

# Gestational Diabetes: Implications for the Future

Changing the future through partnerships

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# Disclosure

- I have nothing to disclose.
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  - The Center for Disease Control (Michelle Owens-Gary)
  - The Association of Chronic Disease Directors (Joan Ware)
  - West Virginia Diabetes Prevention and Control Program (Peggy Adams, Gina Wood, Jessica Wright)
  - West Virginia Gestational Diabetes Advisory Committee
  - My colleague – Dara Seybold

# Gestational Diabetes

Gestational diabetes means that the body has a problem with insulin during pregnancy. When women are pregnant, the body needs more insulin to keep blood sugar at the right level. Women's bodies make more insulin during pregnancy. When the extra insulin is not enough to keep blood sugar normal, women get high blood sugar. This is called gestational diabetes. Blood sugar usually returns to normal after delivery.

# Percentage of Pregnant Women Affected

- Approximately 7% (national)
  - » West Virginia:

## **Gestational Diabetes: Deliveries in West Virginia for Years 2000 – 2005**

<b>Years</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<b>Age &lt;17</b>	<b>5</b>	<b>7</b>	<b>12</b>	<b>5</b>	<b>8</b>	<b>10</b>
<b>Age 18&gt;</b>	<b>590(3%)</b>	<b>676(4%)</b>	<b>747(4%)</b>	<b>801(4%)</b>	<b>799(5%)</b>	<b>854(5%)</b>

Data from Hospital Discharge Report – (%) of all deliveries in WV

# Gestational: Potential Affect on Baby

Neonatal hypoglycemia

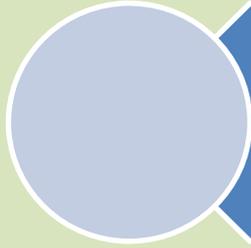
Respiratory distress syndrome

Macrosomia

- Birth trauma
- Shoulder dystocia

Macrosomia (mother)

- Cesarean Delivery

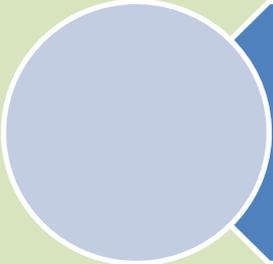


## Gestational Affect on Mother: A Precursor of Type 2

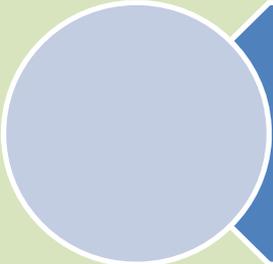
- Women who develop gestational diabetes have a seven-fold increased risk of developing Type 2 diabetes.

Bellamy, Casas, Hingarani, Williams. 2009. Type 2 diabetes mellitus after gestational diabetes: a systematic review and meta-analysis.

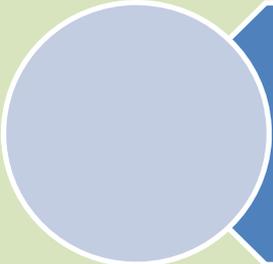
Cumulative incidence of type 2 diabetes in women with a history of gestational diabetes.



5% within six months  
after delivery



60% within 10 years  
after delivery



Source: AHRQ, 2009

# Additional Risk Factors: Type 2

Higher pre-pregnancy BMI

Greater weight gain during pregnancy.

Higher post-partum waist circumference.

Diagnosis of GDM earlier in pregnancy.

Higher fasting blood glucose levels during pregnancy.

Higher reading on the 100-gram oral glucose tolerance test (OGTT).

Source: AHRQ, August 2009

# Partnerships: The Journey

- Phase 1 – Reporting what WV learned from a study – Pregnancy and Diabetes in West Virginia.
- Phase 2 – Better Data, Better Care.

A collaborative sponsored by Association of Chronic Disease Directors (ACDD) and CDC.  
(Michigan, Oklahoma, North Carolina, Utah, WV)

# The Journey -- Continued

- **Better Data, Better Care (approach)**

Women who reported having “high blood sugar (diabetes) that started during this pregnancy” on the Pregnancy Risk Assessment Monitoring System (PRAMS). These records were matched with the birth certificate data.

