STATISTICAL BRIEF

May 2012

Hospitalizations Related to Diabetes in Pregnancy, 2010

This Statistical Brief presents data from the Texas Health Care Information Collection (THCIC) on hospitalizations related to diabetes mellitus in pregnancy in 2010. Specifically, utilization, hospital charge, and patient characteristics of maternal hospitalizations with pre-existing diabetes complicating pregnancy and gestational diabetes mellitus (GDM) are compared with maternal hospitalizations without diabetes by visit type (delivery or non-delivery). Additionally, this report provides information about the types of procedures commonly performed during these stays with deliveries.

In 2010, there were 402,408 maternal discharges in Texas. As shown in Table 1, diabetes-related maternal stays—those involving delivery as well as pregnancy complications—accounted for about 6.7 percent of all maternal stays (27,090 discharges)—5.3 percent of all maternal stays were for gestational diabetes and 1.4 percent were for pre-existing diabetes complicating pregnancy. Roughly 9 out 10 maternal discharges without diabetes (90.0 percent) and with gestational diabetes (90.6 percent) involved the birth of an infant. In contrast, for women with pre-existing diabetes, only 63.5 percent gave birth during the stay—36.5 percent of maternal hospitalizations involving pre-existing diabetes were for treatment of complications with no delivery. The C-section rate for women with pre-existing diabetes complicating pregnancy was about 1.9 times as high as for women without diabetes—67.2 percent compared to 35.3 percent. The C-section rate for women with gestational diabetes was also higher than for women without diabetes (50.3 percent).

Table 2 focuses on hospitalizations without delivery. There were 2,121 hospital stays with pre-existing diabetes complicating pregnancy and 1,996 stays with gestational diabetes and no delivery. There were 37,357 non-delivery maternal hospitalizations without diabetes. The mean length of hospitalizations with pre-existing diabetes complicating pregnancy and gestational diabetes was longer than the average without diabetes (4.1 and 4.9 days versus 3.2 days, respectively). Even though, in general, long lengths of stay can be costly, the mean charge per hospital stay with pre-existing diabetes complicating pregnancy and gestational diabetes was lower than the average without diabetes ($14,661 and $14,106 versus $15,754, respectively). Aggregate charges for non-delivery maternal hospitalizations for pre-existing diabetes complicating pregnancy were $31 million and for gestational diabetes aggregate charges were $28 million, compared to $589 million for non-diabetes maternal hospitalizations without delivery. Discharge against medical advice was more common among stays with pre-existing

diabetes complicating pregnancy (4.38 percent) and gestational diabetes (2.20 percent) compared to stays without diabetes (1.41%).

Table 3 focuses on deliveries and shows that there were 3,683 deliveries among women with pre-existing diabetes complicating pregnancy and 19,290 deliveries for women with gestational diabetes. There were 337,961 hospitalizations for deliveries without diabetes. The mean length of hospitalization for delivery stays with pre-existing diabetes complicating pregnancy and gestational diabetes was longer than the average without diabetes (4.6 and 3.3 days versus 2.5 days, respectively). Compared to the mean charge per stay for deliveries without diabetes ($12,789), deliveries with pre-existing diabetes complicating pregnancy cost 59 percent more per stay ($20,336) and those with gestational diabetes cost 17 percent more ($14,936). Aggregate charges for delivery-related hospitalizations for pre-existing diabetes complicating pregnancy were $75 million and for gestational diabetes aggregate charges were $288 million, compared to $4,322 million for non-diabetes deliveries. Total charges of hospitalization for all diabetes in pregnancy (including deliveries and non-delivery stays) were $422 million, or 7.9 percent of all maternal hospitalization charges ($5,333 million). Discharge against medical advice was uncommon among all deliveries, but was slightly more frequent among delivery stays with pre-existing diabetes complicating pregnancy (0.16 percent) than among delivery stays with gestational diabetes (0.04 percent) or among delivery stays without diabetes (0.05 percent).

Table 4 shows that C-section was the most frequently performed procedure during delivery stays for each of diabetes status. Compared to maternal delivery stays without diabetes, C-section was about 90 percent more likely to be performed for women with pre-existing diabetes complicating pregnancy (67.2 percent of stays) and about 40 percent more likely to be performed for women with gestational diabetes (50.3 percent of stays). Repair of obstetric laceration, which ranked second among stays without diabetes (30.1 percent of stays) and among gestational diabetes stays (23.3 percent of stays), and the third most common procedure for pre-existing diabetes complicating pregnancy stays (15.4 percent of stays). Ligation or occlusion of fallopian tubes was more commonly performed during stays with pre-existing diabetes complicating pregnancy (24.1 percent of stays) and gestational diabetes (17.4 percent of stays) than during stays without diabetes (9.2 percent of stays). Artificial rupture of membranes to assist delivery and episiotomy were less commonly performed for women with pre-existing diabetes complicating pregnancy and gestational diabetes, probably a function of the higher C-section rate. There were no differences in fetal monitoring across the three groups.

