



Perinatology Research Branch at Wayne State University NICHD/NIH

Douglas Skrzyniarz
Senior Director of External Affairs
Wayne State University School of Medicine

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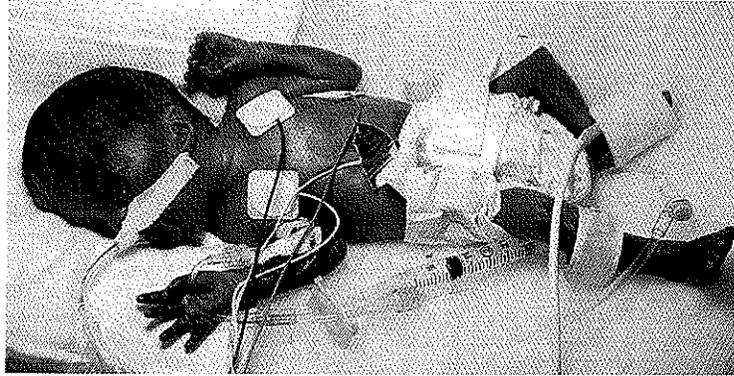


Infant Mortality – A Public Health Crisis

- ▶ Michigan – 7.7 infant deaths per 1,000 live births
- ▶ U.S. is 33rd in the world – infant mortality rate
- ▶ 26% of births in African American women are premature compared to 12% for Caucasians
- ▶ **Premature births costs U.S. nearly \$26 billion per year**
- ▶ Most babies in NICU are premature
- ▶ 70% of infant mortality is attributable to premature birth



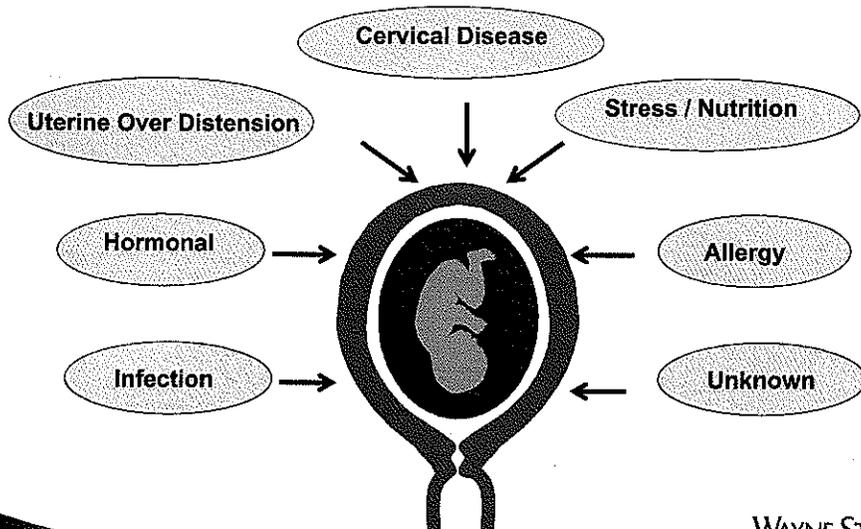
The Prognosis of Preterm Neonates is a Function of Gestational Age at Birth



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Factors Contributing to Preterm Birth



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Creation of Perinatal Research Branch (PRB)

- ▶ Created by Congress in 1993 to address high rate of infant mortality with special focus on Racial and Ethnic disparity
- ▶ Branch of the National Institute of Child Health and Human Development / National Institutes of Health
- ▶ Study of pregnancy requires large patient base
- ▶ Needed to find long term home accessible by target population

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Creation of Perinatal Research Branch (PRB)

- ▶ Open competition started in 2000
- ▶ Awarded ten-year, \$167 million contract in 2002
- ▶ Why WSU? Why Detroit?
 - WSU's reputation – OB/GYN Dept.
 - Local & regional access to patients
 - \$13 million commitment from WSU & State of MI

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Clinical Impact of PRB in Southeastern Michigan

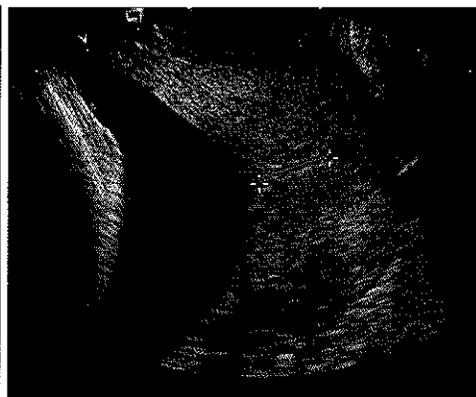
- ▶ Early enrollment of at risk women into PRB protocols
- ▶ Patient Care (WSU and DMC)
 - 20,000 Patients Since 2002
 - Comprehensive biophysical assessment:
 - Ultrasound, Doppler, Echocardiography
 - Comprehensive assessment of outcome
- ▶ Education and Social Support

