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# **Postpartum Depression Among Women Utilizing Texas Medicaid**

**As Required By  
2016-17 General Appropriations Act (Article II, Special  
Provisions Relating to All Health and Human Services  
Agencies, Section 54, 84<sup>th</sup> Legislature, Regular Session, 2015**

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**Texas Health and Human Services Commission  
Texas Department of State Health Services**

**October 2016**



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# Postpartum Depression Among Women Utilizing Texas Medicaid

## EXECUTIVE SUMMARY

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The 2016-17 General Appropriations Act, H.B. 1, 84<sup>th</sup> Legislature, Regular Session, 2015 (Article II, Special Provisions Relating to All Health and Human Services Agencies, Section 54), directed the Health and Human Services Commission (HHSC), in coordination with the Department of State Health Services (DSHS),<sup>1</sup> to submit a report on screening and treatment of postpartum depression (PPD). The report includes recommendations to increase utilization of screening and treatment within the Medicaid program, increase the treatment of postpartum depression provided by the local mental health authorities, and increase continuity of care.

PPD is a common and potentially serious condition typically diagnosed after pregnancy. The impact of postpartum depression, and related conditions, can be far reaching. Numerous studies demonstrate women suffering from PPD develop behaviors that negatively impact their parenting abilities and compromise the mother-child bond. This in turn creates conditions which adversely affect their child's social and cognitive development, may exacerbate issues of difficult child temperament, and decrease motor development and learning skills. The consequences of behavioral conditions, including PPD, may ultimately influence the health and well-being of the child. Children of mothers with PPD and related conditions are at a greater risk of abuse or neglect, are at a greater risk of failure to thrive, and may be more likely to be hospitalized for preventable health issues such as increased rates of suicide attempts and untreated asthma.

PPD, although an important behavioral risk factor impacting families, appears to be significantly underreported among Medicaid clients when compared to state estimates from other sources (e.g., the Texas Pregnancy Risk Assessment Monitoring System [PRAMS]). Medicaid PPD rates during state fiscal year (SFY) 2014 were 1.7 percent (3,533 out of 212,809) of all Medicaid paid births. This rate is 80 to 90 percent lower than the Texas PRAMS estimate of 16.9 percent and approximately 85 percent lower than the national average of 15 percent. This may be due, in part, because:

- PRAMS data are retrospective self-reported survey data which extend beyond the woman's Medicaid eligibility period;
- Medicaid rates are based on medically diagnosed conditions reported from claims and encounters data; and
- Most Medicaid based enumeration of PPD or other diagnosed mental disorders (DMD) cease at the end of the woman's two month postpartum eligibility period.

Over 50percent of identified PPD among women in Medicaid were identified in the first few days after delivery. Other, non-PPD diagnosed mental disorders (DMDs) were diagnosed at a consistent rate before and after delivery (approximately 180 cases per

week). A total of 19,724 women received a diagnosis of depression (see Table A1) or PPD during pregnancy and/or after delivery, representing 9.3 percent of the 212,809 women who gave birth in SFY 2014.

Approximately \$14 million (All Funds) were spent annually in Medicaid in SFY 14 on all mental disorders (including PPD) during pregnancy and throughout the mother's two month postpartum eligibility period. Less than a quarter of that amount was spent on PPD.

In order to increase awareness, education, and continuity of care for women with PPD, HHSC and DSHS launched several initiatives in 2016. The first initiative was the PPD outreach campaign in May 2016, conducted in conjunction with Mental Health Month. The second initiative involved automatic enrollment of eligible women into the Healthy Texas Women (HTW) program following the termination of Medicaid Pregnant Women's coverage on July 1, 2016. The HTW auto-enrollment process closes the gap in coverage for many vulnerable women and preserves their access to necessary services.

