic disease and a history of preterm births during preconception period and counsel them about the risks posed to subsequent pregnancies. Once pregnancy occurs, corresponding referrals must be made to assure the receipt of appropriate care.

DENTAL VISITS AND ORAL HEALTH EDUCATION: 12 STATES IN THE PREGNANCY RISK ASSESSMENT MONITORING SYSTEM (PRAMS), 2004-2006

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BACKGROUND: Improving the oral health of pregnant women is promoted in the US Surgeon General's Report, however, not much is known about the characteristics of pregnant women receiving dental care. This study characterizes the prevalence of dental visits and oral health education among women with recent live-births, surveyed using the Pregnancy Risk Assessment Monitoring System (PRAMS).

STUDY QUESTIONS: What is the prevalence of dental visits and oral health education during pregnancy and what indicators are associated with dental visits and oral health education among women delivering a live-born infant?

METHODS: Data from the PRAMS Surveillance System, from 2004-2006, were analyzed. States with an overall weighted response rate of >70% were included (n=56,349). SAS callable SUDAAN was used for statistical analysis to account for PRAMS complex sampling strategy. Bivariate analyses were conducted to obtain the prevalence of dental visits and oral health education by selected demographic and maternal morbidity indicators. Multivariate logistic regression with backward elimination was used to investigate associations with the oral health indicators. The final logistic model controlled for predictors with a Wald Statistic p-value of less than 0.2; significance was assessed at the $p<.05$ level.

RESULTS: Thirty nine percent of women reported a dental visit, and 39% also reported receiving oral health education. Multivariate regression analysis revealed that smoking three months prior to pregnancy (OR=0.88, CI=0.79-0.97), hypertension during pregnancy (OR=0.83, CI 0.73-0.95), and giving birth to an infant weighing <2500g (OR=0.89, CI 0.84-0.95) were significantly associated with a lower likelihood of a dental visit. Those who smoked 3 months prior to pregnancy (OR=0.78, CI 0.71-0.87) and who sought prenatal care after the first 3 months of pregnancy (OR=0.82, CI 0.75-0.91) were significantly less likely to receive oral health education during pregnancy.

CONCLUSIONS: Efforts to increase the oral healthcare of pregnant women may benefit by targeting smokers, those with hypertension, women giving birth to an infant <2500g, and those with late prenatal care entry.

PUBLIC HEALTH IMPLICATIONS: These results can be used to inform programs for pregnant women and to promote oral health education during the prenatal care period.

IS UNINTENDED PREGNANCY ASSOCIATED WITH PHYSICAL VIOLENCE BY AN INTIMATE PARTNER DURING PREGNANCY? FINDINGS FROM THE 2007 LOS ANGELES MOMMY AND BABY (LAMB) PROJECT

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BACKGROUND: Violence during pregnancy has been associated with poor health outcomes including preterm labor, hospitalization prior to delivery, low birth weight infants, and sexually transmitted diseases. Women with unintended pregnancies have two to four times the risk of experiencing intimate partner violence during pregnancy than women with planned pregnancies. However, assessment of pregnancy intendedness is usually limited to the mother. The intention of the father and both parents has not been explored.

STUDY QUESTIONS: Is unintended pregnancy, as defined by mother, father, or both, associated with physical abuse by an intimate partner during pregnancy in Los Angeles County?

METHODS: LAMB is a biennial, population-based survey modeled after the Pregnancy Risk Assessment Monitoring System. Data were collected on 6,252 women who recently gave birth in LA County. Bivariate analyses were conducted using the Rao-Scott Chi-Square Statistic; multiple logistic analysis on SAS 9.2 was used to conduct multivariate analyses. Sampling and non-response weights were used to estimate population prevalence.

RESULTS: Mothers are at increased risk (AOR 1.825; 95% CI: 1.232-2.70) for physical abuse during pregnancy if they perceive the father did not intend the pregnancy. The risk of physical abuse is highest (AOR 2.037; 95% CI: 1.235-3.36) when mothers indicate the pregnancy was unintended by both parents. Mothers' intendedness alone was not found to be a significant risk factor for physical abuse during pregnancy when adjusted for age, race/ethnicity, education, and marital status. Unmarried women were also found to be at increased risk for physical abuse when both partners indicated an unintended pregnancy compared to married women (AOR 2.785; 95% CI 1.6-5.0).

CONCLUSIONS: Mothers' perceptions that fathers' did not intend the pregnancy as well as not being married are associated with intimate partner physical violence during pregnancy.

PUBLIC HEALTH IMPLICATIONS: The significant association between mothers' perceptions that fathers did not intend the pregnancy and intimate partner physical violence strengthen prenatal care providers' ability to screen and identify women at higher risk for physical violence during pregnancy. Knowledge of marital status can also help providers identify women at increased risk for intimate partner physical violence during pregnancy.

A STUDY OF THE RELATIONSHIP BETWEEN PREGNANCY INTENTION AND MATERNAL VEGETABLE OR FRUIT CONSUMPTION

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BACKGROUND: Expecting mother's pregnancy intention has been to known to correlate to maternal health habits throughout pregnancy. Maternal diet, specifically maternal fruit and vegetable consumption, one of many health habits, heavily influences maternal and fetal outcomes. No previous studies have evaluated the effect of pregnancy intention on maternal diet.

STUDY QUESTIONS: Primay: What is the status of daily consumptions of fruits or vegetables during pregnancy in different subgroups of the study population?

Secondary: What is the association between pregnancy intention and daily intake of fruits or vegetables during pregnancy, controlling for mother's social and economic status, demographic characteristics, other behaviors during pregnancy and previous birth outcomes?

METHODS: The study used data collected from the 2004 Louisiana Pregnancy Risk Assessment Monitoring System (LaPRAMS), a cross sectional study. The responses of 1,628 (68.3%) of 2,384 women sampled were analyzed. Multiple logistic regression was used to determine association between pregnancy intention and maternal fruit or vegetable consumption during pregnancy, controlling for mother's social and economical status, demographic characteristics, other behaviors during pregnancy, and previous birth outcomes. SAS-callable SUDAAN 9.1 was used for data analysis and alpha was set at .05 for statistical significance.

RESULTS: Prevalence of eating less than the daily recommended servings (< 5 servings) of fruits or vegetables during the last trimester of pregnancy (ELTDRS) was 91.1%, 92.9%, and 84.9% among women whose pregnancy was intended, mistimed, and unwanted, respectively. The adjusted odds ratio (OR) of ELTDRS for mistimed pregnancy to unwanted pregnancy was 2.10 (95% CI: 1.15, 3.83). The adjusted OR of ELTDRS for intended pregnancy to unwanted pregnancy was 1.35 (95% CI: 0.73, 2.47).This study has several limitations. PRAMS data is collected among pregnant women who had live births only; thus, assessment of mothers with pregnancies ending in abortion, still birth, or miscarriage are not possible. Data is collected from 2 to 6 months after delivery, at which point mothers' feelings towards their pregnancy may have changed and their ability to recall feelings upon conception may be limited. Estimates of fruit or vegetable consumption is not captured in early pregnancy. In addition, this study fails to define serving size, gives no example of fruits and vegetables, and does not specify servings of fruits and vegetables separately. The small sample size of the study caused large standard errors.

CONCLUSIONS: Women with mistimed pregnancy were more likely to eat less than the daily recommended servings of fruits or vegetables than women with unwanted pregnancy. Data did not show statistical difference of ELTDRS between women with intended pregnancy and women with unwanted pregnancy.

PUBLIC HEALTH IMPLICATIONS: Prenatal care providers, physicians, nurses and nutritionist may find expanding the population of mothers targeted for maternal dietary program useful. In addition, emphasis on the long and short term effects of unhealthy eating behaviors on both infant and mother may be beneficial regardless of whether mothers intended to conceive, which coincides with previous assertions that maternal dietary changes may result from social pressure from the aforementioned social support groups as well family members. Advertisements and campaigns launched on popular free-access social-networking websites could prove effective in educating and motivating healthy maternal eating habits among mistimed, white and greater than high school education mothers, who frequent these internet websites and are at high risk for ELTDRS.

RACIAL DISPARITY AND TRENDS IN NOT UTILIZING INFANT CAR SEAT FROM 1998 TO 2004: RESULTS FROM THE LOUISIANA PREGNANCY RISK ASSESSMENT MONITORING SYSTEM

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BACKGROUND: Although national infant car restraint system (CRS) use appears high, it has not been well-documented among infants within Louisiana. The objectives of this study were to determine racial disparity between black and white women and the trend of not utilizing infant CRS most of the time from 1998 to 2004 in Louisiana.

STUDY QUESTIONS: What is the racial disparity between blacks and whites of not utilizing a car restraint system most of the time from 1998 to 2004?

What is the trend of not utilizing a car restraint system most of the time from 1998 to 2004?

METHODS: The study used 1998-2004 Louisiana Pregnancy Risk Assessment Monitoring System (LaPRAMS) for data analysis. Only white and black women were included in the study. Women whose babies died or who did not live with the mother were excluded from the analysis. Logistic regression was used to determine racial disparity and the trend of not utilizing an infant car seat (NUICS) over seven years from 1998 to 2004. Mother's social, economic, and demographic characteristics, health behavior and prenatal care counseling for seat belt usage were controlled for in the multiple logistic regression model. One-sided test was used to evaluate significant trends. SAS-callable SUDAAN 9.1 was used for data analysis and alpha was set at 0.05 for statistical significance.

RESULTS: In general, during time period 1998-2004, the prevalence of NUICS was .87% for total, .37% in White women, and 1.61% in Black women. The prevalence was 1.43%, .84%, and 2.29% for total, Whites, and Blacks, respectively, in 1998; it was .54%, .11%, and 1.27% for total, Whites, and Blacks, respectively, in 2004. Results from multiple regression model without interaction term between year and mother's race showed that adjusted odds ratio (adj OR) of NUICS of blacks to whites was 4.61 (95% CI: 2.87 – 7.40), and adj OR of NUICS of current year to the next year was .88 (95% CI:.80-.98). From multiple regression model with interaction term between year and mother's race, adjusted odds ratio of NUICS of current year to the next year was .75 (95% CI: .62-.91) and .93 (95% CI: .83-1.05) in Whites and Blacks, respectively. Results apply only to Louisiana black and white mothers. The study assumed mother's drinking behavior before pregnancy resumed after delivery. The question used to determine NUICS is double-barreled- "yes, my baby rides in the car seat all of the time or almost all the time". There is no information on the mother's customary form of transportation.

CONCLUSIONS: Blacks were 4.61 times more likely to not use infant car seats than Whites. The trend of NUICS declined annually by 12% for total study population and 25% for Whites from 1998 to 2004; there was no trend of NUICS in Blacks.

PUBLIC HEALTH IMPLICATIONS: The decline of NUICS among whites, may be, but not necessarily, due to the state of Louisiana requiring infants or children under 20 pounds be restrained in a rear-facing child safety seat (Effective January 2002) 23. State funding for education programs aimed at populations at risk for NUICS (e.g. blacks) increasing awareness of injuries resulting from NUICS, enforcement of the Louisiana State Child Occupant Protection Law, increasing routine child safety seat check sites, and possible fine inflation could increase car seat use as well reduce infant mortality and/or morbidity due to motor vehicle accidents statewide.

THE EFFECT OF CHRONIC ILLNESS ON BARRIERS TO AND USE OF PRENATAL CARE AMONG LOW-INCOME PREGNANT WOMEN

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BACKGROUND: Women who delay entry into prenatal care or receive no prenatal care (PNC)are at risk for having undetected complications of pregnancy that can result in severe maternal morbidity and sometimes death. Little is known about whether women with chronic illness are more or less likely to enter prenatal care early; in fact, women who have chronic illness may be more likely than others to delay entry into PNC because of increased barriers or more likely to enter early because of prior knowledge of illness. Given the importance of ameliorating adverse health conditions prior to or early in pregnancy, it is essential to understand whether pregnant women with chronic illness are appropriately accessing the care delivery system.

STUDY QUESTIONS:
1) Is there an association between chronic illness and barriers to prenatal care among low-income women?
2) Is there an association between chronic illness and timing of entry into prenatal care?

METHODS: One hundred-thirty African-American, low-income, postpartum women in two Chicago communities were asked about their PNC experience (timing of PNC entry and challenges to seeking care), health status (chronic conditions), and insurance status before and during pregnancy in a structured survey. Data were analyzed using SPSS statistical software.

RESULTS: The mean age of respondents was 25.4 years, almost 60% had a high school education or less, and the average number of previous live births was 1.9. During pregnancy, 42.3% received TANF, 80.8% used WIC and food stamps, and 59.2% reported total household income under $1000/month.

The survey asked about 11 chronic conditions; 61 women (46.9%) reported having been diagnosed with one or more of these conditions prior to pregnancy. The most common were lung problems/asthma (20.8%), migraines (16.9%), and obesity/overweight (10.8%).

Women were asked about barriers to PNC. The most common were transportation (25.4%) and clinic hours (22.3%). Women with chronic conditions had a mean of 1.87 barriers, whereas women without chronic conditions averaged 1.57 barriers. Women with chronic illness were 1.2 times more likely to have a barrier than women without chronic illness (95% CI, 0.6-2.6). Women diagnosed with chronic conditions before pregnancy were 1.5 times more likely to begin PNC after the first trimester [defined here as after 12 weeks (95% CI, 0.3-1.4)] and 2.1 times more likely to delay PNC until after half way through pregnancy (95% CI, 0 .2-1.4).

CONCLUSIONS: Low-income women with chronic illness appear more likely to have barriers and to delay PNC entry. In order to actualize PNC benefits, efforts to connect women to care as early in pregnancy as possible are essential.

PUBLIC HEALTH IMPLICATIONS: Health outreach prior to pregnancy might be the most important strategy for positively impacting the health of women prior to pregnancy, facilitating early PNC entry, and potentially averting adverse birth outcomes among women with chronic conditions.

MATERNAL RISK FACTORS ASSOCIATED WITH NICU ADMISSION IN NEW MEXICO

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BACKGROUND: Infants admitted into neonatal intensive care (NICU) require more medical attention and services than those born healthy. These infants are at greater risk of lifelong adverse health outcomes. Complications experienced during pregnancy may contribute to adverse birth outcomes and the infant requiring admission into the NICU.

STUDY QUESTIONS: To explore maternal risk factors and morbidities associated with admission of infants into NICU in New Mexico.

METHODS: Analysis was restricted to women giving a live singleton birth 2000-2005 in New Mexico and who participated in the Pregnancy Risk Assessment and Monitoring System survey (n = 7346 completed the survey, 70.4% weighted response rate). Multivariate logistic regression was used to estimate the adjusted odds ratios (OR) and to generate 95% confidence intervals (CI) ($p < 0.05$) for NICU admission after controlling for maternal demographics/characteristics while adjusting for other potentially important factors found significant. Chi square testing was used to identify the included variables in the model.

RESULTS: Infants of women living in border counties had a higher risk (OR=1.5, 95% Confidence Interval (CI) =1.2-1.8) than those living in the rest of the state. Infants of women with a previous live birth (OR=1.4, CI=1.1-1.7) and of women with a preconception weight problem (OR=1.4, CI=1.1-1.8) had a higher risk of NICU admission. Infants of women who had a vaginal delivery had a lower NICU admission risk (OR = 0.46, CI=0.37-0.56). Low birthweight infants (OR=3.4, CI=2.6-4.5) and preterm infants (OR=6.5, CI=5.0-8.5) had a higher risk of NICU admission. Maternal morbidities significantly associated with increased NICU admission risk included diabetes during pregnancy (OR=1.7, CI=1.2-2.3) and premature rupture of membranes (OR=1.5, CI=1.1-2.0).

CONCLUSIONS: Maternal complications during pregnancy and delivery may be an indicator of increased NICU admission and may contribute to an increased risk of poor perinatal outcomes

PUBLIC HEALTH IMPLICATIONS: Reducing maternal factors such as pre-pregnancy weight problem and pregnancy-related complications may reduce risk of NICU admission. The results can be applied in services/programs designed to improve pregnancy-related complications which may also prevent adverse outcomes later in life for both mother and infant.

IDENTIFYING PATTERNS OF CHILDREN WITH ELEVATED BLOOD LEAD LEVELS IN ORLEANS PARISH PRE AND POST- KATRINA

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BACKGROUND: Prior to Hurricane Katrina, New Orleans was identified as a high-risk parish for elevated childhood blood lead levels. In 2005, Hurricane Katrina displaced nearly the entire population, approximately 70% have slowly returned. The high winds and flooding destroyed or significantly damaged a large percentage of homes which has resulted in the demolition or extensive gutting and repair of much of the housing stock; many have yet to be repaired which places a premium on habitable structures. The extensive damage shifted the footprint of the city, with a large portion of the returned population occupying a relatively small area. These changes in population distribution, as well as the removal of many lead-containing structures, have altered the risks and trends in the childhood blood lead poisoning. Analysis of surveillance data provides an opportunity to examine these changes.

STUDY QUESTIONS: What are patterns of changes in EBLs in post-Katrina New Orleans compared to pre-Katrina distributions, and is the post-Katrina distribution geographically correlated with demolition and rebuilding efforts as evidenced by New Orleans building, demolition, electrical, and mechanical permits?

METHODS: LACLPPP blood lead surveillance data of the years 2004, 2006-2008 were used to identify changes in the geographic distribution of EBLs from pre-Katrina to post-Katrina. Shifts in the geographic distribution were assessed using current population. Addresses of lead screening were geocoded using Centrus software. Structural damage estimates and building permits are obtained from the City of New Orleans GIS Data Portal (CNOGIS). ArcView® and SaTScan® are used to conduct spatial analysis to determine the extent of geographic correlation between childhood blood lead levels and rebuilding.