Figure 1 shows that 62.0 percent of non-delivery maternal stays with pre-existing diabetes complicating pregnancy were billed to Medicaid, while 26.5 percent were billed to private insurance and 6.9 percent to uninsured individuals. Relative to non-delivery stays with pre-existing diabetes complicating pregnancy, hospitalizations with gestational diabetes and those without diabetes were billed less frequently to Medicaid (51–54 percent), but billed more frequently to private insurance (36–38 percent) and to uninsured individuals (8–9 percent). Among all deliveries, percentage distribution of stays by payer was comparable for the three groups: about half of stays were billed to Medicaid, 41–43 percent to private insurance, and 4–8 percent to the uninsured.

Table1. Number and percentage of delivery and non-delivery maternal stays associated with diabetes in pregnancy, 2010

	Pre-existing diabetes complicating pregnancy	Gestational diabetes	Maternal stays without diabetes
Total hospital stays	5,804	21,286	375,318
(% of all maternal stays)	(1.4%)	(5.3%)	(93.3%)
Stays with delivery	3,683	19,290	337,961
(% of total stays for each column)	(63.5%)	(90.6%)	(90.0%)
Vaginal	1,208	9,580	218,696
(% of stays with delivery)	(32.8%)	(49.7%)	(64.7%)
C-Section	2,475	9,710	119,265
(% of stays with delivery)	(67.2%)	(50.3%)	(35.3%)
Non-delivery stays	2,121	1,996	37,357
(% of total stays for each column)	(36.5%)	(9.4%)	(10.0%)

Note: Counts of hospital stays based on all-listed diagnoses.
Source: Texas Hospital Inpatient Discharge Public Use Data File (PUDF), 2010.

Table 2. Characteristics of hospital stays associated with diabetes in pregnancy, without delivery, 2010

	Pre-existing diabetes complicating pregnancy	Gestational diabetes	Pregnancy-related stays without diabetes
Total hospital stays	2,121	1,996	37,357
Mean length of stay (in days)	4.1	4.9	3.2
Mean charge per stay	$14,661	$14,106	$15,754
Aggregate charges	$31,096,627	$28,155,934	$588,532,631
Discharges against medical advice	4.38%	2.20%	1.41%

Note: Counts of hospital stays based on all-listed diagnoses.
Source: Texas Hospital Inpatient Discharge Public Use Data File (PUDF), 2010.

Table 3. Characteristics of hospital stays associated with diabetes in pregnancy, deliveries only, 2010

	Pre-existing diabetes complicating pregnancy	Gestational diabetes	All deliveries without diabetes
Total hospital stays	3,683	19,290	337,961
Mean length of stay (in days)	4.6	3.3	2.5
Mean charge per stay	$20,336	$14,936	$12,789
Aggregate charges	$74,898,296	$288,120,538	$4,322,074,569
Discharges against medical advice	0.16%	0.04%	0.05%