The increase in screening and treatment for PPD through the Medicaid Pregnant Women's (MPW), CHIP Perinatal, HTW, and Family Planning (FP) programs will improve maternal health. While substantial improvements were made to streamline the coordination of care and continuity of services for women with PPD during 2016, HHSC and DSHS will continue to work with providers across the state to increase awareness and continuity of care for women with PPD.

# Postpartum Depression Among Women Utilizing Texas Medicaid

## INTRODUCTION

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The 2016-17 General Appropriations Act, H.B. 1, 84<sup>th</sup> Legislature, Regular Session, 2015 (Article II, Special Provisions Relating to All Health and Human Services Agencies, Section 54), directed the Health and Human Services Commission (HHSC), in coordination with the Department of State Health Services, to submit a report on screening and treatment of postpartum depression. The report includes recommendations to increase utilization of screening and treatment within the Medicaid program, increase the treatment of postpartum depression provided by the local mental health authorities, and increase continuity of care.

As instructed, HHSC will submit the report to the Legislative Budget Board, the Office of the Governor, and the permanent standing committees in the House of Representatives and the Senate with jurisdiction over health and human services no later than October 1, 2016.

## POSTPARTUM DEPRESSION

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Postpartum depression (PPD) is a common and potentially serious condition typically diagnosed after pregnancy. However, depression during and after pregnancy can manifest itself in several forms. According to the American Congress of Obstetrics and Gynecologists (ACOG):

*"Perinatal depression, which includes major and minor depressive episodes that occur during pregnancy or in the first 12 months after delivery, is one of the most common medical complications during pregnancy and the postpartum period, affecting one in seven women."*<sup>2</sup>

PPD should not be confused with "baby blues" which is a temporary state that usually occurs within a few days of a baby's birth and can last up to two weeks.<sup>3</sup> Symptoms are similar to PPD and can include tearfulness, exhaustion, anxiety, and difficulty sleeping. PPD is characterized as a major depressive disorder with a peripartum or postpartum onset.<sup>4</sup> Common symptoms of PPD include trouble sleeping, difficulty performing daily activities, feelings of guilt, and anxiety.<sup>5</sup>

In particular, PPD symptoms occur after pregnancy, up to one year after delivery, but are typically apparent during pregnancy (50 percent of the time) and about one to three weeks after childbirth.<sup>6</sup> Underlying causes of PPD include:

- Changes in hormone levels
- History of depression
- Emotional factors

- Fatigue
- Lifestyle factors

Recent studies suggest that the roots of PPD may originate prior to delivery. Women exhibiting symptoms during pregnancy may suffer severe postpartum depression relative to individuals diagnosed after delivery and were more likely to exhibit symptoms including suicidal thoughts, panic, and frequent crying.<sup>7</sup> In extreme situations, mothers suffering from PPD may experience thoughts of suicide or infanticide.<sup>8</sup>

The impact of PPD, and related conditions, can be far reaching. Relationships among partners may be compromised by PPD.<sup>9</sup> Numerous studies demonstrate women suffering from PPD develop behaviors that negatively impact their parenting abilities and compromise the mother-child bond.<sup>10,11</sup> This in turn creates conditions which adversely affect their child's social and cognitive development, may exacerbate issues of difficult child temperament, and decrease motor development and learning skills.<sup>12</sup>

The consequences of behavioral conditions, including PPD, may ultimately influence the health and well-being of the child. Children of mothers with PPD and related conditions are at a greater risk of abuse or neglect, are at a greater risk of failure to thrive, and may be more likely to be hospitalized for preventable health issues such as untreated asthma.<sup>8</sup>