RESULTS: Preliminary comparison of the 2004 data to 2006-2008 data showed a reduction in the numbers and percent of children screened post-Katrina: from 7,115 (21%) in 2004 to 2,110 (14.6%), 4087 (26.6 %) and 5493 (34%) in 2006-2008 respectively. A substantial decrease in the percent of children with EBLs was observed long with a shift in the geographic distribution of EBLs post-Katrina. Before Katrina, the Africa-American, children aged 12-35 months and children with no Medicaid eligibility were at highest risk for elevated lead levels (odd ratio of 1.3, 1.5 and 2.1 respectively) but this changed after Katrina. SATscan showed significant clusters of EBLs cases along with and hazards introduced by rebuilding, demolitions: coordinates of 29.934950 N, 90.076470 W with radius of 0.64km, coordinates of 29.952910 N, 90.133640 W with radius of 0.16km, coordinates of 29.969370 N, 90.059050 W with radius of 0.42km

CONCLUSIONS: Analyzing the data geographically will focus program resources in areas most beneficial, and investigate the potential contribution of rebuilding-generated hazards.

PUBLIC HEALTH IMPLICATIONS: This examines the effects of rebuilding and the removal of lead hazards in older homes on EBLs. Coupled with GIS mapping, we can identify geographic areas and specific risk factors for EBLs, thus maximizing the ability to target primary prevention activities and reduce the cost of secondary prevention. Additionally, the results of this analysis will inform the development of public health messages

CERVICAL CANCER SCREENING: A REVIEW OF THE CYTOLOGY AND DISTRICT HEALTH INFORMATION SYSTEMS IN THE WESTERN CAPE PROVINCE, SOUTH AFRICA

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BACKGROUND: In 2000, cervical cancer screening targeting women 30 years and older was introduced in South Africa. In the Western Cape province, this screening is monitored through indicators in the District Health Information System (DHIS) and the Cytology laboratory-based information system. Discrepancies reportedly exist between the two systems. This study aims to describe data collected by the systems, analyze existing databases and identify ways to improve their efficiency and usefulness.

STUDY QUESTIONS: What discrepancies exist between the cytology and the DHIS?

METHODS: Data from the Cytology (Tygerberg) and DHIS databases in the Western Cape for 2006 were analysed using Excel and Epi-Info. Groote Schuur Laboratory and private sector data were not included in the analysis.

RESULTS: The review of the systems indicated that the two systems were not well linked with inherent differences and purposes. The DHIS is a provincial routine monitoring system, with two cervical cancer indicators, using aggregated data per facility, sub-district and districts. It recorded a total of 40,063 smears (84% of the provincial target of 47,828) in women in the 30-59 year age group. Population screening targets were not met in some districts. In comparison, the cytology database is laboratory case-based with a coding system. It includes diagnostic, clinical, and demographic variables. Of the 37, 339 records in the cytology database of one laboratory, 22% were categorised as population screening, 20.5% as symptomatic screening and the rest uncoded. Codes appeared complicated, there were missing sub-district/district variables, incomplete reporting of screening type by health care workers, and the quality of a substantial number of specimens were inadequate.

CONCLUSIONS: Comparisons between the two systems was difficult and they lacked a strong linkage. Recommendations include simplification of the coding system, reviewing recording forms, encouraging standard operational procedures, improving quality control systems, and training health care workers on completion of data elements.

PUBLIC HEALTH IMPLICATIONS: Strengthening the laboratory database and linkage to DHIS is important for evidence based decision-making. Targeted research, programme evaluations and data quality audits to improve and adjust processes within the programme are also needed to ensure the success of cervical cancer screening in South Africa.

PRENATAL CARE UTILIZATION IN KENTUCKY; ARE THERE DEMOGRAPHIC DIFFERENCES IN RECEIPT OF CARE OR MERELY A REFLECTION OF A NEW DATA COLLECTION METHOD?

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BACKGROUND: Prenatal care has been a leading factor in birth outcomes such as low birth weight and preterm birth. Early entry into prenatal care is nationally considered an indicator of access to care. In Kentucky, this indicator declined for 2004-2006 compared to earlier trends. This decline coincided with Kentucky's adoption of the new standard certificate of live birth developed by the National Center for Health Statistics.

STUDY QUESTIONS: Is the decline in early entry into prenatal care indicator a reflection of a change in the population or access of women who receive early, intensive or no prenatal care prior to and after the adoption of the new standard certificate of live birth in Kentucky?

METHODS: Live birth certificate data for Kentucky residents born between the years 2000-2002 and 2004-2006 were analyzed. The birth certificates for 2000-2002 record entry into prenatal care based on the Mother's self report of month prenatal care began. Birth certificates for 2004-2006 record dates prenatal care began and ended from the medical record, and the month prenatal care began is calculated mathematically. After identifying potential confounders, a multivariable analysis using logistic regression where odds ratios were calculated for categorized variables as estimates of risk ratio was conducted. Results were used to determine if there was a significant change in the demographics of women receiving early prenatal care, no prenatal care, and intensive prenatal care over time.

RESULTS: Logistic regression analysis revealed that there were no significant differences in the populations in the two cohorts for early prenatal care. Risk factors for not receiving prenatal care did not change between the two cohorts, and intensive prenatal care use exhibited only slight differences within the two cohorts.

CONCLUSIONS: Although first trimester prenatal care entry is declining in Kentucky, the recent trend can be attributed to the change in the data collection method and is not a true difference in receipt of services.

PUBLIC HEALTH IMPLICATIONS: Accurate measurement of prenatal care utilization is critical in assessing the need for health services and developing policies and programs to address gaps in receipt of services.

RACIAL/ETHNIC DIFFERENCES IN INFANT MORTALITY: EVIDENCE FROM NORTH CAROLINA

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BACKGROUND: Racial/ethnic disparities in infant mortality constitute a critical public health problem. North Carolina (NC) ranks 45th in the US, with 8.5 infant deaths per 1,000 live births, compared to the current US rate of 6.6 per 1,000 live births. Among minorities in NC, the rate is even higher, 13.9 per 1,000 live births. The risk factors for infant mortality that distinguish racial/ethnic groups in NC have not been identified.

STUDY QUESTIONS: What differences exist in risk factors for neonatal and postneonatal mortality among Hispanic, Black and White women in NC?

METHODS: Data were obtained from the NC linked birth/infant death files from 1999 to 2007. The sample consisted of 1,011,205 singleton births to Hispanic, Black and White women. The dependent variables were infant death (death <365 days), neonatal death (=27 days), and postneonatal death (28-364 days). Chi-square analysis examined the distribution of characteristics across the racial/ethnic groups. Separate logistic regression models were built to assess differential infant mortality risk. A study limitation is that findings can not be generalized to minority groups outside NC.

RESULTS: Increased risk for infant death was associated with younger age, lower education, and higher parity among Black and White women, but not Hispanics. Infant deaths for very low birth weight (<1500 gr) infants born to Hispanics was higher (OR=72.0;51.6-100.1) than to White (OR=29.8;24.9-35.6) or Black (OR=37.8;31.2-45.8) women. For all groups, inadequate prenatal care, previous child loss, and labor/delivery complications were associated with an increased risk for neonatal death. Black women were more likely to experience a postneonatal death (OR=1.3;1.2-1.4) while Hispanics were less likely (OR=0.67;0.57-0.80) when compared to White women.

CONCLUSIONS: This study provides evidence that risk factors for infant (neonatal and postneonatal) death differ by race/ethnicity in NC. Public health prevention efforts tailored to these unique risk factors are likely to have a positive impact on reducing infant deaths among minority groups.

PUBLIC HEALTH IMPLICATIONS: Policies are needed to ensure that 1) funding is available for research to continue the identification of racial/ethnic differences in risk factors for infant mortality and 2) culturally-specific interventions are available to reduce these disparities.

NEWBORN SCREENING AND LIVE BIRTHS RECORDS LINKAGE CONFIGURATION EVALUATION

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BACKGROUND: Since 2007, the Michigan Newborn Screening (NBS) Follow-up Program has linked NBS and live births records to identify potentially unscreened infants and facilitate program evaluation efforts. The best configuration of variables for linking NBS and live births records has yet to be determined.

STUDY QUESTIONS: Which configuration produces the highest number of matches of NBS and live births records?

METHODS: A subset of live births and NBS records of infants born in Michigan from January 1, 2009-March 15, 2009 was used for this study. Link Plus software, a probabilistic record linkage program, was used to match the live births and NBS records. Separate linkages were run for singletons (N=7,049) and multiples (N=314). The base configuration included child's name and birth date. Birth order was also included in the base configuration for multiples. Identifier variables were added to the base configuration, and the match rate was examined to determine the best configuration.

RESULTS: With the base configuration, 18.8% and 18.5% of the live births records for singletons and multiples were linked to NBS records. Mother's name was added to the base configuration (configuration 1), increasing the match rate to 95.1% for singletons and 88.2% for multiples. Adding mother's birth date to configuration 1 (configuration 2) matched 97.6% of the singletons and 96.5% of the multiples. The additions of the following variables to configuration 2 improved the match rates to 99.2% for singletons and 99.4% for multiples: mother's social security number (SSN), NBS card number, metabolic record number, and mother's zip code.

CONCLUSIONS: Mother's name was the strongest matching variable, while the best configuration included the following matching variables: infant's name, infant's birth date, mother's name, mother's birth date, mother's SSN, NBS card number, metabolic record number, mother's zip code, and birth order for multiples only.

PUBLIC HEALTH IMPLICATIONS: We recommend that mother's name and birth date be verified, entered twice independently and manually checked for accuracy, to improve record match rates. Probabilistic linkages can be used to facilitate program evaluation efforts through the identification of potentially unscreened infants and the enhancement of research opportunities by increased utilization of available resources.

MULTI-JURISDICTIONAL OUTBREAKS AMONGST CHILDREN...WHO IS RESPONSIBLE?

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BACKGROUND: Shigellosis is a diarrheal infectious disease prevalent among children in day care settings. It is difficult to curtail shigellosis especially when the outbreak is multi-jurisdictional. Shigellosis usually resolves within 5-7 days, and persons with this condition rarely require hospitalization. In Indian Nations, culture and tradition surrounding family, Tribal hospitality and multi-jurisdictional geography often plays a role in how an infectious disease outbreak is curtailed. The Rocky Mountain Tribal Epidemiology Center conducted a study to help understand how tribal, local, state and federal relations affected the outbreak investigations.

STUDY QUESTIONS: What are the complexities of working within a multi-jurisdictional infectious disease outbreak setting in Indian Nations?

METHODS: In 2006-2007 three separate outbreaks of Shigella Sonnei occurred involving separate investigations by Tribal, Local, State and Federal Public Health Agencies. In 2008 the Rocky Mountain Tribal Epidemiology Center (RMTEC) carried out Individual interviews of Shigella sonnei outbreak investigators at the Tribal, Local, State and Federal levels, in order to better understand complexities and barriers of working with a multi-jursdictional setting, and to identify pragmatic solutions beneficial in curtailing outbreaks in the feature. RMTEC carried out interviews comprised of stake holders at each outbreak location and across jurisdictions. Qualitative analyses of all interviews were performed.

RESULTS: The time line of the outbreaks ranged from 105-245 days, and the number of culture confirmed cases were 60-202, which correlated proportionally to the length of the outbreak. The median age of culture confirmed cases ranged from 5-10 years old. Recurring themes emerged across all regions and include: a need for clarity of roles across jurisdictions and accountability, data sharing, procedures for asking for help from other jurisdictions. Case follow up, reporting, bridging of separate health codes, HIPPA protocols were also found to be a problem across jurisdictions.

CONCLUSIONS: Reports of the individual and group interviews were shared and work groups were developed. The duties of the workgroup entail the development of a framework for outbreak management. A legal and literature review of codes at all jurisdictional levels, HIPAA policies and existing Memorandum of Understanding (MOU) will be completed.

PUBLIC HEALTH IMPLICATIONS: Creating a formal understanding between jurisdictions, clarifying roles and accountability, and clearly defining protocols at all jurisdictional levels will positively influence health outcomes of communities in the Indian Nations.

SUCCESS OF PROGRAMMING FETAL GROWTH PHENOTYPES AMONG OBESE WOMEN

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BACKGROUND: Obesity during pregnancy is an important public health problem, because it increases the risk of immediate and long-term adverse outcomes for the infant and mother. The link between fetal programming in obese women and postnatal events remains poorly understood and explored. There is no doubt that understanding the influence of excess maternal adiposity on in utero fetal programming and postnatal survival has the potential of enhancing our ability to improve birth outcomes in obese mothers.

STUDY QUESTIONS: Is the success of programming fetal growth phenotypes influenced by obesity status as well as by severity of obesity?

METHODS: This was a retrospective cohort study using the Missouri maternally linked cohort files (years 1978–1997). Maternal body mass index was classified as normal (18.5–24.9) (referent group) or obese (class 1, 30.0 –34.9; class 2, 35.0 –39.9; and extreme or class 3, 40 or more).
Fetal growth phenotypes were defined as large for gestational age (LGA), appropriate for gestational age (AGA), and small for gestational age (SGA). We used adjusted odds ratios with correction for intracluster correlation to estimate the risk of neonatal mortality for each fetal growth phenotype.

RESULTS: As compared with normal weight mothers, obese gravidas tended to program LGA infants at a higher and increasing rate with increasing obesity severity. The opposite effect was observed with respect to AGA and SGA programming patterns. Neonatal mortality among LGA infants was similar for obese (6.2 in 1,000) and normal (4.9 in 1,000) weight mothers (OR 1.05, 95% confidence interval [CI] 0.75–1.48) and regardless of obesity subtype. By contrast, SGA and AGA infants programmed by obese mothers experienced greater neonatal mortality as compared with those born to normal weight mothers (AGA OR 1.45, 95% CI 1.32–1.59; SGA OR 1.72, 95% CI 1.49 –1.98).

CONCLUSIONS: Compared with normal weight mothers, obese women were least successful at programming SGA, less successful at programming AGA, and equally as successful at programming LGA infants.

PUBLIC HEALTH IMPLICATIONS: An enhanced understanding of the influence of maternal obesity on fetal programming and postnatal survival may enable us to improve birth outcomes in obese mothers.

CHILDHOOD ANAEMIA PREVENTION AND CONTROL IN INDIA: AN ISSUE OF HIGH PRIORITY THAT CALLS FOR CHANGE IN POLICY AND URGENT ACTION

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BACKGROUND: A National Family Health Survey (NFHS) conducted in the year 2005-6 provides unambiguous evidence of high levels of prevalence of anaemia among young children. 3 out of every four children below the age of 3 years are anaemic. The remaining one child may well be iron deficient without manifesting anaemia. Among anaemic children, 2 out of every 3 children suffer from moderate to severe anaemia. The adverse effects of anaemia in children are well known and include impaired physical and mental development. Given these serious and possibly irreversible consequences of anaemia in early childhood, prevention of anaemia through an appropriate package of interventions appears to be crucial.

STUDY QUESTIONS: Is present policy for anaemia control in India in line with what required to control high level of anaemia among children?

METHODS: The paper critically reviews the present government policy, which requires that all children aged up to 5 years be screened for anaemia and the children found to be clinically anaemic be treated with a course of iron and folic acid supplements (20 mg elemental iron + 100 mcg folic acid per day) for 100 days in a year. The underlying assumption is that all children will have a contact with a health provider and that every provider will be able to assess clinical anaemia and that the provider will have an adequate supply available to dispense the supplements.

The USAID funded A2Z micronutrient project in India engaged the National Institute of Health and Family Welfare, the lead technical agency of Government of India in the field of public health and conducted a national workshop with wide participation of experts from all fiends, technical specialists, development partners and international agencies

RESULTS: The paper discusses total 11 recommendations made by the workshop in light of the discussions. The areas covered are iron deficiency among young children, present status of the anaemia control program for children, practical and do-able steps for reducing anaemia through a public health program including policy and program level actions.

CONCLUSIONS: Children will get iron syrup instead of iron tablets from 6-60 months. With high magnitude of the problem and common cause being iron deficiency, recommendation for universal supplementation for 6-60 month old children rather than screened children for anaemia will receive iron folic acid supplementation.

PUBLIC HEALTH IMPLICATIONS: While in malaria endemic area universal iron supplementation is not recommended, for low endemic area like India with as high as 79% anaemia level, it is vitally important to attend child anaemia with a strategy that would show results.

ENHANCED ASCERTAINMENT OF PREGNANCY-ASSOCIATED MORTALITY THROUGH HOSPITAL RECORD DATA LINKAGE

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BACKGROUND: Maternal mortality is a leading maternal health measure in the United States. Maternal mortality, based on death certificates only, is greatly underreported and misclassified in the United States and throughout the world. In the United States, national maternal mortality statistics are based on ICD cause-of-death codes only and do not include any deaths identified through enhanced state-level methods. In 1996, the Florida Department of Health initiated the Pregnancy-Associated Mortality Review (PAMR) to improve surveillance, review, analysis, and prevention of pregnancy-related mortality. Enhanced surveillance methods employed by PAMR include linking birth, fetal death, and Healthy Start screening records to the death certificates of women of reproductive age.

STUDY QUESTIONS: Does ascertainment of pregnancy-associated deaths increase as a result of linking hospital records with women's death certificates? What are characteristics of new pregnancy-associated deaths that are ascertained from hospital records?

METHODS: Florida death certificates of all women of reproductive age (10 to 50 years) were linked to statewide hospital records – hospital discharges, ambulatory encounters, and emergency department visits - with pregnancy-associated diagnoses for years 2000-2006. Previously identified PAMR cases were subtracted. The sociodemographic, pregnancy, and health characteristics were compared between new and previously-identified deaths.

RESULTS: For 2000-2006, PAMR identified 1,283 pregnancy-associated deaths. The linkage of hospital records identified 1,132 new pregnancy-associated deaths not previously reported by enhanced methods.

CONCLUSIONS: Some pregnancy-associated deaths are not identified using only vital and Healthy Start records. Linkage of hospital records can enhance ascertainment of such deaths.

PUBLIC HEALTH IMPLICATIONS: Improvement in the identification and classification of maternal deaths is needed as some pregnancy-associated deaths are not currently being examined and therefore pregnancy-associated mortality ratios are underestimated. States should consider performing data linkage between death certificates and hospital records to increase case ascertainment.

EXTREME OVERWEIGHT ACROSS CHILDHOOD: CROSS-SECTIONAL DATA FROM SPAN, WIC, AND TEXAS YRBS

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BACKGROUND: Obesity in children has reached epidemic levels. Extreme overweight in children (greater than the 85th percentile for height and weight) is less well studied.

