

# A Snapshot of Pregnancy and Diabetes in West Virginia

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Total Deliveries						
Years	2000	2001	2002	2003	2004	2005
Age <17	756	705	699	710	677	662
Age 18>	17,037	16,194	17,082	17,461	17,086	17,131

Only West Virginia residents who gave birth in a WV hospital  
Data Source: West Virginia Healthcare Authority - Hospital Discharge Data (UB 92)

Codes Identified	
The three codes were the only ones identified in the data set. Most cases were coded as 648.S1. Only a few were coded as 648.S2 or 648.S3.	
648.S1	- abnormal glucose tolerance - delivered with or without mention of antepartum condition
648.S2	- abnormal glucose tolerance - delivered with mention of postpartum complication
648.S3	- abnormal glucose tolerance - antepartum condition or complication

WIC Database				
Women whose family income is at or under 185% of the federal poverty level may enroll in WIC during pregnancy or may enroll in WIC as recently postpartum.				
Along with many other demographic identifiers and health questions, women who enroll in WIC are asked "During pregnancy, were you told by a doctor that you had gestational diabetes?"				
Gestational Diabetes Postpartum Response				
Mother's Age	Prevalence	Yes	No	Unknown
<20 years	3.8%	51	1300	23
20-24	4.7%	173	3531	44
25-29	7.2%	196	2521	21
30-34	13.8%	166	1033	9
35-39	18.8%	95	410	1
>39	27.1%	36	97	0
Overall	7.5%	717	8892	98

Data source: West Virginia WIC Program (2006)

## Background

- Pregnant women with diabetes are at an increased risk of experiencing complications. Likewise, 2-5% of all pregnant women are at risk of developing gestational diabetes.
- Gestational diabetes creates an additional risk as it increases the women's chances of developing type 2 diabetes later in life.
- Infants born to women with diabetes are more likely to be large birth weight or have congenital malformations. These infants may end up spending time in a neonatal intensive care unit for several days or weeks.
- Despite these facts, how can a state or region know its numbers? What can we learn from current data to develop interventions?

## Objective

- The purpose of this study is to identify current data sources in order to better understand the population of pregnant women with diabetes and with gestational diabetes and the outcomes of the pregnancy.

## Methods

- Several independent data sources were identified as potential resources and experts in maternal fetal medicine were consulted to provide direction regarding the codes to use when extracting data.
- Data sources included:
  - WIC
  - Hospital Discharge Data
  - National Inpatient Sample (NIS)
  - Birth Score Data
  - PRAMS

## Results

- The number of women developing gestational diabetes is increasing and the number of women with type 2 diabetes giving birth is increasing in West Virginia
- The data indicate that most women who give birth and have gestational diabetes are recorded as delivering with or without mention of antepartum condition.

## Conclusions

- Current data resources offer limited information.
- There is a need for improved documentation for:
  - Understanding the implications of pregnant women with gestational diabetes
  - Earlier identification of pregnant women with gestational diabetes
  - Long-term follow-up to determine if and when a woman with gestational diabetes develops type 2 diabetes.

Women with Type 1 and/or Type 2 Diabetes							
Type 1	Years	2000	2001	2002	2003	2004	2005
	Age <17	0	1	0	0	1	3
	Age 18>	59	63	34	60	48	40
Type 2	Years	2000	2001	2002	2003	2004	2005
	Age <17	0	1	0	0	0	0
	Age 18>	38	48	57	65	89	96

Data Source: West Virginia Healthcare Authority - Hospital Discharge Data (UB 92)  
Codes used to identify Type 1 and Type 2 diabetes:  
250.0 - Type 2 or unspecified type, not stated as uncontrolled  
250.1 - Type 1, not stated as uncontrolled  
250.2 - Type 2, or unspecified type uncontrolled  
250.3 - Type 1, uncontrolled

Gestational Diabetes: Deliveries in West Virginia for Years 2000 - 2005						
Years	2000	2001	2002	2003	2004	2005
Age <17	5	7	12	5	8	10
Age 18>	590(3%)	676(4%)	747(4%)	801(4%)	799(5%)	854(5%)

Data Source: West Virginia Healthcare Authority - Hospital Discharge Data (UB 92)  
(%) - percentages reflect the percent of deliveries in that year with gestational diabetes (numerator = number of deliveries with gestational diabetes; denominator = the total number of deliveries in that year).