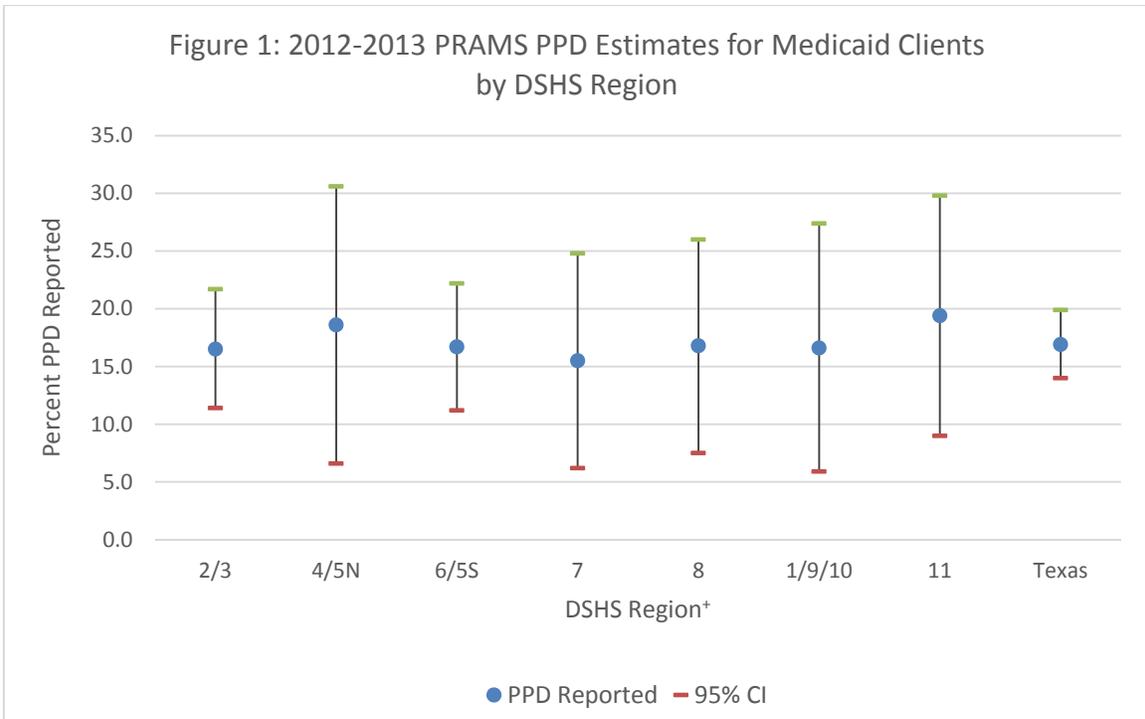
## **PREVALENCE OF REPORTED PPD AMONG WOMEN IN TEXAS MEDICAID**