STUDY QUESTIONS: What is the prevalence of extreme overweight (greater than the 99th percentile for height and weight) in preschool aged children (2-4 year olds) to high school aged children (12th grade)?

METHODS: Data from the School Physical Activity and Nutrition (SPAN) monitoring system in Texas year 1 (2000-2001, N=15,164) and year 2 (2004-2005, n=23,190), the Texas Youth Risk Behavior Surveillance System, 2005 (n=4,125), and 2 to 4 year olds certified into the Texas Women, Infant, and Children Supplemental Nutrition Program (WIC) in April 2005 (n=45,175) were used in this study. BMI was calculated from the measured heights and weights using CDC growth charts. BMI greater than the 99th percentile was named "Extremely overweight." These categories were examined by grade/age (for WIC), race-ethnicity, border status, and sex.

RESULTS: Overall all data sources males and racial-ethnic minority children (African American and Hispanic children) have higher prevalence of extreme overweight (greater than the 99th percentile). The prevalence of extreme overweight in 2 year old African American male children was 4.5% compared to 3.9 % for White male 2 year olds. The prevalence of extreme overweight in 4th grade African American males was 11.1 % compared to 4.9% for White males in the same grade. By 12th grade (YRBS), the prevalence for African American males is 7.5% compared to 2.3% for White children in the same grade. Results by border are mixed with the prevalence of extreme overweight varying by border status.

CONCLUSIONS: The current study indicates that extreme overweight ranges up to 10% or more in children ages 2 years old to 12th graders. Males and racial-ethnic minorities have the highest prevalence of extreme overweight.

PUBLIC HEALTH IMPLICATIONS: The extreme overweight prevalence indicates that the epidemic of overweight spans a large developmental period from preschool aged children to older children entering young adulthood. Public health interventions need to begin in early childhood and continue throughout childhood.

DIAGNOSIS OF FETAL ALCOHOL SPECTRUM DISORDERS

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BACKGROUND: Fetal alcohol spectrum disorders (FASD) are a common cause of developmental disability, birth defects, and mortality. The performance characteristics of current diagnostic tools for FASD are not adequately reported but critical in a surveillance system.

STUDY QUESTIONS: What are the performance characteristics of the Fetal Alcohol Syndrome Diagnostic Checklist (FASDC) in a state-level FASD registry?

METHODS: In a population of 658 subjects from North Dakota we used the FASDC score to examine the agreement between FASDC score, clinical diagnosis, and the Institute of Medicine criteria for FASD. All subjects were seen for evaluation including a genetics/dysmorphology assessment. We compared the clinical diagnosis and the FASDC scores to determine the performance characteristics of the FASDC in the categorical diagnosis of FAS other FASD and a group with no-FASD. Comparisons were made using univariate and logistic models of outcomes using both the presence and absence of alcohol exposure or phenotype data.

RESULTS: The FASDC performance characteristics for differentiation of the FAS group from non FASD was excellent (accuracy 99%, sensitivity 99% and specificity 99%). Logistic models for subjects with scores in the FASD range were differentiated with an accuracy of 82%, sensitivity 85% and specificity 80% using the data on phenotype and exposure. Subjects with scores in the No-FASD range were delineated with an accuracy of 78%, sensitivity 64% and specificity 81% without the exposure and phenotype data from the FASDC.

CONCLUSIONS: The FASDC scores produce diagnostic groupings that approximate expert clinical judgment in the North Dakota FASD registry. The FASDC is a tool which may be used to standardize diagnostic assessments of FASD and to provide a comprehensive database in a local setting for future research.

PUBLIC HEALTH IMPLICATIONS: All diagnostic tools should have performance characteristics assessed and available prior to adoption for use in clinical settings. The FASDC may be useful in other clinical settings for the diagnosis of FASD and as a state-level FASD registry.

JOINT EFFECTS OF PREPREGNANCY BODY MASS INDEX AND WEIGHT GAIN DURING PREGNANCY ON MACROSOMIA IN SOUTH CAROLINA, 2004-2005

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BACKGROUND: Increasing numbers of women enter into pregnancy being overweight or obese. Little is known whether women's prepregnancy body mass index (BMI) modify the positive association between gestational weight gain and macrosomia (>4000 grams).

STUDY QUESTIONS: Does prepregnancy body mass index modify the positive association between gestational weight gain and macrosomia births?

METHODS: We analyzed data from 2004-5 South Carolina birth certificates, restricting to 98,141 women with a singleton live birth. The prepregnancy BMI was grouped as underweight (<19.8), normal (19.8-26.0), overweight (26.1-28.9), obese (29.0-34.9), or very obese (=35.0). Multiple logistic regression models were used to adjust for confounders.

RESULTS: The prevalence of macrosomia in South Carolina was 7%. The percentages of women in each weight gain category (kg/wk) were: 15.7 (very low, <0.12), 5.9 (low, 0.12-0.22), 54.9 (moderate, 0.23-0.68), 9.2 (high, 0.69-0.79), and 14.4% (very high, >0.79). Compared with normal weight women with moderate weight gain, underweight women with very high weight gain, normal weight women with high or very high weight gain had 1.8, 2.0, and 2.6 times higher odds of having macrosomia births, respectively. For overweight women, those with moderate or more weight gain had 1.6, 2.2, and 3.2 times higher odds of macrosomia. However, all obese and very obese women experienced higher odds of macrosomia births. Within each weight category the odds ratios (ranges: 1.1-3.1 obese, 1.9-5.6 very obese) increased with rate of weight gain. For underweight and normal weight women, moderate or lower weight gain categories were associated with lower odds of macrosomia.

CONCLUSIONS: Our results indicate that underweight, normal weight and overweight women could lower the risk of macrosomia by gaining low and very low weight during pregnancy.

PUBLIC HEALTH IMPLICATIONS: For obese women and especially for very obese women, the preconception advice to achieve healthier weight before pregnancy would be more effective than weight gain restriction during pregnancy.

LOWER WEIGHT GAIN DURING PREGNANCY CAN REDUCE THE RISK OF GESTATIONAL DIABETES?

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BACKGROUND: Evidence shows that the prevalence of gestational diabetes in the United States is increasing in the past decade. There is a need to identify potential modifiable risk factors that can help reduce the risk of gestational diabetes.

STUDY QUESTIONS: Can lower weight gain during pregnancy reduce the risk of gestational diabetes?

METHODS: We analyzed data from 2004-5 South Carolina birth certificates, restricting to the sample to women with singleton live births (n=98,141). The estimated rate of weight gain during pregnancy (kg/wk) was grouped into 5 categories: very low (<0.12), low (0.12-0.22), moderate (0.23-0.68), high (0.69-0.79), or very high (>0.79). We categorized prepregnancy BMI as underweight (<19.8), normal (19.8-26.0), overweight (26.1-28.9), obese (29.0-34.9), or very obese (=35.0). Multiple logistic regression models were used to adjust for confounders.

RESULTS: The prevalence of GDM in South Carolina was 4.7%. The percentage of women with GDM was positively associated with prepregnancy weight (2.2, 3.2, 5.1, 6.9, and 10.1%, respectively, for the underweight, normal weight, overweight, obese, and very obese). However the percentages of GDM did not vary much across the categories of weight gain. Compared with normal weight women with moderate weight gain, underweight women with moderate weight gain had lower odds of GDM (adjusted odds ratio (AOR): 0.74, 0.63-0.88), normal weight women with very high weight gain had higher odds of GDM (AOR: 1.23, 1.06-1.42). Overweight, obese and very obese women regardless of their rate of weight gain, had an increased odds of GDM and the ranges of odds ratios increased monotonically within each weight gain category: overweight (1.42-2.61), obese (2.03-2.60), and very obese women (2.98-3.98).

CONCLUSIONS: Our results indicate that to lower the risk of GDM among women with high prepregnancy BMI, efforts should mainly focus on preconceptional weight reduction. Restricting weight gain during pregnancy would have a marginal impact.

PUBLIC HEALTH IMPLICATIONS: Our results indicate that to lower the risk of GDM among women with high prepregnancy BMI, efforts should mainly focus on preconceptional weight reduction. Restricting weight gain during pregnancy would have a marginal impact.

COMPARING INCENTIVES TO INCREASE RESPONSE RATES AMONG AFRICAN AMERICANS IN THE OHIO PREGNANCY RISK ASSESSMENT MONITORING SYSTEM SURVEY

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BACKGROUND: Since 2005, Ohio Pregnancy Risk Assessment Monitoring System (PRAMS) has used a pre-paid phone incentive in an effort to increase response rates. Although Ohio PRAMS has generally achieved an overall response rate of 70%, African American response has been significantly lower. Other PRAMS states have similarly struggled to reach a 70% response rate among this subgroup. Few studies have examined effective yet practical incentives for increasing African American response.

STUDY QUESTIONS: What is the effect of a gift card incentive on the African American response rate compared to the standard pre-paid phone card?

METHODS: From June to November 2008, sampled women in the African American stratum of Ohio PRAMS were randomly assigned to either experimental (n=276) or control (n=274). Random assignment was performed within birth weight strata to optimize treatment balance. Women assigned to the experimental group received a $10 CVS gift card while those assigned to the control received a 30-minute pre-paid phone card. Response rates were calculated using the total number of women sampled during the study period. Partial or full completion of the survey instrument via mail or phone was considered a response. Multivariate logistic regression was used to identify predictors of response while controlling for infant birth weight, ethnicity, maternal age, education, parity, marital status, smoking status, incentive, WIC participation, and prenatal care. Demographic and other data used in this analysis were from vital birth records, which may be in error. Information on specific reasons for not responding was not available.

RESULTS: The overall unweighted response rate was significantly higher in the experimental group (60.5% vs. 48.5%, p=.0024). Maternal and infant characteristics were similar between groups. Logistic regression modeling revealed that higher maternal education (OR= 1.84; 95% CI 1.46-2.69) and the gift card incentive (OR=1.54; 95% CI 1.29-2.07) were associated with increased survey response.

CONCLUSIONS: Response rates among African Americans in PRAMS can be significantly improved by using a $10 CVS gift card incentive.

PUBLIC HEALTH IMPLICATIONS: Since population-based data from PRAMS is used for state-wide maternal and child program planning, evaluation, and policy decisions, it is important that all population sub-groups are well represented.

RAISING CHILDREN IN THE AFTERMATH OF HURRICANE KATRINA: THE KATRINA KIDS STUDY

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BACKGROUND: Hurricane Katrina was the largest urban natural and manmade disaster in modern time. The challenges in the aftermath have impacted all segments of society and many families have been living with great uncertainty in a very stressful environment. The Katrina Mom study conducted in 2007 followed mothers impacted by the hurricane during their pregnancy until one year after delivery.

STUDY QUESTIONS: The Katrina Kids study was initiated to explore four specific aims: to identify parenting strategies used by families raising children in a chronically stressful environment; to describe strategies, characteristics and experiences associated with maternal psychological well-being; to identify strategies, characteristics and family experiences associated with favorable emotional, social and cognitive development; and to determine which strategies and post-disaster environmental conditions facilitated optimal mother-child attachment relationships.

METHODS: Mothers in New Orleans area who were pregnant during Katrina and their three year old children are visited at home. Data collection includes semi structured surveys, structured interviews and the use of standardized developmental tests of the child. The developmental tests included the Peabody Picture Vocabulary test for language skills, and three general motor skill tests. The maternal and child interaction as well as the testing of the child are videotaped. The ongoing pilot of this study has so far 27 participants, with a prospected 50 participants within the end of the study period.

RESULTS: The study is ongoing, and no preliminary results are currently available. Preliminary results will be available in December for the conference.

CONCLUSIONS: The results are to be used as a tool for identifying specific initiatives parents may take to help their children facing different social, emotional economic and environmental difficulties in a modern urban context like New Orleans.

PUBLIC HEALTH IMPLICATIONS: These results will hopefully contribute in creating targeted programs for families raising children in difficult environments.

CERVICAL CANCER SCREENING IN LIMPOPO PROVINCE, SOUTH AFRICA, JANUARY -SEPTEMBER 2007

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SAFELTP

BACKGROUND: The South African National Cervical Cancer Screening Program includes a laboratory based cancer registry that was adopted in 1999. The ultimate goal of the program is to screen at least 70% of women, within the target (30-59) age group in 10 years of initiating the program. Currently, timely information describing the results of the cancer screening among women in the target group is limited. This study describes the clinical stages of cervical dysplasia by age among women screened for cervical cancer in Limpopo Province, South Africa January-September 2007.

STUDY QUESTIONS: What is the percentage of pap smears with abnormal results among women screened for cervical cancer in Limpopo province from January to September 2007?

METHODS: Data were obtained from the Polokwane National Health Laboratory Services from January to September 2007. The sample included only women screened for cervical cancer using the Pap smear from 450 clinics and hospitals in Limpopo province. Descriptive statistics were used to characterize the women by age, and clinical diagnosis. Epi Info version 3. 2 was used for the analysis.

RESULTS: A total of 20,265 examinees were screened from January through to September 2007. There were 831 (4%) women with abnormal pap smears. There were 155 (19%) women age 18-30, 286 (34%) age 31-40, 236 (28%) age 41-50 and 154 (18%) age 51-100. The highest percentage of abnormal smears was found among females aged 31-40 years (34%) and 41-50 years (28%) of age when compared to females' ages 18-30 years (19%) and 51-100(19%). More than half of the women with abnormal results had moderate to severe cervical dysplasia (57%) whereas 40% were of mild cervical dysplasia and 3% had squamous cancerous lesions.

CONCLUSIONS: South African women in Limpopo Province are being screened for cervical cancer including the target age group of 30-59 years. Women aged 31-40 years and 41-50 years had the highest percentage of abnormal smears as compared to women of 18-30 years and 51 and above. Cervical cancer is a problem in Limpopo province as 3% of women were classified with cervical cancer.

PUBLIC HEALTH IMPLICATIONS: Over 33,000 women have died of cervical cancer since 1997 in South Africa. Cervical cancer screening is important for early detection and treatment for women diagnosed with cervical cancer.

CHARACTERISTICS OF SINGLETON TERM INFANTS ADMITTED TO THE NEONATAL INTENSIVE CARE UNIT (NICU)

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BACKGROUND: "NICU Admission," (admission to a facility or unit staffed and equipped to provide continuous mechanical ventilator support for a newborn) is newly reported on the birth certificate. Although preterm infants are more likely to be admitted to a NICU than infants delivered at term (37-41weeeks of gestation), important differences may be seen in characteristics of term infants admitted to the NICU according to gradations of "term" status.

STUDY QUESTIONS: What are the characteristics of singleton term infants admitted to the NICU?

METHODS: Data are based on the 2,073,368 births to residents of the 19 states that implemented the 2003 U.S. Standard Certificate of Live birth by January 1, 2006 (49% of all U.S. births). Analysis was restricted to singleton births. Rates of NICU admission are presented by selected maternal and infant characteristics (maternal age, race and Hispanic origin, medical risk factors, method of delivery, weeks of gestation among term deliveries, birthweight and assisted ventilation).

RESULTS: Almost 3 percent of singletons delivered at term in the reporting area were admitted to a NICU (44,379). Rates were highest for infants of the youngest and oldest mothers. Infants of non-Hispanic black mothers were more likely to be admitted (3.5%) compared to infants of non-Hispanic white and Hispanic mothers (2.8 and 2.4% respectively). Infants born at 37 weeks were almost twice as likely to be admitted (4.9%) than infants born at 38-41 weeks (2.5%). Rates by medical and health variables were generally higher at 37 weeks compared to 38-41 weeks of gestation (e.g., prepregnancy diabetes, 3.7 versus 2.0%).

CONCLUSIONS: Significant differences in rates of NICU admission by week of gestational age were seen. Early term infants (37 weeks) have higher rates of admission compared with their more mature counterparts for most characteristics examined, possibly due to physiological differences and differences in maternal risk factors.

PUBLIC HEALTH IMPLICATIONS: Additional research is needed into factors associated with early term delivery and into measures to prevent early term delivery.

MEASURING RESIDENTIAL "REDLINING" AS A FORM OF INSTITUTIONAL RACISM IN PUBLIC HEALTH RESEARCH

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BACKGROUND: Recent epidemiologic studies have examined the relationship between perceived racism and health. However, no studies have investigated residential redlining as a form of institutional racism in perinatal health research. Institutional racism, above and beyond individual risk factors may play a major role in the etiology of health disparities. This study explores the construction of a measure of residential "redlining" as a measure of institutional racism in public health research as a possible contributor to existing health disparities.

STUDY QUESTIONS: Is a measure for residential redlining useful in health studies for understanding contributors to health inequities and what is its association with perceived discrimination, perceived stress, neighborhood quality and preterm birth?

METHODS: We applied the Home Mortgage Disclosure Act (HMDA) administrative database to create a measure for residential redlining using multilevel logistic regression models. The community-level construct, residential redlining, was linked with the Stress Pregnancy Evaluation Community Project (SPEAC), a cross-sectional cohort of 3950 pregnant women in Philadelphia, PA. Bivariate analyses were conducted to assess the presence of residential redlining and its association with perceived discrimination, percentage black and residential segregation. Multilevel linear and logistic regression models will later be applied to estimate the risk of stress, poor neighborhood quality and preterm birth.

RESULTS: Residential redlining overlapped with the neighborhoods in which the SPEAC cohort lived and there were significant differences in residence in redlined areas by race/ethnicity. Black women were more likely to live in redlined communities compared to other women. Redlining was not associated with the subjects' perception of discrimination. However, it was positively associated with residential segregation and the percentage of blacks on the census-tract level.

CONCLUSIONS: Residential redlining is a neighborhood contextual measure associated with residential segregation and may serve as an institutional measure of racism. Residential redlining does exist within the neighborhoods among this cohort of pregnant women, and may measure a form of racism separate from individual reports.

PUBLIC HEALTH IMPLICATIONS: In the future, this measure of residential redlining can be applied in studies to serve as a neighborhood-level measurement for understanding health disparities among pregnant women and other populations.

AN ASSESSMENT OF THE ASSOCIATION BETWEEN PRE-PREGNANCY BODY MASS INDEX, CHRONIC DISEASE, AND LABOR/DELIVERY ABNORMALITIES WITH LENGTH OF HOSPITAL STAY AT DELIVERY, MICHIGAN PRAMS 2004-2006

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BACKGROUND: Past literature indicates that pre-pregnancy body mass index (BMI) is associated with poor birth outcomes and healthcare utilization including length of hospital stay at delivery.

