

Surviving the First Year: An Overview of Infant Mortality Data, Trends, and Intervention Opportunities

Micky M. Moerbe, MPH, CPH Biostatistician Tarrant County Public Health Amy Raines-Milenkov, DrPH Assistant Professor/Healthy Start Director UNT Health Science Center Department of OB/GYN

Learner's Objectives

Describe infant mortality in Tarrant County including causes, trends, and racial/ethnic disparities

Discuss the importance of preconception and interconception care to improve birth outcomes

Identify public health, policy, clinical and community-based strategies to reduce adverse birth outcomes

What is a fetal death?

- A spontaneous intrauterine death any time during pregnancy with no signs of life at birth, regardless of gestational age or birthweight
- Different *reporting* standards for different states
 - 20+ weeks gestation and/or 350 grams birthweight
 - > 24+ weeks gestation
 - > All periods of gestation

What is an infant death?

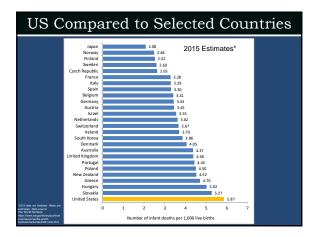
- The death of a baby before his or her first birthday
- Documented as an infant death if there are ANY signs of life at birth, regardless of gestational age, regardless of birthweight

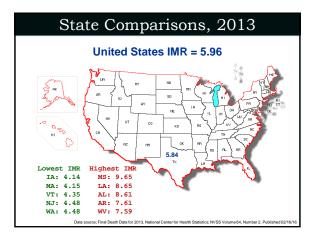
Sources of Fetal-Infant Mortality Stats

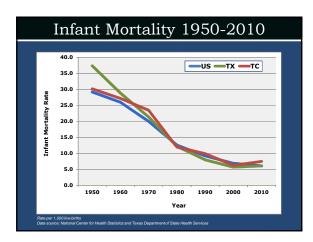
- Vital Statistics
- Perinatal Periods of Risk (PPOR)
- Child Fatality Review (CFR)
- Fetal-Infant Mortality Review (FIMR)

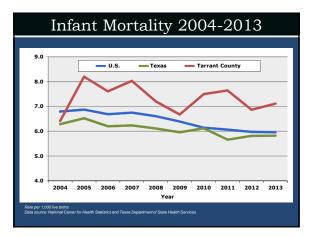


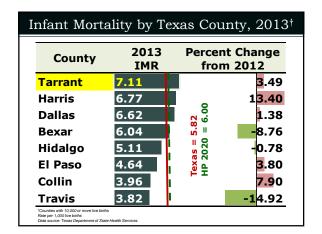
WHAT VITAL STATISTICS TELL US...

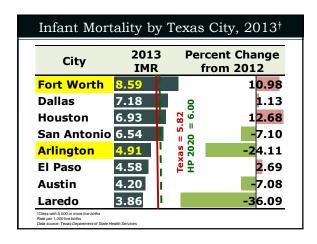


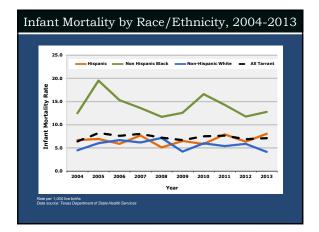












Hispanic	Non-Hispanic Black	Non-Hispanic White
Congenital malformations (24.0%)	Newborn affected by maternal complications of pregnancy (15.4%)	Congenital malformations (20.6%)
Disorders related to short gestation and low birth weight (21.6%)	Congenital malformations (14.1%)	Sudden Infant Death Syndrome (SIDS) (13.8%)
Sudden Infant Death Syndrome (SIDS) (10.8%)	Disorders related to short gestation and low birth weight (13.5%)	Disorders related to short gestation and low birth weight (13.1%)
Newborn affected by maternal complications of pregnancy (9.3%)	Sudden Infant Death Syndrome (SIDS) (9.0%)	Newborn affected by maternal complications of pregnancy (8.8%)
Newborn affected by complications of placenta, cord, and membranes (4.4)	Newborn affected by complications of placenta, cord, and membranes (4.5)	Bacterial sepsis of newborn (4.4%)

Linked Birth-Infant Death File

- Variables from the death certificate of each infant under 1 year of age are linked to variables from the birth certificate
- Critical to properly examining the link between infant death and birth characteristics, including maternal and paternal demographic data, birth weight, gestation, prenatal care, maternal risk factors, etc.