Diabetes and Pregnancy: Diabetes Type by Delivery Method							
Diabetes Type 1							
Years	Delivery Method	2000	2001	2002	2003	2004	2005
Age <17	Vaginal w CC	0	1	0	0	0	2
	Vaginal w/o CC	0	0	0	0	0	0
	C-S w CC	0	0	0	0	1	1
	C-S w/o CC	0	0	0	0	0	0
	Vaginal w OR P	0	0	0	0	0	0
	Vaginal w/o OR P	0	0	0	0	0	0
Age 18>	Vaginal w CC	20	28	12	18	12	12
	Vaginal w/o CC	0	0	0	1	0	0
	C-S w CC	35	34	20	40	32	26
	C-S w/o CC	0	0	0	0	0	0
	Vaginal w OR P	4	1	2	1	4	1
	Vaginal w/o OR P	0	0	0	0	0	1

Data Source: West Virginia Healthcare Authority - Hospital Discharge Data (UB 92)

Diabetes and Pregnancy: Diabetes Type by Delivery Method							
Diabetes Type 2							
Years	Delivery Method	2000	2001	2002	2003	2004	2005
Age <17	Vaginal w CC	0	1	0	0	0	0
	Vaginal w/o CC	0	0	0	0	0	0
	C-S w CC	0	0	0	0	0	0
	C-S w/o CC	0	0	0	0	0	0
	Vaginal w OR P	0	0	0	0	0	0
	Vaginal w/o OR P	0	0	0	0	0	0
Age 18>	Vaginal w CC	16	19	19	29	29	31
	Vaginal w/o CC	1	0	2	2	2	2
	C-S w CC	20	22	33	27	44	45
	C-S w/o CC	1	4	3	6	10	12
	Vaginal w OR P	0	3	0	1	4	6
	Vaginal w/o OR P	0	0	0	0	0	0

Data Source: West Virginia Healthcare Authority - Hospital Discharge Data (UB 92)

Payer Source by Type of Diabetes							
Payer	Diabetes	2000	2001	2002	2003	2004	2005
Medicaid	Gestational	266	254	325	355	320	339
	Type 1	39	36	21	28	25	23
Medicare	Gestational	6	9	8	8	11	8
	Type 1	1	1	0	0	1	0
Private	Gestational	264	338	384	400	420	457
	Type 1	16	23	13	30	17	18
Self-Pay	Gestational	6	14	7	8	12	15
	Type 1	0	0	0	0	0	0
Other	Gestational	26	31	19	18	26	31
	Type 1	0	2	0	1	3	1
Unknown	Gestational	27	37	16	17	18	14
	Type 1	3	1	0	1	3	1

Data Source: West Virginia Healthcare Authority - Hospital Discharge Data (UB 92)

Diabetes and Pregnancy: Diabetes Type by Delivery Method							
Gestational Diabetes							
Years	Delivery Method	2000	2001	2002	2003	2004	2005
Age <17	Vaginal w CC	1	1	1	0	0	1
	Vaginal w/o CC	4	4	7	4	5	6
	C-S w CC	0	0	1	0	0	1
	C-S w/o CC	0	1	3	1	3	2
	Vaginal w OR P	0	1	0	0	0	0
	Vaginal w/o OR P	0	0	0	0	0	0
Age 18>	Vaginal w CC	77	78	62	72	87	86
	Vaginal w/o CC	230	269	290	299	282	297
	C-S w CC	68	88	97	101	101	101
	C-S w/o CC	174	204	254	290	289	334
	Vaginal w OR P	41	37	43	39	40	36
	Vaginal w/o OR P	0	0	1	0	0	0

Data Source: West Virginia Healthcare Authority - Hospital Discharge Data (UB 92)

West Virginia PRAMS (Pregnancy Risk Assessment Monitoring System)		
PRAMS questions used for table below: Did you have any of these problems during your pregnancy? f. High blood sugar (diabetes)		
The following are things a doctor, nurse or other health care worker might have talked to you about your pregnancy or after delivery. f. Diabetes (how it may affect you and your baby)		
Payer Source by Type of Diabetes		
Year	Diabetes during pregnancy	Health care worker discussed diabetes
2000	8.5%	44.8%
2001	9.8%	50.5%
2002	8.8%	45.9%
2003	9.2%	45.4%
2004*	9.2%	41.4%

\*Data only available for births occurring between July 1, 2004 and December 31, 2004

## What Have We Learned?

- The number of pregnant women with gestational diabetes and having a delivery continues to increase.
- The number of pregnant women with Type 2 diabetes and having a delivery continues to increase.
- Women with Type 1 diabetes will have either a Vaginal or C-Section delivery with complications.
- The majority of women with Type 2 diabetes will have either a Vaginal or C-Section delivery with complications
- There is a discrepancy between data sources on the percentage of women with diabetes and/or gestational diabetes.
- Hospital discharge data indicate that the majority of women with gestational diabetes are only accounted for if the condition was present prior to or at the time of delivery.
- Opportunities for improving the documentation of care of pregnant women with gestational diabetes exist.

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