STUDY QUESTIONS: In Michigan, is BMI associated with maternal length of hospital stay at delivery and is this relationship mediated by chronic disease and/or labor/delivery abnormalities?

METHODS: Data from the 2004-2006 Michigan Pregnancy Risk Assessment Monitoring System and birth certificates were used for this study. We constructed crude and adjusted polytomous logistic regression models of the association between BMI and length of hospital stay using the survey logistic procedure in SAS 9.1 (Cary, NC) to account for the survey design. Analyses were stratified by mode of delivery (vaginal vs. non-vaginal). Adjusted models included factors significantly associated in bivariate models. We assessed whether the impact of BMI on hospital stay was mediated by chronic disease (diabetes, hypertension) and/or labor/delivery abnormalities by entering each into our full model and evaluating the impact on point estimates.

RESULTS: BMI was not significantly associated with length of hospital stay in either crude nor adjusted models in both vaginal and non-vaginal deliveries. Adjustment by race, Medicaid insurance, and parity attenuated the relationship between BMI and length of hospital stay, although the relationship between BMI and hospital stay remained statistically insignificant. Addition of chronic disease (diabetes and/or hypertension) and/or labor/delivery abnormalities did not significantly alter the point estimates nor did it impact the statistical significance of the association between BMI and length of hospital stay when added to the adjusted models other than in morbidly obese (BMI > 35) women with non-vaginal deliveries.

CONCLUSIONS: Our study indicates that in Michigan, BMI is not associated with length of hospital stay. The relationship between BMI and hospital stay appears not to be mediated by chronic disease (diabetes/hypertension) and/or labor/delivery abnormalities other than in the morbidly obese delivered by c-section.

PUBLIC HEALTH IMPLICATIONS: Further research is necessary to investigate why obese women in Michigan do not have longer durations of hospital stays given they are significantly more likely to have chronic diseases and labor/delivery complications associated with poor perinatal outcomes.

RACIAL/ETHNIC DISPARITIES IN EARLY SOCIAL EMOTIONAL DEVELOPMENT

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BACKGROUND: Social emotional development (SED) in early childhood provides a foundation for mental health across the lifespan. Racial/ethnic differences in SED have been reported at kindergarten age, with greater percentages of minority children compared to White children entering school with lower social emotional (SE) competencies. While studies have focused on racial/ethnic disparities in SED of school age children, no studies have examined racial/ethnic differences in a contemporary, nationally representative sample of young children. Assessing factors in early childhood is vital for understanding the pathways by which disparities may emerge.

STUDY QUESTIONS: To examine racial/ethnic differences in children's SED at 4 years of age and factors that may account for these disparities (child and family demographic and psychosocial characteristics, family and child care context).

METHODS: Data are from the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B) and include direct measures of SED from the Two Bags Task (child engagement with parent and child quality of play) at 4 years of age (n=7600) and measures of child and family characteristics at birth, 9 months and 2 years. Sequential multivariable regression models were constructed to examine the direct and indirect relation between child's race/ethnicity and SE outcomes.

RESULTS: In unadjusted analyses, non-Hispanic Black, Hispanic, and non-Hispanic Asian children had lower mean scores on measures of engagement and quality of play ($p<.01$) compared to White, non-Hispanic children. After adjustment for all child and family characteristics, Black-White and Asian-White differences in SED remained significant for child engagement; Black-White and Hispanic-White differences in SED remained significant for child quality of play. Approximately half of the Black-White disparity in SED can be explained by parenting practices, whereas, differences for Hispanic and Asian children were largely due to family sociodemographic factors.

CONCLUSIONS: Although parenting and family sociodemographic factors may partially account for racial/ethnic disparities in SED, further work is needed to elucidate additional unmeasured factors that also may contribute to these differences.

PUBLIC HEALTH IMPLICATIONS: Understanding the pathways by which parenting and family characteristics affect SED can provide important clues regarding how best to focus early intervention efforts aimed at reducing disparities in children's early mental health.

WEEKLY MATERNAL MORTALITY SURVEILLANCE, TANZANIA, 2008

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BACKGROUND: Maternal death is defined as any death occurring during pregnancy, child birth or within two months after birth. In 2004/2005, Tanzania reported a very high maternal mortality rate of 578/100,000 live births. As a result, health facilities are required to report maternal deaths on a weekly basis. This study aimed to review data from the weekly maternal mortality surveillance system for the purposes of a baseline evaluation.

STUDY QUESTIONS: Is the Tanzanian weekly maternal mortality surveillance system functioning and providing information on pregnancy-related deaths?

METHODS: Is the Tanzanian weekly maternal mortality surveillance system functioning and providing information on pregnancy-related deaths?

RESULTS: A total of 13 regions out of 21 regions reported weekly maternal deaths January–December, 2008 (Completeness 62%). In total, 306 deaths and 729,935 live births were reported, indicating a maternal mortality rate of 42/100,000. Women with parity of 3-5 had a higher proportion of maternal deaths compared to women of parity 0-2. Women aged 20-30 years (45.2%) were more likely to die when compared to women aged 40-50 years (4.3%). The major direct causes of maternal deaths were obstetric haemorrhage (28%), sepsis (13%), eclampsia (14%), rupture of the uterus (8%) and abortions (4%). Malaria, anaemia, pneumonia and HIV were the major indirect causes.

CONCLUSIONS: Despite, the maternal mortality rate in this study being lower than the 2004/2005 rate, the number of maternal deaths in Tanzania is high compared to more developed countries such as the United States. The 2008 lower rate may be a result of only 62% of regions reporting.

PUBLIC HEALTH IMPLICATIONS: Provision of skilled care and timely management of complications is needed to lower maternal mortality in Tanzania. Also, it is important for regions to submit their weekly maternal deaths on time to obtain accurate rates of maternal deaths to better assist in allocating resources to reduce maternal deaths in Tanzania.

POSTPARTUM CONTRACEPTIVE USE AMONG NYC TEENS WITH A RECENT LIVE BIRTH, 2004-2007

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BACKGROUND: Children born to teen mothers are at greater risk of adverse birth outcomes than infants born to older women. Delaying repeat childbearing until beyond the teen years is recommended.

STUDY QUESTIONS: What factors are associated with postpartum contraceptive use among teens with a recent live birth?

METHODS: We used 2004-2007 data from the NYC Pregnancy Risk Assessment Monitoring System (PRAMS). The Contraceptive Risk Index (CRI), a measure of pregnancy risk among sexually active teens, was calculated based on contraceptive methods used and their failure rates.

RESULTS: Among the 316 teens <20 years of age who participated in PRAMS from 2004-2007, 55.1% were Hispanic, 29.8% black non-Hispanic, 10.6% white non-Hispanic, and 3.9% Asian/Pacific Islander; 60.6% were 18-19 and 4.4% < 15. Among sexually active teens, 23.2% reported using no contraception postpartum. The most common methods used were condoms alone (19.2%), Depo Provera alone (11.1%), the pill alone (8.5%), the pill with condoms (8.0%), and Depo Provera with condoms (6.9%). The CRI was 25.0% overall, 20.6% for 15-27 year olds and 27.9% for 18-19 year olds. Common reasons for not using contraception were that the woman (26.0%) or her partner (20.0%) did not want to or that she was pregnant/trying to get pregnant (15.9%). Teens who discussed postpartum contraceptive use with their prenatal provider were 4.3 (95% CI 1.53, 11.9) times more likely to use contraception postpartum. Unmarried and foreign-born teens were 5.2 (95% CI 1.5, 18.4) and 2.8 (95% CI 1.2, 6.8) times more likely to report postpartum contraceptive use.

CONCLUSIONS: The majority of teens with a recent live birth report contraceptive use postpartum. However, many are at high risk of a subsequent pregnancy due to use of methods with high failure rates.

PUBLIC HEALTH IMPLICATIONS: To reduce repeat teen pregnancy, providers should discuss postpartum contraceptive use with teen patients. Counseling should be targeted to high risk groups, and stress the use of dual protection that includes condoms and hormonal/long acting reversible methods.

CHLAMYDIA SCREENING AMONG ADOLESCENTS: PROVIDER NEEDS ASSESSMENT, HAWAII, 2007-2008

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BACKGROUND: Chlamydia trachomatis infection is the most commonly reported sexually transmitted disease (STD) in Hawaii. The frequently asymptomatic nature and high incidence of complications of Chlamydia infection call for targeted efforts to standardize routine screening for at-risk adolescent females.

STUDY QUESTIONS: Do healthcare providers in Hawaii screen adolescents for Chlamydia in accordance with the national STD screening guidelines and what are the barriers in screening adolescents in their clinical practice?

METHODS: The Hawaii Department of Health (HDOH) STD Prevention Program developed a survey to identify physician's needs and barriers to increase Chlamydia screening among at-risk adolescents. We performed chi-square analysis to find out whether provider characteristics and beliefs are independent predictor of the screening rate. To estimate the independent effect of these variables, we included the significant variables in a logistic regression. Limitations of this study are selection bias due to non-response (a total response rate of 23.5%) and information bias due to reliance on providers' subjective perception.

RESULTS: Overall, 66.9% (81/121) of providers who we surveyed said they routinely screen all adolescent females for Chlamydia. Some provider's demographic variables (specialty and practice setting) and belief (cost-effectiveness of screening) correlate with their willingness to screening in chi-square analysis. Belief of the cost effectiveness of screening is the only significant independent predictor in logistic regression. Hence, we infer that this is the important motivation for physicians to routinely screen. Barriers to provider screening include 1) fear that patients may have to pay (13.7%), 2) lack of time required for tests (7%), 3) lack of knowledge that Chlamydia screening can be performed without pelvic exam (10.5%). Lectures were preferred over the internet or publications as a mode of CME among all groups of the providers.

CONCLUSIONS: These findings suggest that target interventions with groups of providers who are less aware of the problem to promote cost effectiveness of Chlamydia screening with their preferred modality can help increase health care provider's adherence with current Chlamydia screening guidelines.

PUBLIC HEALTH IMPLICATIONS: The HDOH plans to utilize these findings to develop efficient education programs for physicians to increase adherence to the national Chlamydia screening guidelines.

USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE IN A POPULATION BASED COHORT OF INDIVIDUALS WITH DUCHENNE/BECKER MUSCULAR DYSTROPHY (DBMD)

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BACKGROUND: Investigations of complementary and alternative medicine (CAM) use among children with special health care needs suggest that use is common in this population. Several previous studies have been limited by their focus on multiple chronic conditions and/or use of small clinic-based samples. As such, improved understanding of the frequency and factors associated with CAM use in a population-based sample of children with specific chronic condition is needed.

STUDY QUESTIONS: What are the frequency and factors associated with CAM use among males with DBMD?

METHODS: The Muscular Dystrophy Surveillance, Tracking, and Research Network (MD STARnet) is a multi-state collaboration that conducts population-based surveillance of DBMD males. The MD STARnet also administers computer-assisted telephone interviews to primary caregivers of DMBD males, a section of which asks about CAM use. Based on National Center for Complementary and Alternative Medicine recommendations, caregiver reports of CAM use were grouped as whole medical systems, mind-body medicine, biologically-based practices, and manipulative and body-based practices. Categorical data analysis was used to conduct Chi-square tests, and multivariable logistic regression was used to generate adjusted odds ratios (aORs) and 95% confidence intervals (CI).

RESULTS: Of the 203 caregivers that participated, 80.3% (n=163) reported ever using CAM. Bivariate analyses showed family income (p=0.0060) and caregiver education (p=0.0013) associated with whole medical systems; caregiver race/ethnicity (p=0.0248), education (p=0.0040), and insurance (p= 0.0446) associated with mind-body medicine; and age of DBMD male at diagnosis (p=0.0152) associated with manipulative and body-based practices. Multivariable analyses suggested that the odds for whole medical and biologically-based practices were significantly higher if recommended by a provider (aOR=6.5 95%CI=2.5-16.5). DBMD males diagnosed by age 2 had significantly higher odds of using manipulative and body-based practices (aOR=3.6; 95%CI=1.1-12.1).

CONCLUSIONS: Findings revealed a high rate of CAM use by DBMD males. Provider recommendation of CAM and young age at diagnosis were significantly associated with use after adjusting for covariates.

PUBLIC HEALTH IMPLICATIONS: Given the increase in CAM use among pediatric populations, health care providers and policy makers need to be aware of the magnitude as well as associated factors to assist in planning of clinical and social services.

THE SEPARATE AND JOINT EFFECTS OF GESTATIONAL AGE, FETAL GROWTH & MATERNAL RACE/ETHNICITY ON CHILDHOOD MORTALITY IN CHILDREN WITH BIRTH DEFECTS

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BACKGROUND: Infants born with birth defects have increased risk of morbidity and mortality in childhood, and those also born preterm (PTB) or small-for-gestational age (SGA) have even greater risk than infants with birth defects born at term or appropriate-for-gestational age (AGA). Little is known about the interactive effects of gestational age, fetal growth and maternal race-ethnicity on risk of childhood mortality; thus, the purpose of this study was to examine their joint effect on 5-year survival among a cohort of 48,881 singleton infants born with major birth defects in Texas from January 1, 1996–December 31, 2003.

STUDY QUESTIONS: What are the separate and joint effects of gestational age, fetal growth and maternal ethnicity on childhood mortality among infants born with birth defects?

METHODS: We linked data from the Texas Birth Defects Registry to Texas death records and the National Death Index to ascertain deaths from January 1, 1996 until December 31, 2005. Gestational age was defined as PTB (<37 weeks) or term (37+ weeks); fetal growth was defined as SGA (<10th percentile), AGA (10th-90th percentile) or large-for-gestational age (LGA: >90th percentile). Maternal ethnicity was classified as non-Hispanic (NH) White, NH-Black or Hispanic. Cox-proportional hazards models were used to calculate hazard ratios (HR) and 95% confidence intervals (CI) to determine risk of death after adjusting for covariates.

RESULTS: HRs ranged from 0.6 to 6.9 for infants depending on gestational age, fetal growth and maternal race-ethnicity; however, no consistent pattern for maternal ethnicity was observed. Compared to NH-White infants born term and AGA, infants born SGA and PTB had the highest risk of death (Hispanics: HR=6.9; 95% CI: 5.9, 8.0; NH-Blacks: HR=5.4; 95% CI: 4.2, 6.9 and NH-Whites: HR=4.8; 95% CI: 4.0, 5.7).

CONCLUSIONS: The interactive effect of PTB, fetal growth and maternal race-ethnicity on mortality is greater than the individual effect of any one factor. Further elucidation of this complex relationship is needed to better understand mortality in children with birth defects.

PUBLIC HEALTH IMPLICATIONS: Infants with birth defects who are born preterm and small-for-gestational age are at the greatest risk of death during childhood, regardless of maternal ethnicity. Any increases in rates of preterm birth or small-for-gestational age infants with birth defects will place a large burden on the healthcare system.

THE RELATIONSHIP BETWEEN NEIGHBORHOOD DEPRIVATION AND TIMING/USE OF PRENATAL CARE IN THE CASE OF MILWAUKEE CITY, WISCONSIN

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BACKGROUND: The City of Milwaukee, Wisconsin, continues to have one of the highest black infant mortality rate in the nation. Black women in the City are more likely than other women to receive late or no prenatal care. Underlying reasons for these racial disparities are not clear, but neighborhood conditions are thought to be important contributing factors. The relationship between neighborhood deprivation and timing/use of prenatal care is unclear.

STUDY QUESTIONS: To examine whether neighborhood level deprivation is associated with late or no prenatal care among black women and white women in the City of Milwaukee.

METHODS: Analysis of 66,045 City of Milwaukee Health Department geocoded resident's birth records from 1999-2004, merged with US 2000 census tract (CT) data. Race-stratified multilevel logistic regression models were estimated for black (n=29,928) and white women (n=20,680) to examine the association of neighborhood level deprivation and timing/use of prenatal care, controlling for individual-level characteristics (maternal education, age, marital status, and prenatal smoking).

RESULTS: Black women (7%) were significantly more likely than white women (2%) to have late or no prenatal care and to live in more deprived census tracts. Compared with their counterparts in least deprived census tracts quartile, black women in the most deprived census tracts (OR=1.7 [1.1-2.4]) and white women in moderately-high (OR=1.7 [1.2-2.5]) and most deprived census tracts (OR=2.0 [1.4-3.1]) had twice the odds of late or no prenatal care. The odds of late or no prenatal care also were greater for black women in moderately-high (OR=1.5 [1.2-2.0]) and highest (OR=1.7 [1.3-2.3]) deprived census tracts, and white women in moderately-low (OR=1.6 [1.2-2.1]), moderately-high (OR=2.4 [1.7-3.2]), and highest (OR=2.5 [1.7-3.6]) deprived census tracts compared to their counterparts residing in the least deprived census tracts. A gradient was observed, with black and white women in the more impoverished quartiles at greater risk of late or no prenatal care than those in less impoverished quartiles.

CONCLUSIONS: Adverse neighborhood conditions are associated with racial disparities in prenatal care, and increased risk of late or no prenatal care for both black women and white women. Findings of this study, suggest that the level of neighborhood deprivation influences maternal prenatal care use up and above individual-level factors. Efforts to reduce disparities in birth outcomes in the City of Milwaukee, will need to target both individual and neighborhood factors.

PUBLIC HEALTH IMPLICATIONS: Because neighborhood deprivation appears to independently influence timing/use of prenatal care, policies and programs aimed at improving neighborhood conditions are likely to improve the use of prenatal care and overall birth outcomes.

CAN SOCIAL CAPITAL EXPLAIN RACIAL DISPARITIES IN BIRTH OUTCOMES? A SYSTEMATIC REVIEW OF THE LITERATURE

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BACKGROUND: Racial disparities in birth outcomes are an important public health issue. Neighborhood and socioeconomic characteristics are known determinants of birth outcomes. However, racial disparities persist independently of social and economic risk factors. Social capital, a concept that expands on the idea of social support, has been hypothesized to have a positive influence on the mechanisms that lead to better birth outcomes.

STUDY QUESTIONS: What indicators are commonly used to measure social capital? Is there evidence in the literature showing associations between social capital and birth outcomes?