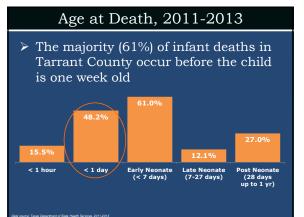
Prematurity and Low Birth Weight

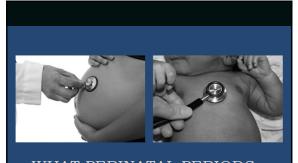
- The majority (59%) of infant deaths in TC are among babies born < 32 weeks gestation (very preterm) and more than half (58%) of all infant deaths are very low birth weight (VLBW <1,500 grams)</p>
- Very preterm babies have an IMR 110x higher than full term babies and VLBW infants have an IMR 128x higher than those of adequate birth weight.



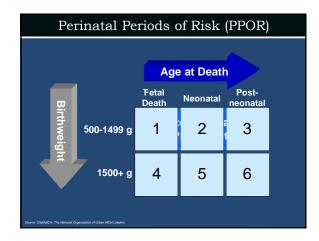
Demographic Differences

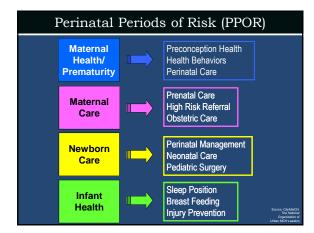
- Mothers on Medicaid have higher IMR than those with private insurance. (7.8 vs. 5.1)
- Non-Hispanic Black mothers with college degrees have IMR higher than Hispanics and Non-Hispanic Whites who did not finish high school (10.0 vs. 8.5 & 6.4).
- Mortality among babies of *unmarried* mothers is higher than among babies whose mothers are *married* (8.0 vs. 5.8).
- Mothers who are overweight/obese before pregnancy lose their infants at a higher rate than healthy weight mothers (7.8 vs. 5.6)





WHAT PERINATAL PERIODS OF RISK TELLS US...





PPOR Tells Us

- Potentially 40% of fetal and infant deaths in Tarrant County are preventable
- > Overall, 44% of excess deaths in Tarrant County occurred in the *Maternal Health/Prematurity* risk period
- Non-Hispanic Blacks had the highest excess fetal-infant death rate
- Intervention area with the greatest potential impact overall is Maternal Health/Prematurity among Non-Hispanic Black women

PPOR Tells Us

- Modifiable Risk Factors
 - Overall, Tarrant County mothers of VLBW infants were more likely to:
 - Smoke
 - Not attend an adequate number of PNC visitsBe obese
 - Hispanic & NH-Black mothers were more likely to:
 - Not attend an adequate number of PNC visits
 - Be teen mothers
 - Be overweight and obese
 - > NH-White mothers were more likely to smoke



WHAT CHILD FATALITY REVIEW TELLS US...

Child Fatality Review Tells Us

- The Tarrant County CFR Team only reviews child deaths reported to the Medical Examiner's office (unnatural or suspicious cause of death)
- The majority of reviewed infant cases (those aged <12 months) included documentation of an unsafe sleep environment
- Unsafe sleep accounts for approximately 5% of all infant deaths in TC and is an immediately preventable cause of death



WHAT FETAL INFANT MORTALITY REVIEW TELLS US...

