

It’s Best to Test in Hospital: Improved Testing Rates with Immediate Postpartum Diabetes Testing in Patients with Gestational Diabetes in a Community-Academic Medical Center

Mikhalya Brown, BA¹, Nicole Barreto, MD², Dorothy Wakefield, MS, PStat³, Rebecca Crowell, PhD³, Veronica Maria Pimentel, MD, MS^{1,4}

¹Frank H. Netter School of Medicine, Quinnipiac University, North Haven, CT; ²Obstetrics and Gynecology Department, Yale New Haven Health Bridgeport Hospital, Bridgeport, CT; ³Research Department, Trinity Health of New England, Hartford, CT; ⁴Obstetrics and Gynecology Department, Trinity Health of New England, Hartford, CT

Background

The American College of Obstetricians and Gynecologists (ACOG) has historically recommended diabetes screening for individuals diagnosed with gestational diabetes mellitus (GDM) between 4 and 12 weeks postpartum to detect persistent glucose intolerance and type 2 diabetes. However, adherence to this guideline remains low, with completion rates ranging from just 6% to 24%, even among those who attend postpartum visits.

To address low adherence, our institution implemented universal Immediate postpartum diabetes testing on December 1, 2023, six months before ACOG’s formal endorsement of this approach. Immediate postpartum diabetes testing—conducted on postpartum day 1 or 2 using a 2-hour 75-gram oral glucose tolerance test—offers comparable diagnostic accuracy and significantly improves screening rates.

Objectives

The **primary objective** of this study was to compare postpartum diabetes testing rates before and after the implementation of immediate postpartum diabetes (IPD) testing.

Secondary objectives included evaluating pregnancy outcomes associated with the practice change and identifying factors linked to completion of IPD testing.

Methods

We conducted a retrospective cohort study of patients with gestational diabetes mellitus (GDM) who received care at our hospital-based clinic and delivered at our hybrid community-academic medical center. Patients were grouped based on delivery date: pre-implementation (September 1, 2022–November 15, 2023) and post-implementation (December 1, 2023–October 31, 2024) of immediate postpartum diabetes (IPD) testing.

The pre-implementation group underwent outpatient diabetes screening 4–12 weeks postpartum, while the post-implementation group received IPD testing in-hospital on postpartum day 1 or 2. Both groups were screened using a two-hour 75-gram oral glucose tolerance test (OGTT).

We extracted data from the electronic medical record, including demographics, medical history, GDM details, pregnancy outcomes, and postpartum diabetes testing results. We compared testing completion rates and pregnancy outcomes between the pre-and post-implementation groups. Within the post-implementation group, we analyzed differences between those tested and not tested. Statistical analyses included chi-square and t-tests.

Results

There were 63 patients in the pre-implementation group and 92 in the post-implementation group. The pre-implementation group was nearly three years younger ($p<0.01$). Otherwise, the two groups had similar BMI, parity, insurance type, marital status, language, race, and ethnicity ($p>0.05$).

Compared to the pre-implementation group, the post-implementation group had a significantly higher diabetes testing rate - 14.3% (9/63) vs. 68.5% (63/92), ($p<0.01$).

While the pre-implementation group was more likely to be induced ($p=0.03$), groups had similar timing of GDM diagnosis, GDM type and control, antepartum insulin/metformin use, mode of delivery, pregnancy complications, length of stay, newborn weight, Apgar scores, and NICU admission ($p>0.05$).

In the post-implementation period, those who were tested were more likely to be non-English speakers [22.2% (14/63) vs. 3.15% (1/29), $p=0.02$] and have a postpartum length of stay of >1 day [98.4% (962/63) vs. 48.3% (14/29), $p<0.01$] compared to those who were not tested. There was no difference in terms of age, BMI, type of insurance, marital status, gravidity, parity, race, ethnicity, type of delivery, pregnancy complications, and GDM type ($p>0.05$).