METHODS: This is a systematic review. We searched Medline, PubMed, PsycINFO, and Sociological Abstracts using broad search terms for social capital and birth outcomes. We limited the search to original, empirical, and English-language studies. Studies were included if they: 1) examined the relationship between social capital and birth outcomes, 2) specified the methods used to measure social capital, 3) measured birth outcomes either alone or alongside other health outcomes. Limitations include: 1) unpublished studies may be underrepresented, 2) despite best efforts, it is possible we missed relevant articles.

RESULTS: Eleven articles were identified representing an international population: United States (4), UK (1), Ethiopia (1), Canada (1), multiple countries together (4). Social capital indicators fell into 6 distinct domains: informal sociability, control, social cohesion and trust, civic engagement, voting, and various other social measures. Two articles addressed birthweight, five addressed infant mortality, and four addressed both infant mortality and birthweight. One study addressed racial disparities.

CONCLUSIONS: Social capital indicators are consistent across countries. Social capital and birthweight was consistently shown to be not significantly associated. The evidence for infant mortality is stronger and significant although the strength of association is convoluted by the role of income inequality. Findings from one study indicate that levels of social capital may vary between Blacks and Whites and that it may act on health in these populations differently.

PUBLIC HEALTH IMPLICATIONS: Building social capital within communities may be a method for improving infant mortality rates. The different ways in which it may affect different racial/ethnic communities may be key to eliminating disparities. The topic of social capital holds promising answers and need to be further researched.

GEORGIA'S SENDSS NEWBORN DATA SYSTEM

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BACKGROUND: To improve on services provided in Georgia, a new, centralized, web-based, and population-based child health information system that integrates birth registrations, metabolic and hearing screens, and Title V early intervention programs was developed to identify and monitor high risk infants and children. The system, called SendSS Newborn, is flexible and will include in the future interfaces with Georgia's birth defects registry, immunization registry, and Georgia's regional perinatal centers.

STUDY QUESTIONS: How can Georgia improve identification, tracking, and follow-up services for infants and children with developmental disabilities or those at risk for these conditions?

METHODS: In January 2008, we began matching birth registrations to metabolic screens to identify Georgia births that had not been screened for metabolic conditions. The additional components of SendSS Newborn, including hearing screening and early intervention programs will begin in 2009. In addition to programmatic applications, this system allows for surveillance of hearing loss and metabolic conditions. A core component of SendSS Newborn is the matching of multiple data sources using a robust matching tool to create a child-based record.

RESULTS: The system consolidates many distinct data sources and has the flexibility to conform to changing programmatic needs. SendSS Newborn will allow for program, efficiency, timeliness, and data quality evaluation.

CONCLUSIONS: SendSS Newborn brings together many users such as hospitals, audiologists, pediatricians, and state and local public health staff to one system for improved service.

PUBLIC HEALTH IMPLICATIONS: SendSS Newborn is a model system that integrates birth registration records, metabolic and hearing screens, and early intervention programs for multiple users.

PHOTOVOICE IN PREGNANCY: A COMPLEMENT TO TRADITIONAL EPIDEMIOLOGICAL RESEARCH

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BACKGROUND: Adverse birth outcomes, such as preterm birth and low birthweight, are some of the most critical concerns in maternal and child health. These complications occur in over 21% of all U.S. births and account for more than 70% of all neonatal deaths. Because various biomedical, behavioral, and even sociodemographic factors have failed to explain adverse birth outcomes, further investigation into psychosocial risk factors, such as prenatal stress, is needed. Unfortunately, previous studies have had difficulty conceptualizing, operationalizing, and measuring psychosocial stress, and often rely on overly simplistic instruments.

STUDY QUESTIONS: Does the unique method of photovoice aid in identifying sources of stress and stress relief during pregnancy, and can it help to generate testable hypotheses on how women negotiate stress during pregnancy?

METHODS: Photovoice is a community-based participatory method that allows women to voice their everyday health experiences through photography. Participants (n=25) of Hispanic and non-Hispanic ethnicities were given a photo-assignment to capture images representing pregnancy-related stressors and stress relievers. These photographs were discussed during individual interviews that were transcribed and analyzed qualitatively using a grounded theory approach. Despite the small sample size, repetitive codes in the data were identified, and concept saturation was reached.

RESULTS: The key finding of this study was the relativity of stress experienced by pregnant women, both in terms of how women describe stressors and stress relievers, as well as in how they negotiate stress. The most frequently reported stressors were also often described as stress relievers, depending on social contexts. Grounded theory analysis revealed that women tend to cope with stress by comparing their current situations (e.g. financial or health) with the situations of others and with their own past experiences, thus modifying their perceptions of stress versus stress relief.

CONCLUSIONS: Qualitative methods, like photovoice and grounded theory, enable a deeper understanding of the relative nature of stress experienced by women during pregnancy, as well as of the ways women negotiate these stressors within dynamic and comparative frameworks.

PUBLIC HEALTH IMPLICATIONS: Qualitative methods, like photovoice, provide a useful complement to traditional epidemiological methods by giving voice to women whose experiences may be lost behind the numbers, while generating innovative and testable hypotheses.

DETERMINANTS OF MIXED FEEDING PRACTICES IN WOMEN ATTENDING FAMILY HEALTH CLINICS IN HARARE, 2007

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BACKGROUND: The Zimbabwe Health and Nutrition Survey in 2003 showed a high magnitude of mixed feeding in Harare, where complementary feeding was started in about 83% of the children below 6 months of age. Early complementary feeding (ECF) is not recommended because it marks the end of exclusive breastfeeding with its protective and nutritional benefits to the child. We identified determinants of early complementary feeding among women attending Family Health Clinics in Harare.

STUDY QUESTIONS: What are the determinants of early complementary feeding in infants below 6 months of age among women attending Family Health Clinics in Harare?

METHODS: We conducted a cross sectional analytic study. Care givers (n=160) bringing children below 6 months to Family Health Clinics for weighing and immunization were interviewed using a semi structured questionnaire to collect information on demographics, prevalence of and factors associated with early complementary feeding.

RESULTS: Early introduction of complementary foods/drinks in children <6 months was found among 81.3% of the caregivers. Children born at private health institutions were more likely to be mixed fed (Prevalence Odds Ratio (POR) =1.23, 95%CI: 1.10-1.38) and male infants were more likely to be mixed fed (POR=1.21, CI: 1.05-1.40) and those advised by health workers to give complementary foods (POR= 1.29, 95% CI: 1.17 – 1.42). Water, baby cereals and maize meal porridge were commonly given as complementary foods. Reasons for ECF were that the infants were hungry (64.1%) while 12.1% of caregivers felt their milk was not adequate for the baby and 7.7% mentioned that they were doing so as they had returned to work.

CONCLUSIONS: Determinants of early complementary feeding were place of delivery, sex of the child and health worker advice. Those who deliver in private institutions are of high social class, most likely employed and have little time to exclusively breastfeed. Males demand more feeding than girls and mothers adhere to advice from health workers.

PUBLIC HEALTH IMPLICATIONS: Community health education and promotion on breastfeeding should include family members of pregnant women as well. Information on the benefits of exclusive breastfeeding, and the problems with early complementary feeding should be imparted.

TRENDS IN OVERWEIGHT AMONG 3RD GRADE STUDENTS IN OHIO, 2004-2008

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BACKGROUND: Recent increases in prevalence of childhood overweight have led to increased local efforts to monitor changes in overweight prevalence.

STUDY QUESTIONS: Has the prevalence of overweight among of Ohio 3rd graders changed between 2004-2008?

METHODS: BMI assessment was added to Ohio Department of Health's oral health survey, which provides statewide estimates annually for 3rd graders. Public elementary schools were selected by probability proportional to size sampling without replacement. Children were directly weighed and measured by trained health care professionals. Using SAS procedures for complex sample design, prevalence of overweight (BMI for age > 85th percentile of the 2000 sex-specific CDC growth charts) was estimated overall and by sex, race/ethnic group, and free and reduced price meal (FRPM) eligibility. Differences between years and groups were tested using 2 tests ($p<0.05$). The survey was not initially designed for overweight as an outcome, limiting statistical power to perform tests for trend.

RESULTS: Height and weight measurements were obtained from 16,896 students between 2004-2008. Overall, there were no statistical differences in the proportions of 3rd graders who were overweight between survey years: 2004-05 (35.6%; 95% CI: 33.9-37.3), 2006-07 (34.3%; 95% CI:31.3-37.3), 2007-08 (34.6%;95% CI: 30.3-38.9) ($p>0.05$). There were no differences in overweight prevalence by survey year by sex or race/ethnicity. There were also no differences in prevalence by survey year among those who were or were not FRPM eligible, however, those who were FRPM eligible consistently had a higher overweight prevalence than those were not, regardless of survey year (2004-05: 40.3% vs. 32.4%; 2006-07: 41.8% vs. 28.7%; 2007-08: 38.9% vs. 31.3%; $p<0.05$ for each year).

CONCLUSIONS: Overweight prevalence among Ohio's 3rd grade students showed no significant changes between the 2004-05, 2006-07, and 2007-08 school years. Despite this, over 1/3 of Ohio 3rd graders are overweight and this prevalence remained consistent across survey years. Additionally, children who were FRPM eligible had a significantly higher overweight prevalence than those were not.

PUBLIC HEALTH IMPLICATIONS: Overweight prevalence among Ohio's school-aged children is similar to national estimates, but shows no sign of decline. Prevention efforts should be widespread, but with a targeted emphasis on those children who are FRPM eligible.

DIFFERENCES IN PREGNANCY OUTCOMES AFTER DIAGNOSES OF NEURAL TUBE DEFECTS

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BACKGROUND: Neural tube defects (NTDs) are a group of disorders encompassing spina bifida (SB), anencephaly (AN), and encephalocele (EN). NTDs occur during early fetal development and can cause severe, life-long complications. Studies to determine risk factors, prevalence, and morbidity/mortality rates associated with NTDs are ideally based on data from all NTD-affected pregnancies. However, because NTD cases often result in fetal death, spontaneous abortion, or elective termination after prenatal diagnosis, not all cases are captured in birth defects surveillance. Differences in pregnancy outcomes and failure to ascertain data from all NTD- affected pregnancies can cause bias. Information is limited regarding demographic associations with outcomes of NTD-affected pregnancies.

STUDY QUESTIONS: Do demographic differences exist between women whose NTD-affected pregnancies result in fetal death or live births versus pregnancies that are electively terminated?

METHODS: We used data from the Texas Birth Defects Registry, which collects data relating to structural birth defects and developmental disabilities diagnosed prenatally or =1year after delivery among Texas residents. Birth outcomes for NTD subtypes were compared by maternal race/ethnicity, age, education using Poisson regression to calculate crude and adjusted prevalence ratios (aPR). Covariates in adjusted models included age, race/ethnicity, education and geographic area of residence.

RESULTS: During 1999–2005, there were 1,868 NTD cases in Texas (AN=689; SB=957; EN=222). Compared to women aged <20 years, women aged 30-34 (aPR=.17, p<.01) and 35-39 years (aPR=.51, p<.05) had significantly lower rates of AN elective terminations. Compared to non-Hispanic whites, non-Hispanic black (aPR=2.7, p<.01) and Hispanic (aPR=3.9, p<.01) women had lower rates of SB elective terminations. Women with greater than a high school education had higher rates of elective terminations for SB (aPR=2.6 p<.05) and fetal deaths for EN (aPR=3.5, p<.01) than those with less than a high school education.

CONCLUSIONS: Differences among pregnancy outcomes exist by demographic groups. Comparing risk profiles for each defect across the three pregnancy outcomes will help determine the nature and degree of bias introduced by failing to include all pregnancy outcomes in surveillance of NTDs.

PUBLIC HEALTH IMPLICATIONS: Improving ascertainment of all NTD-affected pregnancies can reduce bias and greatly enhance our epidemiologic capacity to study and monitor NTDs.

OBESITY AND THE RISK OF PRETERM BIRTH: RESULTS FROM OHIO'S 2000-2007 RISK ASSESSMENT MONITORING SYSTEM (PRAMS)

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BACKGROUND: Maternal obesity before pregnancy has been shown to negatively impact pregnancy outcomes. In Ohio, preterm birth has increased from 10.2% in 2000 to 15.1% in 2007. Prepregnancy obesity has also increased and some studies have found an association between preterm birth and prepregnancy obesity.

STUDY QUESTIONS: To determine the independent risk of delivering a very preterm (10-31 weeks) or moderately preterm (32-36 weeks) infant in overweight and obese mothers.

METHODS: Data were from singleton pregnancies in 2000–2007 Ohio PRAMS. Prepregnancy BMI (kg/m2) was categorized as normal (18.5-24.9), overweight (25-29.9), or obese (=30). BMI < 18.5 were excluded. Using SUDAAN software, the OR for the association between prepregnancy BMI and very or moderately preterm birth were calculated after adjustment for confounders using logistic regression. Analyses were limited by weighted response rate <70% among black mothers and self-reported height and weight.

RESULTS: The unadjusted ORs for moderately preterm were not significant for overweight (OR: 0.98, 95% CI:0.81-1.18) or obesity (OR:1.19, 95% CI 0.99-1.44). Unadjusted ORs for very preterm were significant for overweight (OR=1.29 95% CI: 1.05-1.58) and obese (OR=1.49 95% CI: 1.25-1.77). Interactions were found between prepregnancy BMI and race for moderately preterm and with education for very preterm. After adjusting for smoke and prenatal care, ORs for moderately preterm were not significant among any maternal race group (range: 0.56-0.94). After adjusting for smoke, race, WIC, prenatal care, weight gain and previous live birth, only among those mothers over 20 with no high school education was overweight significantly associated with very preterm (OR: 1.64, 95% CI:1.07-2.53). ORs for very preterm were not significant among any other education groups (range: 0.90-1.59).

CONCLUSIONS: Amid the growing rates of overweight, obesity and preterm birth, no independent association was found between them in Ohio.

PUBLIC HEALTH IMPLICATIONS: While improving maternal preconception health through preventing or reducing obesity may improve other birth outcomes, it may have no impact on preterm birth.

CHILDHOOD OBESITY: A CONTENT ANALYSIS OF FOOD ADVERTISEMENTS AND PUBLIC SERVICE ANNOUNCEMENTS THAT AIR ON NICKELODEON

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BACKGROUND: Childhood obesity is an emerging public health issue with 17.0% of 6-11 year olds and 17.6 % 12-19 year olds overweight. Research has indicated that television plays a major role in unhealthy food choices for children.

STUDY QUESTIONS: Does the food advertisements on the children's television network Nickelodeon, represent their "Let's Just Play" campaign mission, which is to engage children to make healthy choices with foods and physical activities and raise awareness about good health and nutrition (Nick Jr., 2006)?

METHODS: A content analysis of food advertisements and public service announcements (PSAs) that air on Nickelodeon was conducted by collecting data on each food ad and PSA.

RESULTS: A total of 204 spots (192 food commercial ads and 12 public service announcements (PSAs) were counted between three Saturdays in March 2007 and three weekdays in April 2007. Cereals were the dominating food advertised on all Saturdays and weekdays combined (36.2% of ads), followed by candy and snacks (21.0%). PSAs comprised 5.9% of ad spots, although no PSAs were aired on any of the Saturday mornings during the time observed for this study.

CONCLUSIONS: This study illustrates that the content of Nickelodeon's ads, especially during peak programming hours, conflicts with their stated mission of helping children make healthy food choices.

PUBLIC HEALTH IMPLICATIONS: Childhood obesity is a major public health problem. Television can be influential in children eating habits and networks should play a more active role in reducing childhood obesity.

EXCLUSIVE BREASTFEEDING IN THE UNITED STATES: DOES BIRTH ORDER MATTER?

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BACKGROUND: In 2005, 12% of women in the United States breastfed exclusively for six months, while the Healthy People 2010 target is 17%. The six-month target for breastfeeding is important because introduction of other foods before 4-6 months of life may increase the risk of food allergies in children. Younger children may be exclusively breastfed without supplementation for a shorter duration than their older siblings as demands of growing families increase.

STUDY QUESTIONS: Are younger siblings less likely to be exclusively breastfed for four months compared to older siblings?

METHODS: We used the 2002 National Survey of Family Growth to analyze data on 6,531 singletons with siblings. Indicators for birth order were (1) second-born vs. first-born and (2) >=third-born vs. first- or second-born. Age at supplementation (non-exclusive breastfeeding) was categorized as never breastfed, <4 months, and >=4months. We were unable to distinguish specific supplemental foods, such as formula or solid food. To account for the complex survey design, SUDAAN was used to calculate weighted percentages and odds ratios (OR) with 95% confidence intervals (CI) from ordinal logistic regression models. Maternal age, marital status, education, income, and race/ethnicity were included as potential confounders. The last three factors were considered as potential effect modifiers.

RESULTS: Of 6,531 children, the weighted prevalence for never breastfed, <4 months, and >=4 months of age at supplementation was 41%, 37%, and 22%, respectively. In unadjusted models, birth order was not associated with age at non-exclusive breastfeeding. After adjustment, relative to first-borns, second-born children had greater odds of being not exclusively breastfed by 4 months (OR= 1.25, 95% CI: 1.09, 1.44). Odds of being not exclusively breastfed by 4 months did not differ for birth order >=3 compared to older siblings (OR= 1.11, 95% CI: 0.87, 1.41). No effect modification was observed. Additional analyses are planned to consider specific patterns of breastfeeding duration by birth order within families.

CONCLUSIONS: Second-born children may have a shorter duration of exclusive breastfeeding.

PUBLIC HEALTH IMPLICATIONS: Discussions about breastfeeding with women beyond their first birth should be continued with special attention to increasing the duration of exclusive breastfeeding to 4-6 months.

AUTISM SPECTRUM DISORDERS (ASD) AMONG PRESCHOOL CHILDREN PARTICIPATING IN THE MINNEAPOLIS PUBLIC SCHOOLS (MPS) EARLY CHILDHOOD SPECIAL EDUCATION (ECSE) PROGRAMS

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BACKGROUND: In 2008, in response to community concerns raised about high proportions of Somali children participating in MPS ECSE preschool programs for ASD, the Minnesota Department of Health agreed to assess the occurrence of ASD among Minneapolis preschool-age children.