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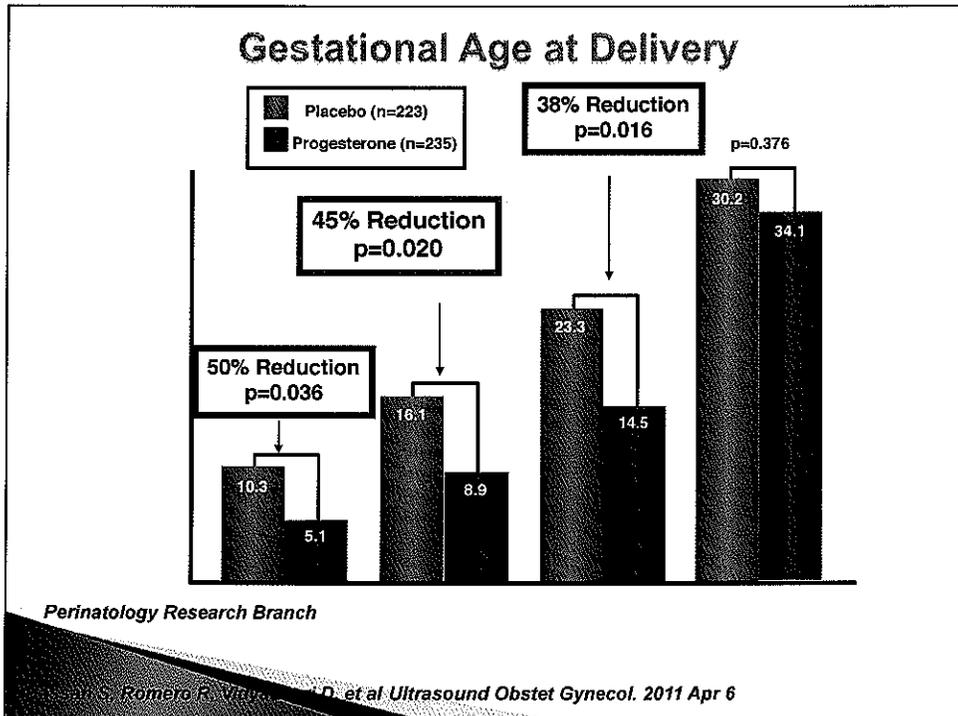
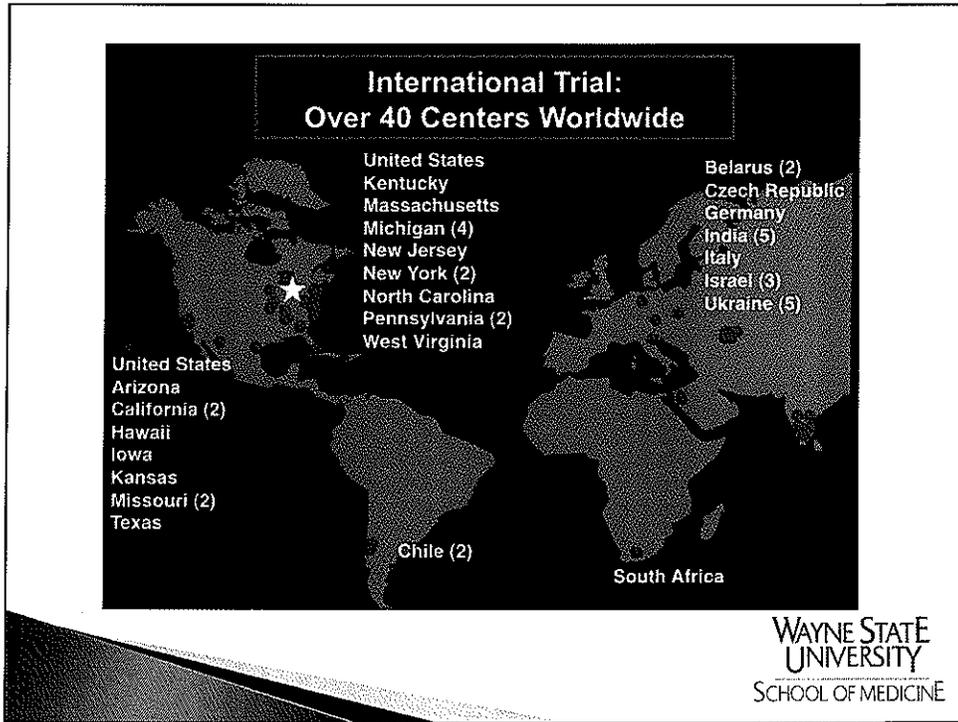
A short cervix can be diagnosed by ultrasound



3.5 cm



1.4 cm



Progesterone reduced the rate of Respiratory Distress Syndrome by 61%

placebo 7.6% vs. progesterone 3% vs. $p=0.03$

Hassan S, Romero R, Vidyadhari D, et al Ultrasound Obstet Gynecol. 2011 Apr 6

Clinical implications

- ▶ Cost-savings of \$12 million per 100,000 pregnancies
- ▶ Universal cervical length screening
- ▶ Treatment with vaginal progesterone gel

Werner et al., Ultrasound Obstet Gynecol. 2010 Dec

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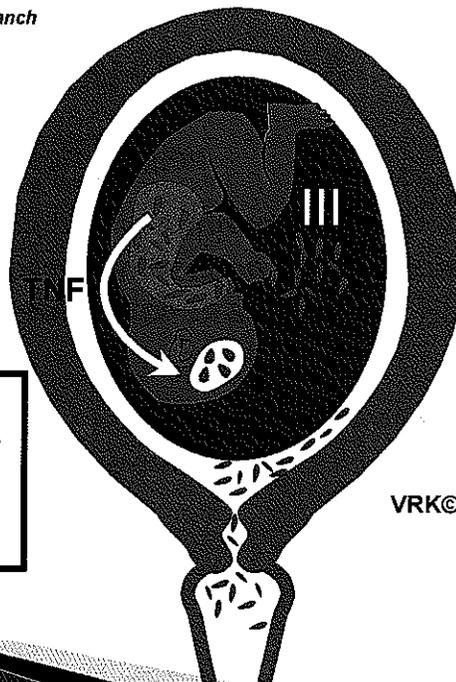
Cerebral Palsy

- ▶ 10,000 children diagnosed per year
- ▶ Severe impairment to motor skills
- ▶ Costs \$11.5 million per year
- ▶ PRB Findings
 - Fetal Inflammatory Response Syndrome
 - Experimental therapy through nano-medicine in development

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Perinatology Research Branch

**Fetal
Inflammatory
Response
Syndrome**



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QUESTIONS?