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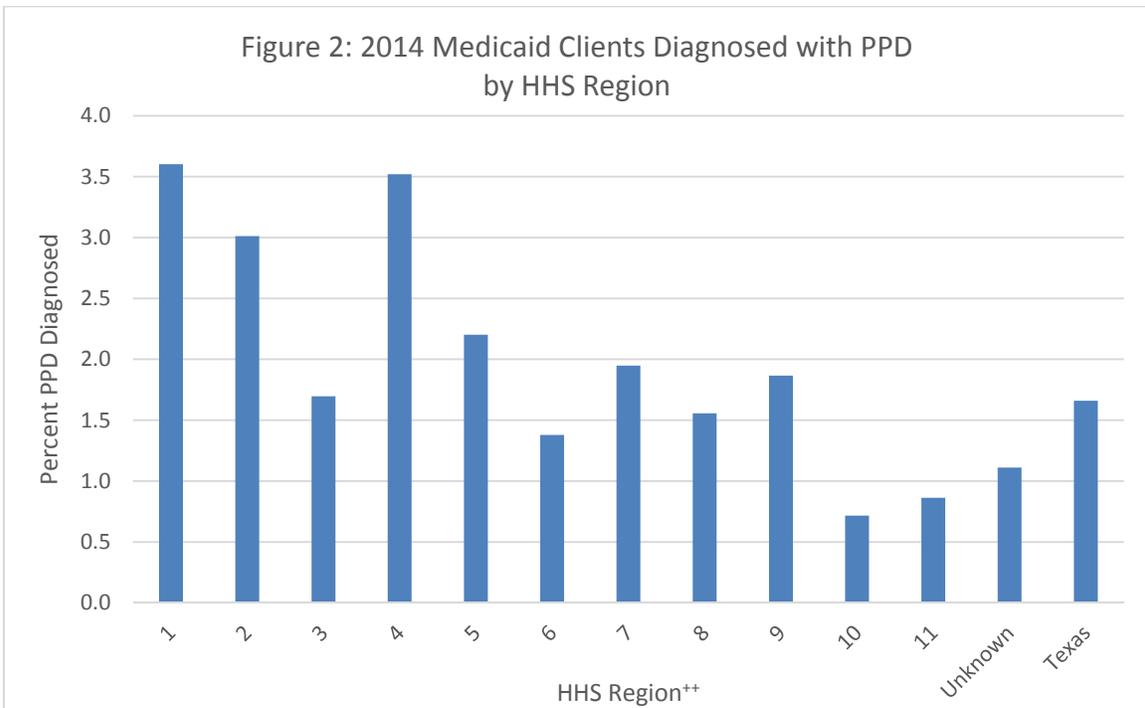
In 2010, 12.2 percent of Texas women reported symptoms of postpartum depression (PPD).<sup>13</sup> Women with a household income of less than \$15,000 had nearly twice the rate (15.8 percent) of PPD compared to women with a household income above \$50,000 (8 percent). Unmarried women had a significantly higher rate (15.1 percent) of PPD than their married counterparts (10.1 percent). Women ages 20-24 had nearly twice the rate (15.1 percent) of PPD than women over 35 years of age (8.3 percent).<sup>14</sup>

For the present analyses, we identified women who delivered a newborn during SFY 2014 and diagnosed with PPD and/or an unrelated diagnosed mental disorder (DMD) consisting predominately of bipolar and depressive disorders unattributed to PPD occurring during pregnancy and throughout the postpartum period (from 220 days before or up to one year after delivery; see Appendix: Methods and Data, Table A3).<sup>15</sup> Women maintaining Medicaid beyond their two month postpartum eligibility period meet other Medicaid eligibility criteria (e.g. individual has a qualifying disability), and are not part of the Enrollment of Pregnant Women (TP 40) program.

PPD, although an important behavioral risk factor impacting families, appears to be significantly underreported among Medicaid clients when compared to state estimates from other sources (e.g., the Texas Pregnancy Risk Assessment Monitoring System [PRAMS]). Medicaid PPD rates during SFY 2014 were 1.7 percent (3,533 out of 212,809) of all Medicaid paid births. This rate is 80 to 90 percent lower than the PRAMS estimate (16.9 for 2012-2013)<sup>16</sup> and approximately 85 percent lower than the national average of 15 percent (Figures 1 and 2; Table A2).<sup>17,18</sup> This may be due, in part, because 1) PRAMS data are retrospective self-reported survey data which extend beyond the Medicaid eligibility period<sup>19</sup> (See the Methods and Data section of the Appendix for PRAMS questions regarding PPD), 2) Medicaid rates are based on medically diagnosed conditions reported from claims and encounters data, and 3) most Medicaid based enumeration of PPD or other DMD cease at the end of the woman's two month postpartum eligibility period. In SFY2014, 212,809 women's deliveries were paid by Medicaid and 212,532 of these women received Medicaid for pregnant women (TP40). The majority of the remaining 277 deliveries were paid for by Emergency Medicaid (TP30). Over 99 percent of these women were still enrolled within two months following their deliveries. Of the 212,411 women enrolled within two months of the delivery, 20 percent had uninterrupted enrollment beyond three months after delivery. Approximately 40 percent of the women extended their two month enrollment after giving birth or received additional Medicaid services by changing from TP40 and qualifying for other programs.