STUDY QUESTIONS: Are administrative ASD prevalence rates for Somali children attending MPS ECSE ASD programs higher than those for non-Somali children?

METHODS: MPS special education administrative data were used to estimate ASD prevalence in birth cohorts of children ages 3-4 years participating in the ECSE Citywide ASD Classroom Program ("Classroom Program") and all ECSE ASD programs combined for each of three school years (2005-2006, 2006-2007, and 2007-2008). The birth cohorts included children having Minnesota birth certificates (BC) whose mothers were Minneapolis residents at the time of birth, and who were ages 3-4 years in a given school year. Because the BC and MPS datasets were not linked, four sets of birthplace and school district residency assumptions were used in the calculations. Exact 95% binomial confidence intervals and two-sample tests of independent proportions were computed.

RESULTS: Across analyses, administrative ASD prevalence for Somali and non-Somali children in the "Classroom Program" ranged from 0.93%–1.54% and 0.16%–0.47%, respectively. Estimates for Somali and non-Somali children in all programs combined ranged from 0.93%–1.54% and 0.21%–0.72%, respectively. With few exceptions administrative prevalence estimates for Somali children were significantly different (higher) from those for non-Somali children for both categories of MPS ASD programs, but the differences decreased with time as evidenced by markedly decreasing prevalence ratios.

CONCLUSIONS: Consistent with community concerns, administrative ASD prevalence was higher for Somali versus non-Somali children. Rapidly decreasing prevalence ratios suggest that non-causal changes in program participation may have occurred. Other potential biases relate to lack of information about baseline ASD rates in the population; errors in estimating the number of ASD cases; errors in estimating the size of the birth cohorts; and loss to follow-up and selection bias. Additional research is needed better understand this public health problem. Possible next steps will be discussed.

PUBLIC HEALTH IMPLICATIONS: Special education administrative data will not yield unbiased ASD prevalence estimates.

THE DEFINITION OF LIFE: CLINICAL PRACTICES REGARDING EXTREMELY PREMATURE BIRTHS IN NEW YORK CITY HOSPITALS

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BACKGROUND: Infant mortality rate (IMR) is dependent on reporting requirements, which are in turn influenced by clinical definitions of viability. US reporting areas differ in their definitions and reporting requirements for live birth and fetal death.

STUDY QUESTIONS: Our objectives were to examine clinical practices regarding the management of extremely premature infants in one reporting area, New York City (NYC), and examine the impact of these clinical practices on perinatal statistics.

METHODS: A telephone survey was used to gather data on clinical practices from physicians in charge of obstetrics and neonatal care in NYC hospitals. Perinatal data were obtained from the NYC Department of Health. The data were entered into a database and analyzed using SAS.

RESULTS: We found a lack of uniformity between and within hospitals regarding reporting requirements. For extremely premature births, clinical practices were dependent on the hospital's definition of viability. Infants born at 23 or more weeks gestation were considered viable, and often resuscitated, while infants born at less than 20 weeks were considered non-viable, and usually not resuscitated. For infants born at 20-22 weeks gestation, there were considerable differences in clinical practices. However, the management of these infants was based on standard hospital clinical practices which did not differ considerably among hospitals. Using perinatal statistics for NYC we found that the IMR for neonatologists who consider gestation in their definition of live birth was lower than that of neonatologists who did not. However, this difference in IMRs was not statistically significant. The lack of statistical significance was due in part to our small sample size.

CONCLUSIONS: This study offers insight into the gap between clinical practice and reporting of perinatal statistics. If there is an underreporting of live birth for infants on the threshold of viability, this leads to an underestimate of the total number of premature deliveries and the IMR.

PUBLIC HEALTH IMPLICATIONS: This study highlights the need for uniform perinatal definitions across state lines, and across hospitals within a given city. In order for perinatal statistics to be meaningful nationally, the lack of uniformity in reporting requirements needs to be addressed.

PREVALENCE OF CONTRACEPTIVE USE AMONG POSTPARTUM WOMEN AT RISK FOR UNINTENDED PREGNANCY BY CONTRACEPTIVE METHOD EFFECTIVENESS — 12 STATES AND NEW YORK CITY, 2004–2006

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CDC

BACKGROUND: Almost half of all pregnancies in the United States are unintended and 11% of births have short interpregnancy intervals; both associated with adverse outcomes. Postpartum use of highly effective contraceptive methods is an important strategy for preventing unintended pregnancies and ensuring adequate birth spacing.

STUDY QUESTIONS: To estimate the prevalence of contraceptive use at 2–9 months postpartum
To explore variations in postpartum use of highly effective contraceptive methods by maternal characteristics

METHODS: Using data from the 2004–2006 Pregnancy Risk Assessment Monitoring System for respondents at risk of unintended pregnancy (postpartum women who were sexually active and not currently pregnant) in 12 states and New York City (n=44,464), we examined postpartum contraceptive practices. We estimated the prevalence of postpartum contraceptive use and method effectiveness (high/moderate/low) by maternal characteristics using STATA software. Chi-square testing was used to identify statistically significant differences between subcategories of maternal characteristics.

RESULTS: We found 88% of postpartum women at risk for unintended pregnancy reported current use of some form of contraception: 62% reported using highly effective methods (<10% of women experience an unintended pregnancy during the first year of typical use), 20% relied on a moderately effective contraceptive method (15% failure rate during the first year of typical use), 6% used methods with low effectiveness (>15% failure rate during the first year of typical use), and 12% used no method. Subgroups with lower rates of using highly effective contraceptive methods (sterilization, IUD, and hormonal methods) compared with their respective referent groups included: New York City residents (43%), Asian Pacific Islanders (35%), women who reported that their most recent pregnancies were wanted sooner (50%), women aged 35+ years (53%), and women who had no prenatal care (55%). Furthermore, over 23% of women who had no prenatal care reported using no postpartum contraception.

CONCLUSIONS: Rates of highly effective contraceptive use are low among certain populations of postpartum women. Further examination of reasons for the low rates is warranted.

PUBLIC HEALTH IMPLICATIONS: State policy makers and health care providers can use these results to promote use of highly effective contraception among postpartum women in order to decrease unintended pregnancies and increase healthy birth spacing.

RACIAL/ETHNIC DISPARITIES IN THE RECEIPT OF SMOKING CESSATION INTERVENTIONS DURING PRENATAL CARE

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BACKGROUND: A smoking cessation protocol called the Five A's (Ask, Advice, Assess, Assist, Arrange) has been shown to increase quit rates by 30-70% among pregnant smokers when delivered by a prenatal care (PNC) provider. There is evidence that patients from racial/ethnic minority groups do not receive adequate health promotion counseling, including about smoking, during PNC as compared to patients from the majority white population.

STUDY QUESTIONS: We sought to explore racial and ethnic disparities in provision of optimal smoking cessation interventions during prenatal care.

METHODS: Weighted logistic regression was performed on data from the 2000-2001 Oregon Pregnancy Risk Assessment Monitoring System (PRAMS) that collects information about whether women received three of the Five A's (Ask, Advice, and Assist; the Three A's) during PNC. The unweighted response rate was 72.6% (N= 3,895). The study population comprised of first-trimester pregnant smokers.

RESULTS: Of the 594 pregnant smokers, only 42.2% of them reported receiving the Three A's. Smoking counseling was not offered uniformly across race/ethnic groups. Despite having the highest smoking prevalence, Native American women were 0.45 times as likely (95% CI: 0.24, 0.85) as Whites to recall having received the Three A's (in a multivariate logistic model). In contrast, Blacks were 2.43 times more likely (95% CI: 1.16, 5.10) than Whites. The relationships remained statistically significant after controlling for socioeconomic factors.

CONCLUSIONS: Most pregnant smokers of all races did not receive adequate assistance to quit, indicating that there is a need to improve the training of PNC providers to address tobacco dependency. The need for this training may be most urgent in providers who care for Native American women.

PUBLIC HEALTH IMPLICATIONS: Healthcare systems should implement system prompts and supports for providers to remind them to address tobacco use with pregnant smokers. These prompts may be most important for systems that care for pregnant Native American women.

PREDICTORS OF PREGNANCY LOSS IN AFGHAN WOMEN PRESENTING TO TERTIARY CARE HOSPITALS- KABUL AFGHANISTAN

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BACKGROUND: Stillbirth and miscarriage are most common adverse outcomes of pregnancy. Worldwide each year, four million stillbirths are reported, with 97% occurring in developing countries and very much prevalent in Afghan society.

STUDY QUESTIONS: To determine factors associated with stillbirth and miscarriage in women presenting to tertiary care hospitals in Kabul Afghanistan

METHODS: Case control study design was carried out to achieve the study objectives. A total of 156 cases (51 Stillbirth and 105 miscarriages) and 373 controls (live births) were selected and interviewed between Julys to September 2007 at two tertiary Care hospitals of Kabul city Afghanistan. For analysis purpose we developed three models, one for women who had miscarriages with live births, second for women who had Stillbirths and live births and third for combination of Stillbirth and miscarriages as a case with live births (Controls).

RESULTS: One hour increase in exposure to fuel smoke during pregnancy, the odds of miscarriage increased by 1.3 with 95% CI: (1.08, 1.48). With each additional pregnancy the odds of miscarriage increased by 1.4 (Adj OR=1.4, 95% CI: 1.00, 1.95).

One hour increase in exposure to daily fuel smoke the odds of Stillbirth increase by 1.2 (95% CI 1, 1.45)

Odds of not receiving antenatal care was higher among women who had pregnancy losses as compared to women who had live births (Adj OR= 2, 95% CI: 1.26 3.12).

With each hour increase exposure to fuel smoke the odds of pregnancy loss was increased by 1.2 (95% CI: 1.03, 1.33).

CONCLUSIONS: Pregnancies occurring in late reproductive age, previous history of Stillbirths or miscarriages, high number of pregnancy and exposure to fuel smoke are associated with pregnancy loss.

PUBLIC HEALTH IMPLICATIONS: As we have found an association between fuel smoking and adverse pregnancy outcome, and in Afghanistan mostly people are using fuel which make smoke and cooking in close environment, policies needed to be developed to reduce exposure to burden due to adverse pregnancy outcome.

SURVIVAL OF INFANTS WITH FIVE MAJOR CONGENITAL HEART DEFECTS

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BACKGROUND: Infants born with a single functional ventricle have the highest mortality of any congenital heart defect (CHD), typically requiring two complex surgeries in the first year, and a third procedure in early childhood. Although these cases collectively remain the most fatal of all CHDs, no recent population-based studies have been reported on survival beyond 1 year.

STUDY QUESTIONS: What is the defect-specific five-year survival for infants with single left or right ventricle defects?

METHODS: We used data from the Texas Birth Defects Registry to conduct a retrospective cohort study on 1,007 live-born infants with CHDs born 1996-2003 to Texas resident women. CHDs included were d-transposition of the great arteries (d-TGA), tricuspid valve atresia, pulmonary valve atresia with intact ventricular septum, hypoplastic left heart syndrome (HLHS), and single ventricle. Each case was reviewed by a pediatric cardiologist for confirmation of defect classification. The Kaplan-Meier method was used to calculate five-year unadjusted survival rates and Cox-proportional hazard regression models were used to compute adjusted hazard ratios (HR) and 95% confidence intervals (CI) for each defect. Maternal age, race/ethnicity and education, infant sex, era of birth, birthweight, gestational age, and presence of extra-cardiac defects were considered in the models to adjust for potential confounding.

RESULTS: Five-year survival was highest for infants with isolated d-TGA (92.6%; 95% CI: 88.0, 95.5) and tricuspid valve atresia (78.1; 95% CI: 64.7, 86.9). The lowest five-year survival was for infants with HLHS (40.9; 95% CI: 34.9, 46.8) and pulmonary valve atresia (56.6; 95% CI: 45.8, 66.0). After adjusting for potential confounders, infants with HLHS had the poorest survival (HR=8.5: 95% CI: 5.5, 13.1) followed by single ventricle (HR=4.1; 95% CI: 2.6, 6.5) and pulmonary valve atresia (HR=3.9; 95% CI: 2.4, 6.5) compared to infants with d-TGA.

CONCLUSIONS: Although functional single ventricle cases may undergo similar surgical procedures, five-year survival varies significantly among diagnostic categories. Other factors associated with childhood survival need to be further investigated.

PUBLIC HEALTH IMPLICATIONS: There is significant improvement in five-year survival for infants born after 2000 with a functional single ventricle. Survival will continue to improve with advances in medical technology.

THE EFFECTS OF GESTATIONAL AGE, FETAL GROWTH, AND MATERNAL RACE-ETHNICITY ON LONG-TERM SURVIVAL OF INFANTS BORN WITHOUT BIRTH DEFECTS

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BACKGROUND: Infants born preterm or small-for-gestational age (SGA) have higher mortality than term, appropriate-for-gestational age (AGA) infants. However, less is known about the interactive effects of gestational age, fetal growth, and maternal race-ethnicity on risk of childhood mortality, particularly among infants without birth defects (BD), the leading cause of infant morbidity and mortality in the United States.

STUDY QUESTIONS: What is the effect of gestational age, fetal growth, and maternal race-ethnicity on survival of infants born without BDs?

METHODS: We selected all singleton infants born alive from 1996-2003 to non-Hispanic (NH)-white, NH-black, or Hispanic women residing in Texas at the time of delivery. Vital status was tracked through December 31, 2005 by linking to Texas death records. We limited the analysis to infants not affected by a major BD by excluding those live births that linked to the Texas BD Registry. Information on medical, pregnancy, and sociodemographic factors was collected from birth certificates. Kaplan-Meier survival curves were used to describe the pattern of survival within the first five years of life for levels of each study variable. Using proportional hazards regression, we calculated crude hazard ratios (HR) and 95% confidence intervals (CI) to describe the effect of gestational age, fetal growth, and maternal race-ethnicity on survival.

RESULTS: During the study period, 15,807 children died, with 80.9% occurring in the first year of life. In this population of infants without BDs, the infant mortality rate was 4.8 per 1,000 live births. HRs ranged from 0.7 to 17.4 for infants depending on gestational age, fetal growth, and maternal race-ethnicity. Compared to NH-white infants born term and AGA, infants born SGA and preterm had the highest risk of death (NH-blacks: HR=17.5, 95%CI: 15.7, 19.4; Hispanics: HR=15.0, 95%CI: 13.8, 16.4; NH-whites: HR=15.0, 95%CI: 13.7, 16.5).

CONCLUSIONS: The interactive effect of gestational age, fetal growth, and maternal race-ethnicity on mortality is greater than the individual effect of any one factor.

PUBLIC HEALTH IMPLICATIONS: Further elucidating this complex relationship between gestational age, fetal growth, and maternal race-ethnicity will provide a better understanding of mortality in infants without BDs.

BLACK-WHITE DISPARITIES IN BIRTH OUTCOMES: AN EXAMINATION WITHIN NEIGHBORHOODS

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BACKGROUND: Individual-level factors have not explained Black-White disparities in low birth weight (LBW, <2500 grams), preterm birth (PTB, <37 weeks' gestation), or small-for-gestational-age (SGA, <10% birth weight for gestational age). A growing body of studies that control for various neighborhood-level factors have also failed to explain Black-White gaps, however no LBW/PTB studies have controlled for all neighborhood features, both observed and unobserved, by comparing only Black and White women who live within the same neighborhoods.

STUDY QUESTIONS: How does the Black-White gap in birth outcomes change when conditioned on the neighborhood of residence?

METHODS: Data come from 1999-2001 birth certificate records for Durham and Wake counties in North Carolina. Singleton non-Hispanic births to Black (N=10,338) and White (N=21,279) mothers with gestational age information and geocodable addresses were selected for analysis. Census tracts were used to define the neighborhood of residence (n=157). Black-White odds ratios for LBW, PTB, and term SGA obtained from random effect logistic models were compared with those that conditioned on neighborhood of residence. Effect modification by neighborhood deprivation, a composite indicator of income/poverty, education, employment, housing, and occupation, was also explored.

RESULTS: After conditioning on the neighborhood of residence, odds ratios for Black compared to White women were reduced by 15% for LBW (2.96 to 2.52), 16% for PTB (1.98 to 1.66), and 12% for term, SGA (2.70 to 2.38). In conservative models that controlled for individual-level maternal sociodemographic characteristics (maternal age, education, parity, marital status), conditioning on the neighborhood only altered the Black-White OR between 2%-8%: LBW 2.22 to 2.08, PTB 1.57 to 1.44, term-SGA 2.03 to 1.98. Black-White ORs were consistent within quartiles of neighborhood deprivation.

CONCLUSIONS: In two counties of North Carolina with a substantial proportion of both Black and White families living in the same neighborhoods, racial disparities were only marginally reduced by conditioning on the neighborhood of residence.

PUBLIC HEALTH IMPLICATIONS: While there may be unmeasured variation within census tracts, the large degree of disparity that remains after controlling for observed and unobserved characteristics between neighborhoods suggests that other non-neighborhood factors may play larger roles in generating racial inequalities in birth outcomes (e.g. intergenerational factors, the broader social context and history of race, interpersonal and institutional discrimination).

EVALUATION OF BREASTFEEDING SURVEILLANCE: USING NEWBORN SCREENING DATA TO MONITOR BREASTFEEDING INITIATION—TEXAS, 2005-2008

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BACKGROUND: Breastfeeding is known to provide significant health benefits for infants. A Healthy People 2010 goal is to increase breastfeeding in the early postpartum period to 75%. Presently, there is no standardized and validated method for monitoring rates of breastfeeding initiation nationally or in Texas. Newborn screening (NBS) is mandated by law in Texas. Method of infant feeding (breast milk or formula) at the time of specimen collection, which typically occurs within 48 hours after birth, is recorded on the NBS form that accompanies infant blood specimens submitted for testing.

STUDY QUESTIONS: Can data from the Newborn Screening form be validated as a source of surveillance for breastfeeding initiation in Texas?

METHODS: Breastfeeding initiation within the first 48 hours after birth was measured. Data were collected from a single question regarding infant feeding on the Texas NBS form for 2005-2008. NBS results were compared to the most recent available breastfeeding data from the Texas Pregnancy Risk Assessment Monitoring System (PRAMS) and Texas data from the National Immunization Survey (NIS). Estimates of breastfeeding initiation were also compared to Texas birth certificate data. The most recent year for which all four data sources were complete is 2005. More recent estimates for three of the data sources are available for 2007.