Fetal Infant Mortality Review (FIMR)

➢ FIMR Data

- FIMR is a community-based and action-oriented process to improve service systems and resources for women, infants, and families
- State legislation required
- Systematic sampling of all fetal and infant death certificates - differs from Tarrant County Child Fatality Review which only reviews infant deaths referred to the Medical Examiners Office (primarily from suspicious or unnatural causes)
- > Chart abstractions done on all selected cases

Fetal and Infant Data

> FIMR Data

- Chart abstraction of
 - Pregnancy Course / Prenatal Care Records
 - > Maternal Labor, Delivery, & Postpartum Records
 - Newborn Assessment Record
 - > Newborn Intensive Care Unit Record
 - > Ambulatory Infant Care Record
 - Pediatric Emergency Department and/or Hospitalization Record
- Fetal/Infant Death Certificate and Autopsy Record
 Family interview conducted at home
- FIMR cases examined by a diverse assembly of professionals who volunteer to serve on the Case Review Team (CRT)

FIMR Tells Us

- 55% of mothers had documentation of a significant medical problem *predating* this pregnancy – Of those mothers:
 - ➢ Sexually Transmitted Diseases (27%)
 - Hypertension (15%)
 - Asthma (14%)
 - Iron Deficiency Anemia (12%)
 - Depression (9%)

FIMR Tells Us

- Did you get prenatal care as early as you wanted?
 - ➢ 72% Yes, 28% No
- \succ If no, why?
 - Did not have enough money or insurance to pay for visits (56%)
 - Delay in getting CHIP / Medicaid (33%)
 - I could not get an appointment earlier in my pregnancy (28%)

. Date source: Fetal Infant Montality Review, Tarnant County: Study findings and recommendations from Tarnant County FMR Cleas Review Team, 2006-2012. Tarnant County Public Health, June 2



FIMR Recommendations

- Intervention focus areas identified by the FIMR Case Review Team
 - The prevention of, proper screening for, and proper treatment of STDs
 - Promote and increase preconception / interconception care to women within the context of the life course perspective with a focus on obesity and chronic disease abatement prior to planning a pregnancy

FIMR Recommendations

Late to Care

- Intervention focus areas identified by the FIMR Case Review Team
 - Kicks Counts campaign promoting fetal movement monitoring by mothers throughout their pregnancy as well as instructing them on when and how to take action if needed
 - Promote access to and importance of health care through a *medical home*

FIMR Recommendations

- Intervention focus areas identified by the FIMR Case Review Team
 - Hold a workshop for hospital chaplains which provides guidance, tools, and training that focus on their role in counseling families who have lost an infant
 - Promote safe sleep in the community including infant sleeping position and risks of co-sleeping

FIMR Recommendations

- Intervention focus areas identified by the FIMR Case Review Team
 - Promote *reproductive life plans*, how they can prevent unplanned pregnancies, and help women and men improve their health and socioeconomic circumstances so they are better prepared when and if they decide to have children
 - Promote the PRIDE initiative in the community which provides STD/HIV prevention education to teenagers and young adults aged 13-24 years

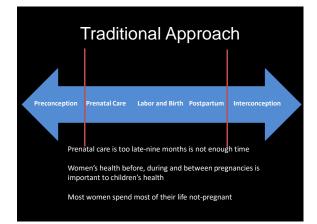
FIMR Recommendations

- Intervention focus areas identified by the FIMR Case Review Team
 - Promote the Texas Healthy Baby public awareness campaign Someday Starts Now
 - Educate the community about the statewide Medicaid Managed Care Advisory Committee which serves as the central source for stakeholder input on the implementation and operation of Medicaid managed care

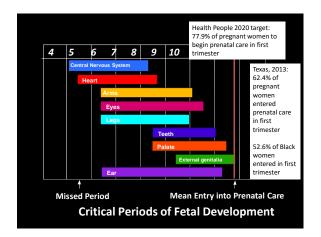
Source: Fetal Infant Montality Review, Tarrant County: Study findings and recommendations from Tarrant County FMR Case Review Team, 2008-2012. Tarrant County Public Health, June 20



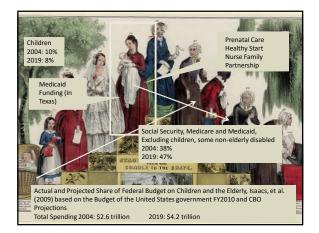


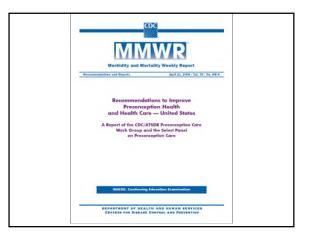












Four Goals

To assure that all U.S. women of childbearing age receive preconcupation can be used a screening, health promotion, and interventions – that will enable them to enter pregnancy in optimal health

To reduce risks indicated by a prior adverse pregnancy outcome through interventions in the interconception interventegnancy) partod that can prevent or minimize health problems for a mother and her future children.