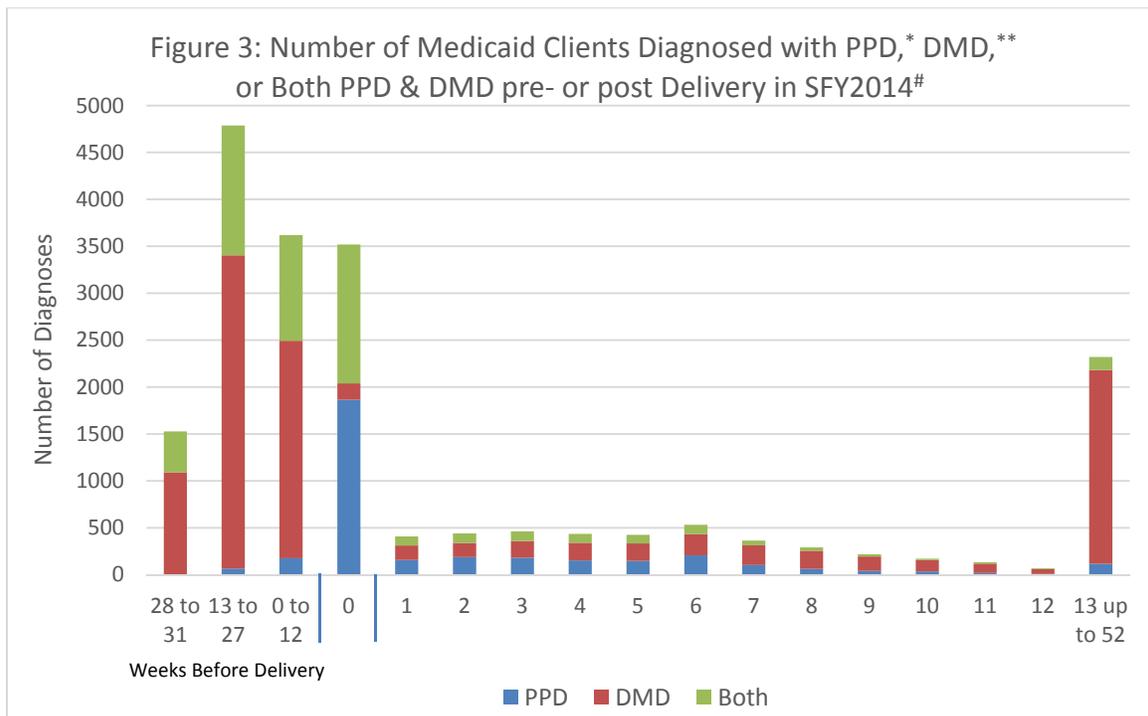
<sup>+</sup> see Appendix Figure A1



<sup>++</sup> see Appendix Figure A2

Over 50 percent of identified PPD among women in Medicaid were identified in the first few days after delivery (see Figure 3). Beyond the first week postpartum, the identification of PPD declines - but remains steady for about 6 weeks after delivery (approximately 175 cases per week). The identification of PPD begins to drop at week 7 after delivery and continues to decline over time as benefits end (Table A3).