RESULTS: Rates of breastfeeding initiation in 2005 from NBS (N=339,981) and TX birth certificates (N=382,071) were 72.7% and 73.4%, respectively. Proportion of children ever breastfed according to PRAMS (weighted N= 363,146) was 79.0% (95% CI: 76.3-81.6). Proportion of children ever breastfed according to NIS was 77.9% (95% CI 73.8-82.0). More recent data in 2007 from NBS, birth certificate (provisional data) and PRAMS show breastfeeding initiation prevalence rates of 74.7% (N=360,332), 76.0% (N=401,562), and 80.8% (weighted N= 387,817; 95%CI 78.2-83.4), respectively.

CONCLUSIONS: Prevalence estimates of breastfeeding initiation from NBS data are consistent with the birth record as well as other state-wide, representative sample surveys.

PUBLIC HEALTH IMPLICATIONS: NBS data provides a real-time, population-based method for surveillance of breastfeeding initiation. Recent changes to the NBS card will allow for capture of exclusivity of breastfeeding at two-week newborn screen follow-up.

ASSOCIATIONS BETWEEN DEPRESSED MOOD, PERCEIVED WEIGHT, AND PLACE OF RESIDENCE IN MIDDLE AND HIGH SCHOOL AGE STUDENTS – TEXAS 2004-2005

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BACKGROUND: Depressed mood may affect as many as 25% of all adolescents, sometimes leading to more severe depression and other mental conditions later in life. Therefore, it is important to develop interventions that specifically target this age group.

STUDY QUESTIONS: What are the associations of perceived weight and place of residence with depressed mood among Texas adolescents, and how do these effects differ by grade and sex?

METHODS: Data from the 2004-2005 Texas School Physical Activity and Nutrition (SPAN) survey of 8th and 11th graders was analyzed. Depressed mood in the past year and perceived weight were self-reported. Actual body mass index (BMI) was calculated from measured height and weight. Urban/rural residence was determined by location of the school attended. Multivariate logistic regression was used to assess associations with depressed mood, stratified by grade and sex and adjusted for sociodemographic characteristics, physical activity and nutritional behaviors.

RESULTS: Increased odds of depressed mood were found among normal/underweight 8th graders who perceived themselves as underweight, compared to normal weight 8th graders who perceived themselves to be normal weight (Boys: AOR: 2.19, 95%CI: 1.23-3.90; Girls: AOR: 2.08, 95%CI: 1.03-4.17). Perceived overweight among normal/underweight 8th graders was also associated with increased odds of depressed mood (Boys: AOR: 2.15, 95%CI: 1.12-4.13; Girls: AOR: 2.23, 95%CI: 1.36-3.64). There was no association between weight perception and depressed mood among overweight 8th graders. Rural residence was associated with decreased odds of depressed mood among girls (AOR: 0.59, 95%CI: 0.38-0.94) but not for boys. Although no significant associations between weight perception and depressed mood were observed after adjustment among 11th graders, suburban or rural residence as compared to urban was associated with more than a two-fold increase in odds of depressed mood among girls and more than a three-fold increase in boys.

CONCLUSIONS: Weight perceptions may have a significant influence on depressed mood in younger adolescents, while place of residence may exert a greater effect among older adolescents.

PUBLIC HEALTH IMPLICATIONS: Interventions targeting adolescent mental health must consider the different factors contributing to depressed mood in middle and high school age adolescents.

INCREASED RISK OF HIRSCHPRUNG'S DISEASE AMONG ALASKA NATIVES IDENTIFIED FOLLOWING VERIFICATION OF REPORTED CASES, 1996-2006

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BACKGROUND: During birth years 1996-2002, reported Hirschsprung's Disease birth prevalence in Alaska was 13.3 per 10,000 live births, approximately six times higher than national estimates, with no significant disparities by race, maternal age, Alaska Native status or maternal residence.

STUDY QUESTIONS: Is the high reported Hirschsprung's Disease prevalence, occurring throughout all Alaskan populations, a true estimate of Hirschsprung's Disease prevalence?

METHODS: Alaska Birth Defects Registry staff traveled to hospitals and clinics to review medical records for all children identified with Hirschsprung's Disease with birth years 1996-2007. Hirschsprung's Disease was confirmed when a child's medical chart documented positive diagnostic testing by rectal biopsy. Reported Hirschsprung's Disease was ruled out when the chart indicated that diagnostic tests were negative, when there was a physician note that Hirschsprung's Disease had been ruled out, or when an alternate diagnosis was confirmed. Records were cross-referenced with hospital discharge data.

RESULTS: During birth years 1996-2007 Hirschsprung's Disease prevalence fell from 9.8 per 10,000 live births before case verification to 3.0 per 10,000 live births after case verification. Hirschsprung's Disease prevalence following case verification was 51% lower than previous estimates among Alaska Native infants (5.6 compared to 11.6 per 10,000 live births) and 77% lower among non-Native infants (2.1 compared to 9.2 per 10,000 live births). Following case verification, Alaska Native infants had confirmed Hirschsprung's Disease rates three times that of non-Native infants (Relative Prevalence = 2.7, 95% confidence interval: 1.4 – 5.2). Positive predictive value for a report of Hirschsprung's Disease to the Birth Defects Registry varied by reporting source (range: 29%-100%). Cross-referencing verified cases with hospital discharge data confirmed medical record results and demonstrated high sensitivity for multiple-source reporting.

CONCLUSIONS: A case-verification study in Alaska demonstrated that high rates of false positive reporting obscured a three-fold increased risk of Hirschsprung's Disease for the Alaska Native population.

PUBLIC HEALTH IMPLICATIONS: Case verification for Hirschsprung's Disease is necessary when estimating Hirschsprung's Disease prevalence from data collected using passive surveillance methodology. Use of hospital discharge data is a potentially useful tool both for case verification and for estimating sensitivity of the reporting system.

INTIMATE PARTNER VIOLENCE IN HAWAII – MULTIRACIAL INFLUENCES

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BACKGROUND: Intimate partner violence (IPV) has been linked to many negative health outcomes, such as physical injury, depression and suicidal behavior. National research has shown that being multiracial (having more than one race) increases the chance of experiencing IPV. Almost 1 in 5 people in Hawaii are multiracial.

STUDY QUESTIONS: Are multiracial women at higher risk of intimate partner violence in Hawaii?

METHODS: Data from 3,910 adult women from 2007 Hawaii BRFSS, a population based telephone survey of health behaviors in adults was analyzed. IPV was defined as ever having experienced physical violence. Two multivariate logistic regression modeling analyses were done. The first compared multiracial versus single race Caucasian, Asians and Native Hawaiian or Pacific Islander (NHOPI); while the second looked at multiracial versus specific single race groups. This analysis is part of a larger project to describe IPV in Hawaii using several data sources.

RESULTS: In 2007, 18.8% of multiracial (95% CI: 16.1-21.9), 18.4% of Caucasian (95% CI: 15.41-21.9), 10.5% of Asian (95% CI: 7.3-15.0), and 8.5% of NHOPI (95% CI: 3.6-18.6), women in Hawaii experienced IPV. After adjustment for age, education, and income, multiracial women were at increased odds of IPV (aOR= 1.42, 95% CI 1.07-1.89). In the second portion of the analysis, those who were multiracial (aOR=2.26 95%CI 1.48-3.46) and those who were single race Caucasian (aOR=2.70 95%CI 1.84-3.96) were at increased odds of IPV compared to single race Asians.

CONCLUSIONS: In Hawaii, prevalence of IPV was greater among multiracial than single race women. However, the data indicate that being single race Caucasians or being multiracial increases odds of IPV. Underreporting in the Asian community may reflect these differences. Yet, being multiracial may have less of an influence on IPV in Hawaii, as the Caucasian group showed ever higher odds of reporting IPV.

PUBLIC HEALTH IMPLICATIONS: Further research is needed nationally to disaggregate multiracial groups compared to those with only one reported race. In Hawaii, focus should include uncovering any reporting bias in the Asian community and further understanding the influence, if any, that race has on IPV.

RACIAL DISPARITIES IN PREGNANCY PLANNING AMONG SOUTH CAROLINA MOTHERS PARTICIPATING IN THE PREGNANCY RISK ASSESSMENT MONITORING SYSTEM (PRAMS), 2004-2007

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BACKGROUND: Much of the existing family planning literature focuses on pregnancy intention (women's feelings about becoming pregnant). Several studies indicate black women have significantly higher rates of unintended pregnancy than white women. It has been suggested, however, that pregnancy planning (the presence or absence of behaviors to prevent pregnancy) may be more important than pregnancy intention to program planners. Few studies examine racial disparities in pregnancy planning.

STUDY QUESTIONS: Are racial disparities observed in pregnancy planning among South Carolina women delivering live-born infants?

METHODS: Data from the 2004-2007 South Carolina PRAMS are used to investigate racial disparities in pregnancy planning. SAS-callable SUDAAN is used for data analysis to accommodate the complex random sampling design. Racial disparities in pregnancy planning are examined using bivariate and multiple logistic regression analyses. Limitations of this study include potential bias introduced by the self-report nature of PRAMS and lack of generalizability to pregnancies not ending in live births and to states other than South Carolina.

RESULTS: Black women whose partners did not want them to be pregnant had significantly lower odds of having an unplanned pregnancy than a planned pregnancy (AOR: 0.26; 95% CI: 0.08 – 0.86), while black women whose partners did want them to be pregnant had greater odds of having an unplanned pregnancy (AOR: 1.58; 95% CI: 1.11 – 2.24) or a pregnancy that was neither planned nor unplanned (AOR: 2.69; 95% CI: 1.42, 5.11). Further, black women with a household income of less than $10,000 had significantly lower odds of having a neither planned nor unplanned pregnancy (AOR: 0.38; 95% CI: 0.19, 0.75), while black women with an income of $35,000 or more had greater odds of having a neither planned nor unplanned pregnancy (AOR: 2.69; 95% CI: 1.42, 5.11).

CONCLUSIONS: Racial disparities exist in pregnancy planning among South Carolina mothers delivering live-born infants, but are modified by partner's intention and household income.

PUBLIC HEALTH IMPLICATIONS: Further studies are warranted to help elucidate the relationship between race and pregnancy planning. Health professionals should be aware of the difference between pregnancy intention and pregnancy planning, and that black mothers may be more or less likely to have planned pregnancies, depending on other factors.

LOS ANGELES COUNTY PERINATAL DEPRESSION SCREENING PRACTICES AMONG MEDICAID PROVIDERS

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BACKGROUND: Up to 60% of low-income and ethnic minority pregnant women have depressive symptoms. Untreated perinatal depression is associated with poor birth outcomes and future depressive episodes. Despite the prevalence and impact, depression screening is not universal in perinatal care.

STUDY QUESTIONS: What are the depression screening practices among Medicaid perinatal care providers in Los Angeles County?

METHODS: A Perinatal Depression Survey was sent via mail and email to Medicaid perinatal care providers in Los Angeles County (N=425). The ten-question self-reported survey assessed depression screening practices. A descriptive analysis was performed.

RESULTS: 24% (104/425) of providers responded. In total, 30,351 new patients were seen annually by participating respondents. 66% (6,903/30351) were Hispanic, 10% (1,056/30351) African-American, 9% (900/30351) Caucasian, 2% (229/30351) Asian, and 4% (313/30351) multiracial/other. 46% of respondents (48/104) indicated not screening for depression at any point during perinatal care. The four main reasons for not screening were: lack of screening tools, lack of referral resources, perceived lack of depressed patients, and perceived patient discomfort. Of those screening for depression, 59% (29/49) used validated screening tools and 41% (20/49) used non-validated tools. Moreover, 22% (11/49) of respondents screened at the initial visit, 24% (12/49) each trimester, 35% (17/49) during all prenatal visits, and 18% (9/48) postpartum.

CONCLUSIONS: The results of questionnaire indicate 46% of prenatal care providers do not screen for depression. 41% of providers use non-validated screening tools. These results signify the need to implement routine depression screening practices using validated screening tools in Los Angeles County, where over half of the pregnant women are covered by Medicaid and are minority, two significant risk factors for depression. In the study, providers already screening for depression may have been more likely to complete the survey, thereby contributing to a response bias.

PUBLIC HEALTH IMPLICATIONS: Pregnant and postpartum women are at increased risk for depressive symptoms creating adverse effects on physical and psychological health of mothers, children, and families. It is imperative to improve depression screening practices through education on prevalence, signs, symptoms, and diagnosis using validated instruments in the patients' language of choice, and providing mental health resources for referrals.

VARIABILITY IN MATERNAL UTILIZATION PATTERNS OF PEDIATRIC HEALTH CARE, A LIFE-COURSE PERSPECTIVE

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BACKGROUND: Receiving appropriate health care in infancy sets the stage for life-long health issues. Maternal differences in pediatric health care utilization exist. Focusing on maternal life course stages, this study identifies factors and moderators associated with these differences.

STUDY QUESTIONS: What factors influence infant pediatric health care utilization patterns? How do these factors differ at various points in a mother's life?

METHODS: Data for this cross-sectional study were obtained from 126 US-born English-speaking Caucasian, Black, and Hispanic women with infants receiving Medicaid-funded health care in Florida. Data included demographics, CAHPS experience of care questions, maternal attachment style (secure, anxious, avoidant) and utilization rates. Correlations, ANOVA, linear and Poisson Regressions were conducted.

RESULTS: Children averaged 5.8 well child, 5.0 sick, and 0.5 emergency department (ED) visits. Women with one child had more well care visits ($p<.05$) and were younger ($p<.001$). Women experiencing pre-pregnancy health problems were older ($p<.01$) and more likely to report current health issues ($p<.001$). As maternal age increased, CAHPS experiences of care "Overall Provider Ratings" ($p<.05$) and "Overall Provider Office Ratings" ($p<.05$) declined. Black mothers were younger ($p<.05$), the infants received fewer well care visits ($p<.05$) and were more likely to have an avoidant attachment style ($p<.01$). Being the mother's first child moderated attachment style's impact on sick visits ($p<.05$). For first-time mothers, higher avoidance scores resulted in fewer sick visits. If avoidant mothers had other children, utilization patterns resembled other mothers. Secure mothers used EDs more often ($p<.05$) with maternal age moderating the association of secure attachment style on ED use; older mothers had fewer visits ($p<.001$).

CONCLUSIONS: Relationships between age, birth order, maternal health and pediatric health care utilization are multifaceted. Using a life course perspective, the changing use patterns indicate that more life experiences help develop a better understanding of children's health care needs. Anticipatory guidance for first-time mothers, especially those having high avoidant attachment styles, may help promote more appropriate health care utilization patterns.

PUBLIC HEALTH IMPLICATIONS: A greater understanding of issues that promote appropriate pediatric health care utilization can help intervention programs maximize their efficiency by customizing services to meet individual needs.

QUALITY OF THE FAMILY ENVIRONMENT: TEEN PREGNANCY AND EDUCATIONAL ATTAINMENT

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BACKGROUND: Children born to teenage mothers are at risk for poorer developmental outcomes and home environments than children born to adult mothers. However, there may be opportunities and experiences that help teenage mothers improve developmental outcomes for their children.

STUDY QUESTIONS: The purpose of this study is to explore how educational attainment following teenage childbearing may counterbalance risks and close the gaps in well being for children born to teen and adult mothers.

METHODS: The data for this study come from the Panel Study of Income Dynamics (PSID) and the Child Development Supplement (CDS-I). Using a subsample of CDS-I families with children aged 0-12 with complete data (N=2,981), variation by in cognitive stimulation and emotional support parents provide children (HOME Scale; Caldwell & Bradley, 1984) was explored by age at first birth and educational attainment.

RESULTS: Bivariate analyses revealed that children born to teenage mothers had significantly lower HOME scores (M = 16.9, SD = 8.7) than children born to adult mothers (M = 18.3, SD = 11.7). In multivariate analyses, these differences in HOME scores by age at birth varied depending on maternal education. Returning to school for teenage mothers had significant and positive implications for HOME scores. Teenage mothers who returned to school had significantly better home environments than teenage mothers who never went back to school (M = 18.1 vs. 17.1). Teenage mothers who went back to school also had significantly better home environments than adult mothers who never graduated from high school (M = 18.1 vs. 17.5). Women were able to overcome the risks of teenage births by returning to school.

CONCLUSIONS: Additional education following teen births was associated with significant gains in emotional and cognitive support available to children. There were virtually no differences in the quality of the home environment between adult mothers and teenage mothers who returned to school.

PUBLIC HEALTH IMPLICATIONS: Encouraging teenage mothers to stay in or return to school after pregnancy has long term positive effects on family environment. Additional education represents an opportunity to help teenage mothers form optimal family environments for their children's well being.

BIRTH DEFECTS SURVEILLANCE IN FLORIDA: INFANT DEATH CERTIFICATES AS A CASE ASCERTAINMENT SOURCE

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BACKGROUND: Completeness of ascertainment is a concern for any birth defect (BD) registry. However, passive surveillance programs may have greater susceptibility to underreporting. Case ascertainment should be comprehensive, considering data from multiple sources. As BDs are the leading cause of infant death in the United States, the use of infant death certificates as a case ascertainment source may be fruitful in identifying cases of BDs that would have otherwise been missed.

STUDY QUESTIONS: What utility is gained by adding infant death certificates to Florida's ascertainment methods, and what factors are associated with the registry's failure to identify infants that die from BDs?

METHODS: The Florida Birth Defects Registry (FBDR) is a statewide, population-based, passive surveillance system that monitors BDs identified by age one in live-born children. FBDR cases from 1999-2006 were matched to a linked birth-infant death file obtained from the Office of Vital Statistics. Descriptive statistics were used to assess the FBDR's ability to identify infants whose underlying cause of death (UCOD) was a BD, and we investigated conditions most commonly missed. Logistic regression was used to identify factors associated with the FBDR's failure to identify an infant having died from a BD during the first year of life.