To **improve** the knowledge, attitudes, and behaviors of men and women related to preconception health

To reduce the disparities in adverse pregnancies outcomes.

CDC Recommendations to Improve Preconception Health

- 1. Individual responsibility across the life span.
- 2. Consumer awareness.
- 3. Preventive Visits
- 4. Intervention for identified risks.
- 5. Interconception care.
- 6. Pre-pregnancy check ups.
 7. Health coverage for low-income women.
- 8. Public health programs and strategies.
- 9. Research.
- 10. Monitoring improvements.



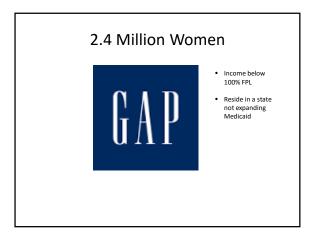
Affordable Care Act

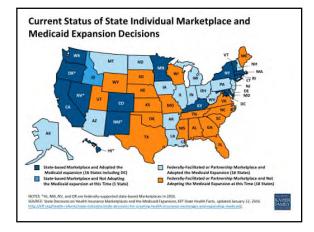
10 Essential Health Benefits of New Plans

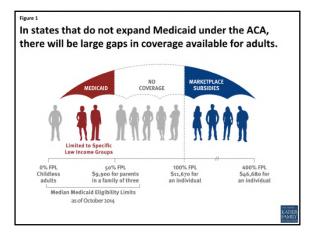
- Ambulatory patient services Emergency services
- Hospitalization
- Maternity and Newborn Care
- Mental Health and substance abuse disorder treatments, including behavioral health treatments
 - Prescription drugs
 - Rehabilitative and habilitative services and devices
 - Laboratory services
 - Pediatric services including dental care
 - Preventive and wellness services and chronic disease management

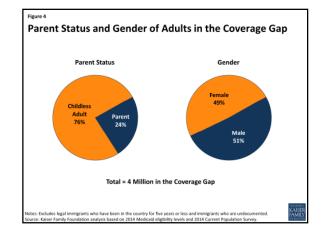
ACA: Pregnancy and Maternity Care

- Pregnancy no longer pre-existing condition
- Tobacco cessation interventions
- Alcohol misuse screening
- Gestational diabetes
- Screening for STIs
- Folic Acid Supplements
- Iron deficiency anemia
- Breastfeeding supports
- Home visitation grants
- Vaccinations

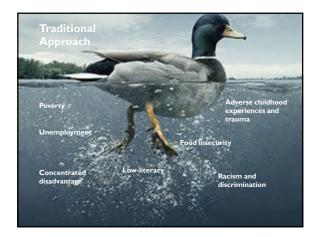


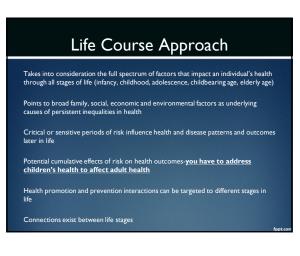


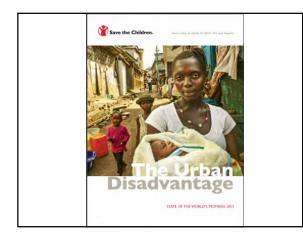


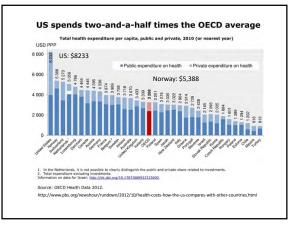


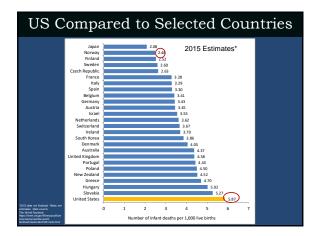
















What are you doing now to achieve your goal? (avoid pregnancy until you are ready to become pregnant or getting ready for a healthy pregnancy)?