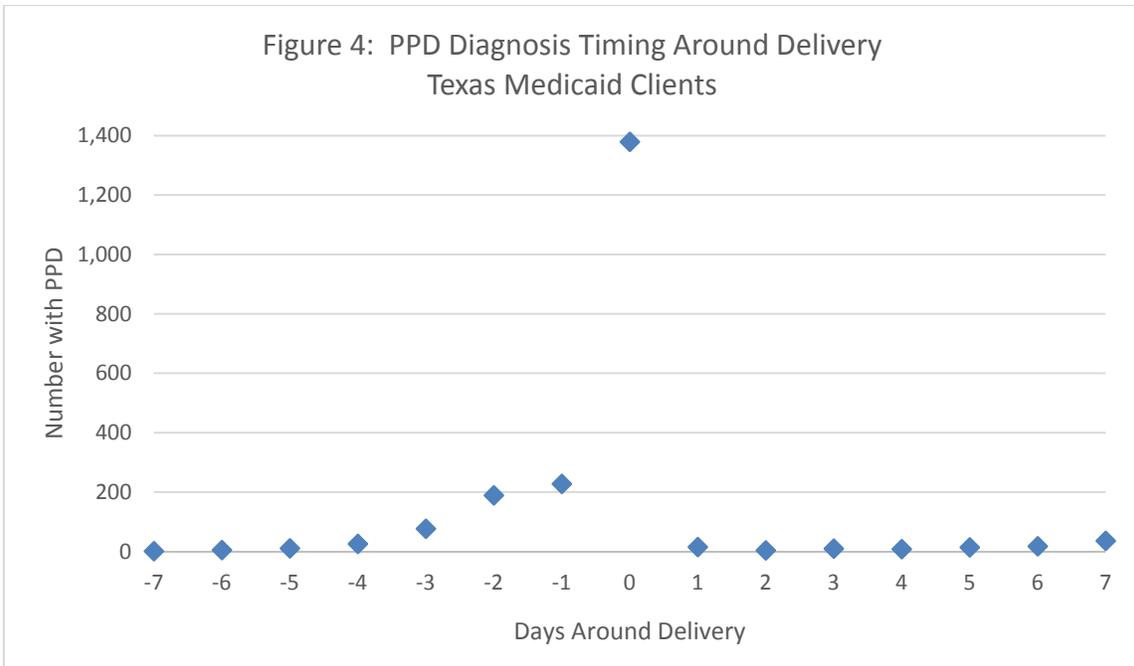
The majority of PPD diagnoses occur on the day of delivery (Figure 4). An additional cluster of PPD diagnoses occur several days prior to delivery. For that reason, we included PPD identified during the two days prior to delivery in our PPD rate calculations. During 2014, 417 women were diagnosed one or two days before delivery, and 1,379 were diagnosed on the day of delivery.



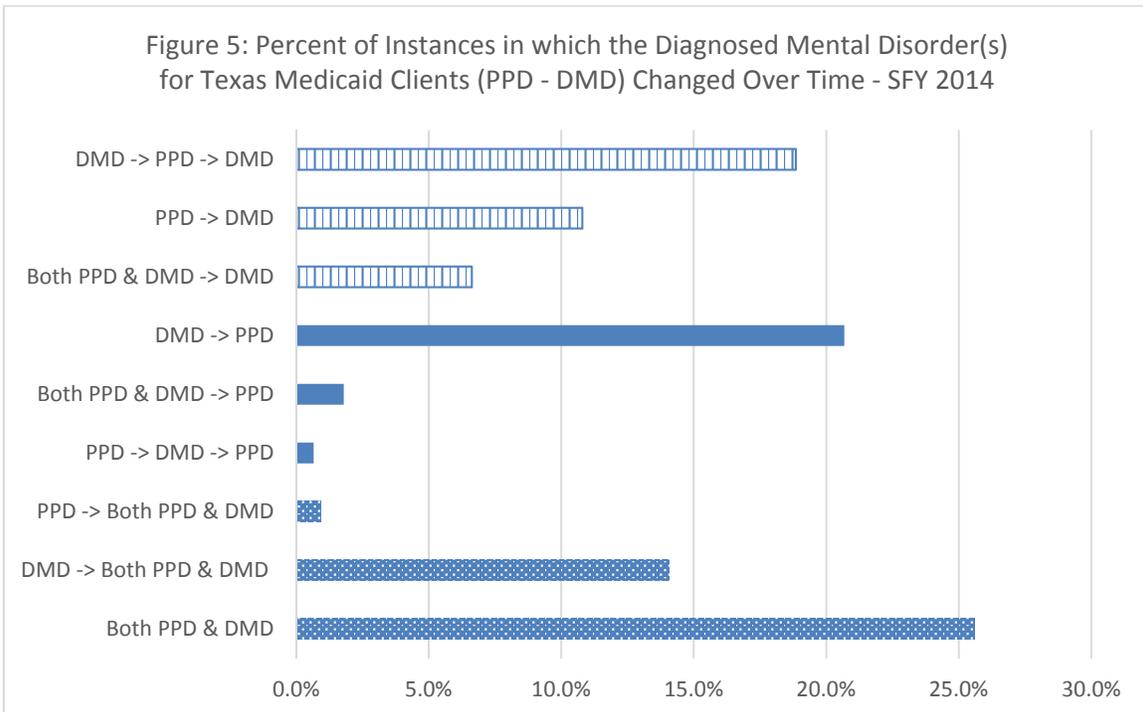
\* Postpartum depression (PPD)