**Women with diabetes that started during pregnancy (PRAMS)**

	WV	Collaborative
Birth Certificate Data		
GDM Yes	20 (24.7%)	86 (23.7%)
GDM No	61 (75.3%)	277 (76.3%)
<b>Total</b>	<b>81</b>	<b>363</b>

Women with diabetes that started during pregnancy (PRAMS) and No GDM  
(Birth Certificate)

	WV	Collaborative
<b>Chart Review</b>		
GDM diagnosed	23 (37.7%)	105 (37.9%)
Elevated glucose but no documented follow-up/ diagnosis <sup>+</sup>	1 (1.6%)	46 (16.6%)
No documented testing or results <sup>*+</sup>	15 (24.6%)	64 (23.2%)
No GDM diagnosed	22 (36.1%)	62 (22.4%)
<b>Total</b>	<b>61</b>	<b>277</b>

**Of the women who had a diagnosis of GDM on the medical record and an elevated blood sugar on PRAMS, but not on the Birth Certificate:**

	WV	Collaborative
<b>Chart Review Documentation:</b>	n=24	n=105
Previous history of GDM	5 (20.8%)	22 (20.9%)
Referral to an endocrinologist, etc.	13 (54.1%)	(<5%)
Provider Instructions on Diet	14 (58.3%)	59 (56.2%)
Provider Instructions on self glucose monitoring	8 (33.3%)	28 (26.7%)
Provider glucose monitoring	18 (75%)	35 (33.3%)
Provider instructions on physical activity	0	12 (11.4%)
Discharge plan	21 (87.5%)	*
Discharge instruction for GDM follow-up	3 (12.5%)	*
Breastfeeding education	10 (41.7%)	*
Discharge instruction for achieving healthy weight	1 (1.6%)	*
Treatment with insulin	6 (25%)	18 (17.1%)
Treatment with glyburide	3 (12.5%)	10 (9.5%)
Treatment with Metformin	0	2 (1.9%)

# The Journey -- Continued

- **Phase 2** – Each of the states in the Better Data, Better Care group were asked to carry out an **intervention**.
  - In West Virginia we choose to conduct a process improvement in one obstetrical practice.
  - The process improvement focused on:
    - Establish a systematic process for the identification and documentation of GDM
    - Educate women with GDM about risk reduction of Type 2 Diabetes
    - Improve postpartum testing
  - Results -- see poster

# The Journey -- Continued

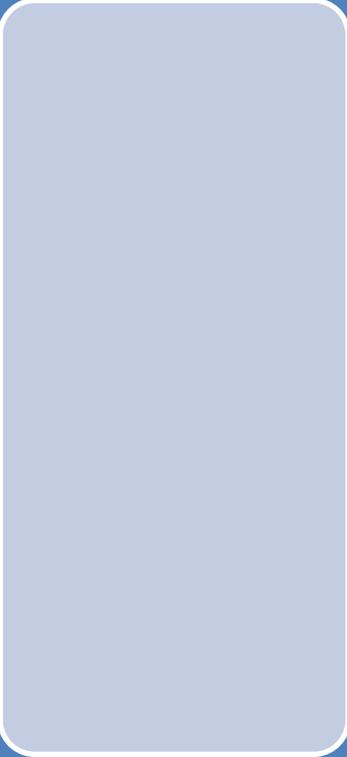
- Phase 3 – Extending the collaboration – Chronic Disease and Maternal and Child Health working in partnership to prevent Type 2 diabetes and have healthy mothers and babies.
- Ohio, Missouri and West Virginia developed strategic plans under the leadership of CDC, Chronic Disease Directors, and the Association of Maternal and Child Health.

# The Journey -- Continued

- *Strategic Plan for West Virginia*
  - Promote provider awareness of appropriate GDM testing, diagnosis, treatment and follow-up care.
  - Promote patient awareness of GDM as a major risk factor for Type 2 diabetes and the necessity of postpartum glucose testing and referral for follow-up care.
- *State-wide Advisory Committee*

# The Journey – Continued

## State-wide Advisory Recommendations

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- State guidelines for testing – distributed to physician offices
  - Dissemination of data to physicians
  - Immunization project (see flyer) combining information on childhood immunization and post-partum care
  - Major presentation by Dr. Dietz at Diabetes Conference, October 2011
  - WIC project to learn about challenges women face in obtaining post-partum care (see assessment)

# The Journey -- Continued



## Phase 3 – Spread

- Developing a national collaborative with other states to improve care for women and children.
- Use partnerships to share successes and learn from each other how to overcome challenges.
- How to initiate, develop, manage and sustain change

# Resources

- Agency for Healthcare Research and Quality
  - [www.ahrq.gov](http://www.ahrq.gov)
- CDC – Center for Disease Control
- Association of Chronic Disease Directors
- Association of Maternal and Child Health (AMCHP)
- State Diabetes Prevention and Control Programs
- State Maternal and Child Health Programs