RESULTS: During the study period, 12,107 infants died with 2,253 (18.6%) having a BD listed as the UCOD. The FBDR identified 84.6% of those and the most often missed defects included renal agenesis, anencephaly, normal variants such as hypoplasia/dysplasia of the lung, and unspecified malformations. Logistic regression identified the following as associated with the FBDR's failure to identify an infant having died from a BD: maternal nativity, infant sex, gestational age, birthweight, plurality, age at death, and autopsy.

CONCLUSIONS: The FBDR did not identify 15% of infant deaths with BDs as the UCOD. While the overall contribution of infant death certificates to the FBDR is small, prevalence for specific defects (i.e. anencephaly) may be affected.

PUBLIC HEALTH IMPLICATIONS: Death certificate UCOD data quality requires further evaluation to determine the utility of infant death certificates as a data source for passive case-finding in the FBDR.

THE PRE-PREGNANCY HEALTH AND INSURANCE STATUS OF PREGNANT LOW-INCOME WOMEN IN TWO HIGH-RISK CHICAGO COMMUNITIES

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BACKGROUND: Early, high-quality prenatal care potentially optimizes healthy outcomes for women, infants, and families. However, women who enter prenatal care with untreated chronic illness are less likely to reap the benefits of prenatal care. Given the prenatal focus of Medicaid funding, it is possible that women with chronic illnesses may lack insurance prior to pregnancy. As preconception and interconception health care gain attention as strategies for improving pregnancy outcomes, it is important to understand the role of insurance coverage for women prior to pregnancy, particularly among low-income women with chronic illness.

STUDY QUESTIONS:
1) What is the prevalence of chronic illness among a population of low-income pregnant women?
2) Is there a difference in the pre-pregnancy insurance status of women with and without chronic illness?
3) What are the implications of lack of pre-pregnancy insurance for low-income women with chronic illness?

METHODS: A structured survey asked 130 postpartum African American low-income women in two high-risk Chicago communities about health (chronic illness) and insurance status before and during pregnancy. Survey results were analyzed using SPSS statistical program.

RESULTS: The mean age of respondents was 25.4 years, almost 60% had a high school education or less, and the average number of previous live births was 1.9. During pregnancy, 42.3% received TANF, 80.8% used WIC and food stamps, and 59.2% reported total household income under $1000/month.

Medicaid coverage prior to pregnancy was reported by 76% of the participants, private insurance by 11.5%, and 11.5% were uninsured. Ninety-three percent (93%) of the women reported Medicaid payment for delivery.

Participants reported 11 chronic illnesses, including lung problems/asthma (20.8%), migraines (16.9%), and obesity/overweight (10.8%). Among women with pre-pregnancy chronic illness, 85.2% had pre-pregnancy Medicaid, 11.5% had private insurance, and 3.3% were uninsured. Among women without chronic illness, 70.8% had pre-pregnancy Medicaid, 9.2% had private insurance, and 20% were uninsured. The relatively high prevalence of pre-pregnancy Medicaid coverage among all participants is likely due to Illinois' generous Medicaid policies, including its Illinois Healthy Women program, and/or the high prevalence of TANF assistance among this group.

CONCLUSIONS: Women with chronic illness were much more likely to be insured prior to pregnancy. However, the pervasiveness of chronic illness prior to pregnancy underscores the significance of pre-pregnancy health insurance for low-income women.

PUBLIC HEALTH IMPLICATIONS: Low-income women have a high rate of chronic illness which if untreated prior to pregnancy can have a significant impact on pregnancy outcome. In order for women to enter pregnancy healthy and obtain needed preconception/ interconception care, pre-pregnancy insurance is critical.

ATTITUDES TOWARD LONG-ACTING REVERSIBLE CONTRACEPTIVES AMONG FAMILY PLANNING PROVIDERS AT TITLE X CLINICS IN TEXAS

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BACKGROUND: Although rates of unplanned pregnancy in the United States remain high, long-acting reversible contraceptives (LARCs) are still an unpopular method of birth control. Past research has explored women's attitudes in using LARCs. This study seeks to examine factors that influence providers' attitudes toward recommending LARCs to female patients.

STUDY QUESTIONS: Do differences in agency type or urban-rural status exist when providers recommend a type of birth control and in suggesting intrauterine contraceptives, hormone implants, and hormone injections?

METHODS: The sample (n=108) consists of providers at family planning clinics in Texas that receive Title X funding. Cross tabs and chi-square tests of independence were used to identify differences in agency type and urban-rural status in providers' considerations of birth control recommendations, and attitudes towards the benefits and challenges of LARCs.

RESULTS: Most family planning providers report favorable attitudes to wide availability of LARCs. Considerations of birth control recommendation varied by agency type and urban-rural status. Across all types of family planning clinics, "effectiveness for client" was the most commonly cited consideration. Providers from Planned Parenthood most frequently cited convenience, safety, and effectiveness. Providers from agencies in micropolitan/noncore counties most frequently cited "affordability for clinic" ($p < .01$), "access for client" ($p < .05$), and "access for clinic" ($p < .001$) when considering birth control recommendations. Providers from agencies in large fringe/large central metro areas most often reported the benefits of IUCs are its potential for use as emergency contraception and long-lasting effectiveness. Additionally, providers in more urban areas most often reported the benefits of recommending hormone implants; whereas providers in small metro/medium metro areas favor hormone injections.

CONCLUSIONS: This study reveals providers' favorable attitudes towards LARCs. However, these attitudes do not necessarily translate into recommendations for LARCs. Differences in agency type and urban-rural status play a role in providers' considerations of LARCs. Providers' attitudes towards the benefits of LARCs demonstrate the challenges for training programs.

PUBLIC HEALTH IMPLICATIONS: Findings from this study can inform the design of trainings that encourage providers in all types of family planning clinics located in both urban and rural areas to recommend LARCs to clients.

INFERTILITY TREATMENT AND PSYCHOSOCIAL HEALTH STATUS DURING THE PERICONCEPTIONAL PERIOD

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BACKGROUND: Limited information on the psychosocial health and well being of women as they undergo infertility treatment hinders public health professionals in providing preventive resources where they might be needed. Moreover, the demand for infertility-related services has grown faster than the research community's ability to effectively monitor and evaluate such services.

STUDY QUESTIONS: What is the relationship between infertility treatment and psychosocial health?

METHODS: Women undergoing their first cycle of follicle-stimulating hormone/ intrauterine insemination (FSH/IUI) or in-vitro fertilization (IVF) at the University of Michigan comprised the exposed group, while those who are actively trying to become pregnant naturally in the next six months were included in the unexposed group. Participants were recruited over an 11 month period and asked to complete questionnaires on perceived stress, anxiety, and depressive symptoms four times over a nine-month period. If they became pregnant during this period, questionnaires were completed during the first and second trimester. Student t-tests were used to assess differences in mean values of perceived stress, anxiety, and depressive symptoms at each study visit.

RESULTS: Our final sample size consisted of 86 women. At baseline, 22% indicated that they had a history of an anxiety or depressive disorder and of these, 27% were currently on medication for this condition. Compared to women in the unexposed group, those undergoing infertility treatment had higher mean levels of perceived stress, state anxiety, and depressive symptoms at baseline and three-months follow-up. Moreover among those women undergoing infertility treatment that subsequently became pregnant, mean values for depressive symptoms increased during the first trimester, a trend that may reflect their distress regarding the potential risk for miscarriage.

CONCLUSIONS: Women undergoing infertility treatment are at increased risk for psychosocial distress during the periconceptional period.

PUBLIC HEALTH IMPLICATIONS: As only 34% of women achieve a pregnancy after an IVF cycle and 15% after an FSH/IUI cycle, it is imperative that women undergoing infertility treatment have access to mental health support services not only in the preconceptional but also the prenatal period. Comprehensive and coordinated care is critical.

COMPARISON OF PRAMS, BIRTH CERTIFICATE AND MEDICAL RECORDS DATA TO VALIDATE GESTATIONAL DIABETES (GDM) DIAGNOSIS: A CHRONIC DISEASE AND MCH COLLABORATION

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BACKGROUND: Analysis of 2004 PRAMS survey data from North Carolina, Oklahoma, Utah and West Virginia found that 835 women reported having elevated glucose levels starting with their last pregnancy, while only one-third (32.9%) of the corresponding birth certificates indicated a GDM/diabetes diagnosis.

STUDY QUESTIONS: How does the positive PRAMS survey response to elevated glucose compare with birth certificates and medical records to determine prevalence of gestational diabetes?

METHODS: We selected a sample of 277 surveys where the mother reported having "High blood sugar (diabetes) that started during this pregnancy" but no diagnosis of GDM was noted on the birth certificate and conducted hospital medical record reviews to determine the GDM status of these women.

RESULTS: Of the 277charts reviewed, 37.9% women had a diagnosis of GDM in the hospital medical record, 16.6% had elevated glucose levels but no documented follow-up or diagnosis, 23.2% had no documented tests/results despite risk factors for GDM, and 22.4% did not have an elevated glucose level. The ICD-9 code 648.8 indicating abnormal glucose tolerance was used in half the records of women with diagnosed GDM. Documented testing procedures, results, interpretation of results and provider follow-up of positive tests results were missing in some cases, which is a limitation to the study.

CONCLUSIONS: The PRAMS 2004 question did not specifically identify GDM. The validation results suggest birth certificate data and use of the ICD-9 code 648.8 to identify GMD in hospital discharge data may underestimate prevalence of GDM and should be used with caution. Additional validation of these data sources is needed. While results cannot be applied to the general population, the similarities in all four states indicate a general concern for lack of documentation of GDM diagnosis and care.

PUBLIC HEALTH IMPLICATIONS: Women who have had GDM have a 15%-50% risk of developing type 2 diabetes in the decades following the affected pregnancy. Maternal and Child Health and Chronic Disease programs need to work together to improve the quality of data collection, prenatal GDM testing, follow-up and education, and especially postpartum follow-up glucose testing, to ensure healthy birth outcomes and early prevention of type 2 diabetes.

PREGNANCY-RELATED MORTALITY IN WASHINGTON: TRENDS, RISKS, CAUSES AND PREVENTABILITY

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BACKGROUND: Pregnancy-related mortality in the United States has not decreased for several years, and some states have reported increases. A recent study from North Carolina reported 40% of these deaths may be preventable.

STUDY QUESTIONS: What does pregnancy-related mortality look like in Washington and what proportion of these deaths are preventable?

METHODS: Pregnancy-related deaths identified on death certificates from 1990-2005 were combined with all deaths during the same years that linked probabilistically to a birth, fetal death or obstetric hospitalization in the 364 days prior to death. All available vital statistics data and hospital discharge information was used to identify pregnancy-related deaths and underlying causes of death. Trend analysis was conducted and odds ratios were calculated using a random sample of live births as controls. Deaths were re-reviewed using consensus-derived criteria to determine whether they were preventable.

RESULTS: From 1990-2005 the pregnancy-related mortality ratio in Washington was 8.3 deaths per 100,000 livebirths with no statistically significant trend. Risk factors include older maternal age (OR = 6.4 (2.9, 14.1) for women forty or older), African American race (OR = 3.8 (2.0, 7.2); not being married (OR = 1.7, (1.1, 2.5), and a parity of three or more prior live births (OR = 2.6 (1.3, 5.1). Causes of death were relatively evenly distributed. Twenty-one percent of deaths were determined to be preventable. An additional forty-one percent were possibly preventable, but available information was insufficient to determine definitively.

CONCLUSIONS: Pregnancy-related deaths in Washington appear similar to those reported nationally in terms of causes and risk factors. Almost two-thirds of deaths are possibly preventable.

PUBLIC HEALTH IMPLICATIONS: Limited data in vital statistics and hospital administrative databases hampers the ability to identify causes, risk factors, and strategies to prevent pregnancy-related deaths. Despite limited information, data suggest pregnancy-related deaths in Washington remain largely preventable. We plan to look further at severe pregnancy-related morbidity to identify quality improvement strategies.

VALIDITY OF MEDICAID PAYMENT FOR DELIVERY AND WIC PRENATAL PARTICIPATION ON THE REVISED BIRTH CERTIFICATE, FLORIDA, 2004-2005

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BACKGROUND: During 2004, Florida implemented the revised birth certificate, which included new data elements: Medicaid payment for delivery and WIC prenatal participation; both of which have potential for rapid monitoring and evaluation at the state and local level.

STUDY QUESTIONS: To study the validity of the Medicaid and WIC data elements on the revised birth certificate.

METHODS: We used the 2004-2005 Florida birth certificate files linked to PRAMS, Medicaid eligibility and WIC prenatal eligibility files. The linkage rates are >95%. This study was limited to singleton live births and respondents with known responses. Using Medicaid and WIC linkages as the reference group, we estimated sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV).

RESULTS: The linked file included 5,296 un-weighted live births. In terms of Medicaid payment at delivery, the sensitivity and specificity on the birth certificate were 71% and 97%, and the PPV and NPV were 97% and 73%, respectively. For this data element on PRAMS, the sensitivity and specificity were 87% and 97%, and the PPV and NPV were 97% and 85%, respectively. In terms of WIC prenatal participation, the sensitivity and specificity on the birth certificate were 77% and 93%, and the PPV and NPV were 90% and 82%, respectively. For this data element on PRAMS, the sensitivity and specificity for WIC on the PRAMS were 92% and 90%, and the PPV and NPV were 89% and 93%, respectively. For both of these data elements, the sensitivity and NPV were significantly higher for PRAMS than the birth certificate ($p<0.05$).

CONCLUSIONS: The birth certificate underreports Medicaid payment for delivery and WIC prenatal participation, but the reporting of Medicaid and WIC usage on the birth certificate is accurate. The non-use of these services is reported less accurately on the birth certificate. In general, the reporting on PRAMS is more accurate than the reporting on birth certificates.

PUBLIC HEALTH IMPLICATIONS: When using these data elements from the birth certificate, researchers, policy-makers, and public health practitioners should be aware of the data limitations. Efforts should be made to improve reporting through birth certificate training.

AMENABLE MORTALITY AMONG MASSACHUSETTS INFANTS, CHILDREN, AND MOTHERS, 2000 - 2007

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BACKGROUND: The concept of amenable mortality, deaths that should not occur when there is an effective and timely delivery of health care, can be used to evaluate and compare health care systems and health care delivery over time. It can also be a method of examining health care equity. I have analyzed infant, child, and maternal deaths in Massachusetts from 2000 through 2007.

During this time, there were 5,692 deaths of infants and children (ages 0-19), and 2,048 deaths (48%) were amenable. There were 28 amenable maternal deaths (ICD-10 codes, O00-O99) in the same period, including one teen mother. The average age of the adult maternal deaths was 32.8 years with a range of 20 to 42 years.

STUDY QUESTIONS: What were the characteristics and ICD-10 causes of infant, child, and maternal deaths in Massachusetts from 2000 to 2007?

METHODS: ICD-10 causes of deaths for infants, children, and mothers were extracted from 2000 to 2007 death records, and amenable mortality was calculated and analyzed.

RESULTS: There were 3,564 white non-Hispanic, 965 black non-Hispanic, 239 Asian non-Hispanic, 13 Native American non-Hispanic, and 896 Hispanic deaths from 2000 to 2007. Compared with whites, blacks and Hispanics had a significantly higher percentage of amenable deaths. The percentage of amenable deaths of Asians did not differ from the white percentage.

Two-thirds of infant deaths (86% of amenable deaths) were due to amenable causes (2,062). The main amenable causes were P00-P99 codes, "Certain conditions occurring in the perinatal period", and the main causes of non-amenable deaths were congenital anomalies, SIDS, and other non-specific conditions of the newborn.

A time line of minutes, hours, and days with causes of deaths revealed that seventy-four percent of infants died from amenable causes in the first day. Female infants (44.0%) had a lower percentage of amenable mortality than males did.

The percentage of amenable mortality for infants and children did not vary significantly from 2000 to 2006; however, there was a decrease in 2007. This decline was a function of both an increase in non-amenable mortality and a decline in amenable mortality.

CONCLUSIONS: Since the majority of amenable deaths occur in infants in their first day, the linked birth and death files and hospital records should be used to examine the factors that contribute to these early avoidable deaths. Contributing causes of deaths should be included in the amenable mortality burden.

PUBLIC HEALTH IMPLICATIONS: Analysis of amenable mortality could be useful in evaluating the effectiveness of health care systems and eliminating health care inequalities.

AMBULATORY SURGERY FOR EARLY CHILDHOOD CARIES IN CALIFORNIA IN 2005

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BACKGROUND: Early childhood caries (ECC) is defined as caries affecting surfaces of the primary dentition of a child 71 month or younger. If left untreated, ECC can lead to serious health and social problems. Due to the patient's age and complexity of lesions, treatment for ECC is often provided in a hospital-based operating room under general anesthesia where costs rise precipitously.

STUDY QUESTIONS: What populations use ambulatory surgery for the treatment of ECC in California?

METHODS: Children under 6 years old were identified in the ambulatory surgery data from the Office of Statewide Health Planning and Development (n=83,973). The principal diagnosis for dental caries (ICD-9: 521.00-521.09) and California population data were used to calculate the ECC ambulatory surgery utilization rate (per 100,000). Rates were stratified by age, race/ethnicity, and county. Rates across counties were examined in relation to the distribution of dentists using data from California Dental Association.

RESULTS: Dental caries was the second most frequent principal diagnosis (12.5%), behind otitis media and eustachian tube disorders (18.8%) and ahead of chronic disease of tonsils and adenoids (11.9%). Medicaid was the most frequent expected payer for the treatment of ECC (67.9%). The utilization rate for ECC was highest among 3 year olds (560.2), American Indians (1005.6), and Hispanics (337.4). County rates varied widely, ranging from 25.5 to 4486.5 cases per 100,000.

CONCLUSIONS: ECC can affect children from all socioeconomic classes, but is more prevalent among low socio-economic populations, certain racial/ethnic groups, and certain regions of California, which tended to be rural or low-income areas with fewer dentists.

PUBLIC HEALTH IMPLICATIONS: American Academy of Pediatric Dentistry recommends children see a dentist by age one. Accessing care may be particularly problematic in low-income areas with fewer dentists, because there is a scarcity of dentists who accept Medicaid, resulting in a delay of needed care. ECC can be reduced through better access to dental services and beginning preventive treatments by age one.