Results

Table 1. Patient Characteristics between Pre-Implementation and Post Implementation Cohorts			
Patient Characteristics (%)	Pre-Implementation	Post-Implementation	p-value
Total Patients	63	92	
Age, mean (SD)	31.59 (5.63)	34.25 (5.80)	0.005
BMI, mean (SD)	35.83 (5.28)	36.13 (6.69)	0.7545
Insurance			0.886
Medicaid	61.90 (39)	63.04 (58)	
Private	38.10 (24)	36.96 (34)	
Marital Status			0.897
Single	42.86 (27)	39.13 (36)	
Married	53.97 (34)	57.61 (53)	
Divorced	3.17 (2)	3.26 (3)	
Gravida			0.373
1	14.29 (9)	18.48 (17)	
>1	85.71 (54)	81.52 (75)	
Parity			0.753
1	29.51 (18)	27.17 (25)	
>1	70.49 (43)	72.83 (67)	
Language			0.241
English	92.06 (58)	83.70 (77)	
Spanish	6.35 (4)	9.78 (9)	
Other	1.59 (1)	6.52 (6)	
Race			0.359
White	25.40 (16)	30.43 (28)	
Black	39.68 (25)	26.09 (24)	
Asian	14.29 (9)	18.48 (17)	
Other	20.63 (13)	25.00 (23)	
Ethnicity			0.353
Hispanic	20.63 (13)	27.17 (25)	
Non-Hispanic	79.37 (50)	72.83 (67)	

Table 2. Pre- and Post-Implementation Postpartum Diabetes Testing Rate and Pregnancy Outcomes			
Patient Characteristics (%)	Pre-Implementation	Post-Implementation	p-value
Total Patients	63	92	
Tested	14.29 (9)	68.48 (63)	<0.001
Type of Delivery			0.575
SVD	49.21 (31)	45.65 (42)	
Cesarean	46.03 (29)	52.17 (48)	
Vacuum-Assisted	1.59 (1)	0.00 (0)	
VBAC	3.17 (2)	2.17 (2)	
Post-Delivery LOS			0.606
1 day	14.29 (9)	17.39 (16)	
>1 day	85.71 (54)	82.61 (76)	
Pregnancy Complications			0.089
None	66.67 (42)	72.83 (67)	
Preeclampsia with SF	4.76 (3)	10.87 (10)	
Preeclampsia	6.35 (4)	6.52 (6)	
Gestational HTN	3.17 (2)	3.26 (3)	
Chronic HTN	17.46 (11)	5.43 (5)	
GA at GDM Diagnosis, mean (SD)	28w0d (6w5d)	28w6d (7w)	0.437
GDM Type			0.275
GDMA1	47.62 (30)	56.52 (52)	
GDMA2	52.38 (33)	43.48 (40)	
GDM Control			0.366
Good	76.19 (48)	69.57 (64)	
Poor	23.81 (15)	30.43 (28)	
GDM Medication			0.065
None	46.03 (29)	54.35 (50)	
Insulin	46.03 (29)	27.17 (25)	
Metformin	7.94 (5)	14.13 (13)	
Both	0.00 (0)	4.35 (4)	
Induction of Labor			0.031
Performed	55.56 (35)	38.04 (35)	
Not Performed	44.44 (28)	61.96 (57)	

Discussion

Despite similar characteristics and pregnancy outcomes between groups, immediate postpartum diabetes testing resulted in a nearly fivefold increase in testing rates compared to traditional 4–12 weeks postpartum testing, highlighting a significant increase in test adherence. Patients with shorter hospital stays were less likely to be tested before discharge, as immediate postpartum diabetes testing was implemented with the assurance that it would not compromise safe early discharge.

A major strength of this study is its reflection of real-world clinical practice, demonstrating that immediate postpartum diabetes testing significantly improves testing rates. However, a key limitation is the exclusion of patients who received prenatal care in private offices, due to unavailable pre-implementation data. Future efforts will focus on integrating testing for patients pursuing early discharge and exploring patient perspectives and barriers to testing. Hospital systems should evaluate implementation challenges and consider adopting immediate postpartum diabetes testing to enhance postpartum care for patients with gestational diabetes.

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