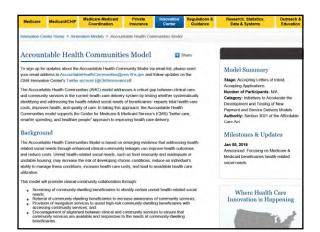
What can I do today to help you achieve your goal? (what resources, information, referrals, etc.)





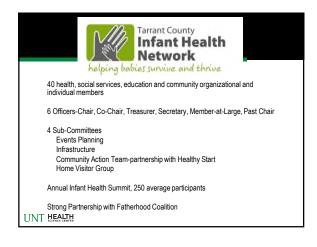




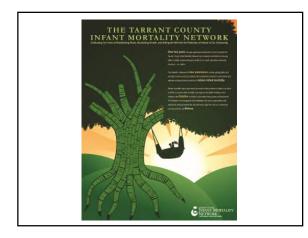


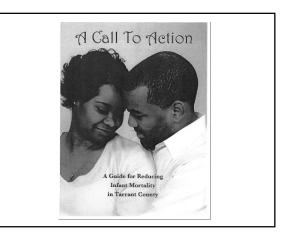












Moving Forward

- 1) Provide continuity of care before pregnancy and throughout life
- 2) Focus "well-person" visits on assessing and developing health building blocks.
- 3) Recognize and organize prenatal, intra-partum, well-child, and adult health visits around critical or sensitive periods of development.
- 4) Deploy public health nurses, social workers and other staff to serve as resources in non-health settings.

Moving Forward 5) Develop community-wide resources to help link women, children and families to health enhancing services, supports and activities. bevelop the tools and support for providers to be able to link women, children, and families to health-enhancing services, supports and activities. 7) Invest in policies and programs that make it easier for the public, health care providers, and business and civic leaders to change the way they do business as usual to better promote health. A NEW AGENDA FOR MCH. POLICY AND PROGRAMS: INTEGRATING A LIFE COURSE PERSPECTIVE Amy Fine, MPH. Milton Kotelchuck, PhD, MPH. Nancy Adess, MA Cheri Pies, MSW, DrPH.

Sheppard-Towner Act of 1921 John Morris Sheppard (May 28, 1875 -WOMFN ASK April 9, 1941) was a Democratic U.S. Congressman and Senator from east Texas. "First legislative proposal made by the **CONGRESS TO** women of America since universal suffrage was granted." First major piece of federal legislation RUSH BILL TO passed in the United States to focus on

AID MOTHERS

BY DAVID LAWHENCE. opyright, 1920. by Star-Telegram. WASHINGTON, Drc. 12.—When

passed in the United States to focus on infant and maternal health Provided Federal matching funds for services aimed to reduce maternal and infant mortality. The funding included: midwife training: visiting nurses for pregnant women and new mothers; distribution of nutrition and hygiene information; health clinics, doctors and nurses, for pregnant women, mothers and children. children

Repealed in 1929

IGNORANCE KILLS BABES BY HUNDRED

Big Death Rate Due to Lack of Knowledge

By evenetic Pres. CHICAGO. Aug. 2.—During the months of July 669 bables under 1 year old died in Chicago. Most act these deaths, the health department of the particular the second second of the particular the second second of the particular the second second the second second second second second second second second second the second second second second second second second second second the second secon

All progress is precarious, and the solution of one problem brings us face to face with another problem

Martin Luther King, Jr.

Don't Feed Baby on Sausage and Beer Until 1 Year Old

Utility 1 a tear over Hydrochiad press Dirklarf, Jose 15. The carbon wants have been done ware of reflexing previous with ano-rare of reflexing previous with ano-termine and been during the result of the screening to a statement made by the contained the statement made by the statement by by the