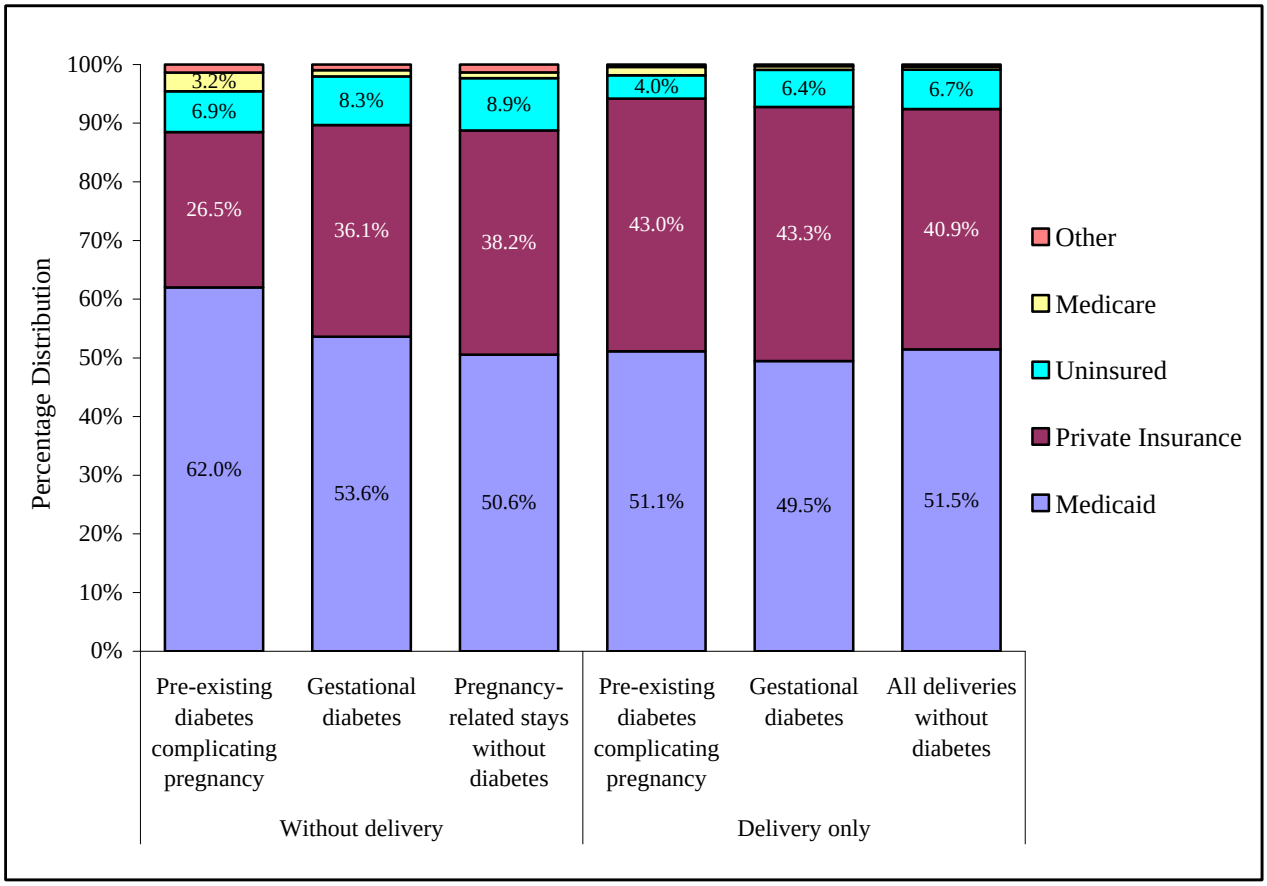
Note: Counts of hospital stays based on all-listed diagnoses.
Source: Texas Hospital Inpatient Discharge Public Use Data File (PUDF), 2010.

Table 4. Most frequent all-listed procedures associated with diabetes in pregnancy, deliveries only, 2010

	Pre-existing diabetes complicating pregnancy		Gestational diabetes		All deliveries without diabetes	
	Stays (%)	**Rank**	**Stays (%)**	**Rank**	**Stays (%)**	**Rank**
Total hospital stays	3,683 (100.0%)	--	19,290 (100.0%)	--	337,961 (100.0%)	--
All-listed procedures						
Cesarean section	2,475 (67.2%)	1	9,710 (50.3%)	1	119,265 (35.3%)	1
Repair of obstetric laceration	568 (15.4%)	3	4,499 (23.3%)	2	101,646 (30.1%)	2
Ligation or occlusion of fallopian tubes	888 (24.1%)	2	3,358 (17.4%)	3	30,940 (9.2%)	5
Artificial rupture of membranes to assist delivery	490 (13.3%)	4	3,016 (15.6%)	4	61,234 (18.1%)	3
Fetal monitoring	291 (7.9%)	5	1,814 (9.4%)	5	26,804 (7.9%)	6
Episiotomy	124 (3.4%)	6	1,178 (6.1%)	6	31,525 (9.3%)	4

Note: Other procedures to assist delivery (CCS procedure code 137) are not listed.
Source: Texas Hospital Inpatient Discharge Public Use Data File (PUDF), 2010.

Figure 1. Majority of delivery and non-delivery stays were billed to Medicaid and private insurance, regardless of diabetes diagnosis, 2010



Note: Distributions less than 2 percent are not labeled.
Source: Texas Hospital Inpatient Discharge Public Use Data File (PUDF), 2010.