\*\* Diagnosed mental disorder (DMD) excluding PPD

# see Appendix for a list of diagnoses used to determine PPD and DMD

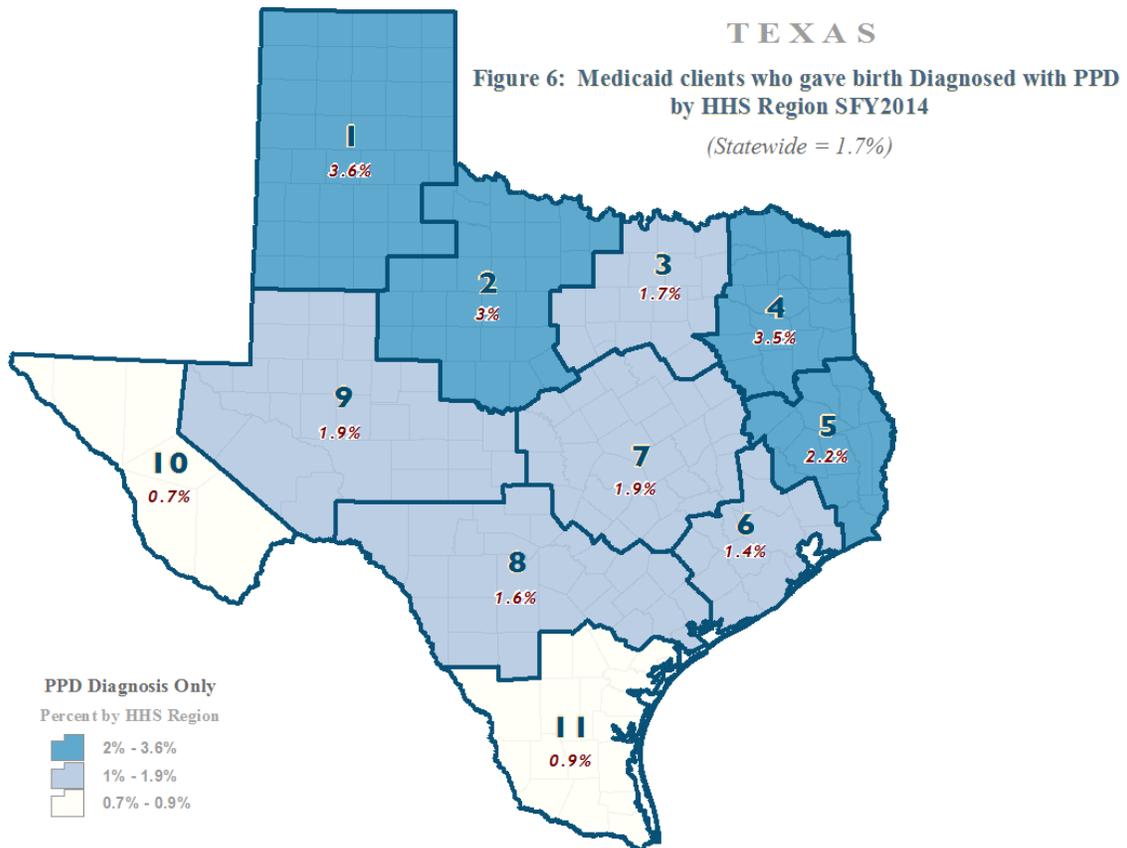


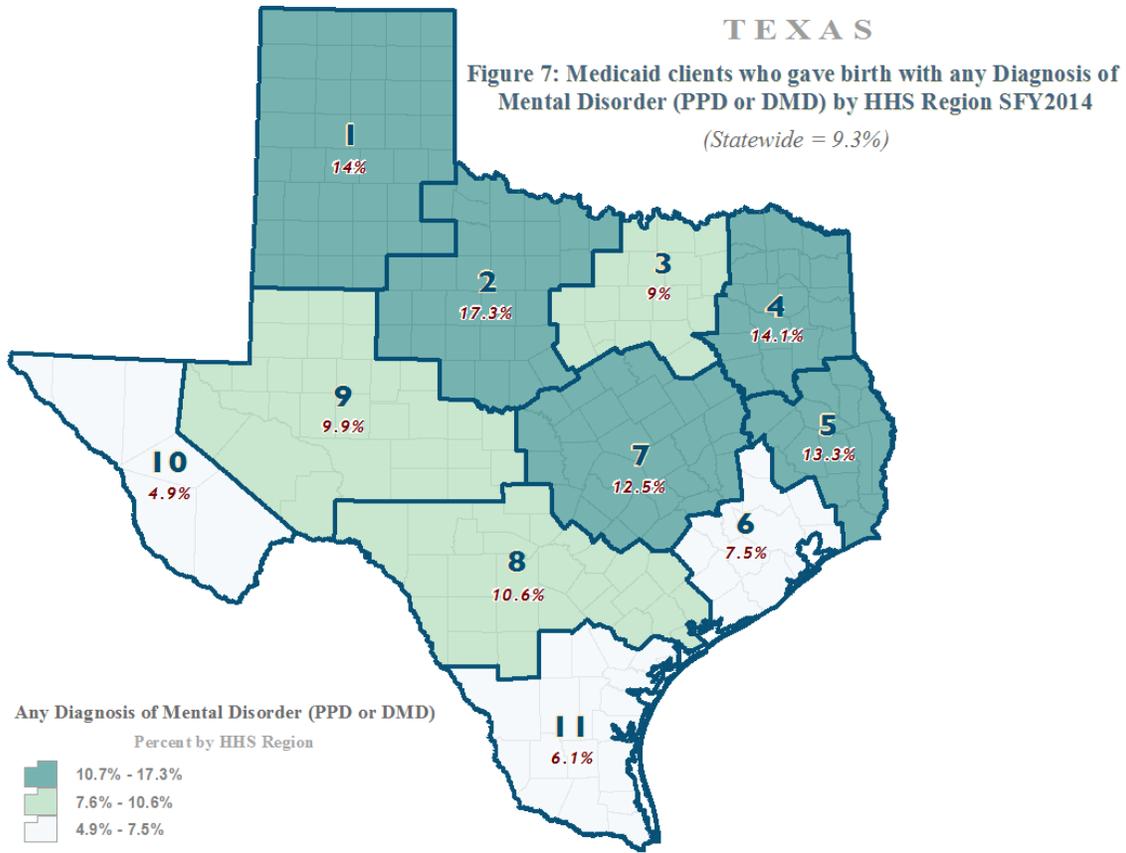
Approximately one quarter of all perinatal mental health diagnoses (PPD and DMD) in Medicaid include both PPD and DMD (Figure 5; Table A4). Approximately two-thirds of the individuals who present with both diagnoses end the evaluation period (before they exit Medicaid) with a final diagnosis that includes PPD. The changing diagnoses over time may reflect the experience of the provider(s) assessing the patient, different providers treating the patient through her eligibility period, or reassessments of the original diagnoses.



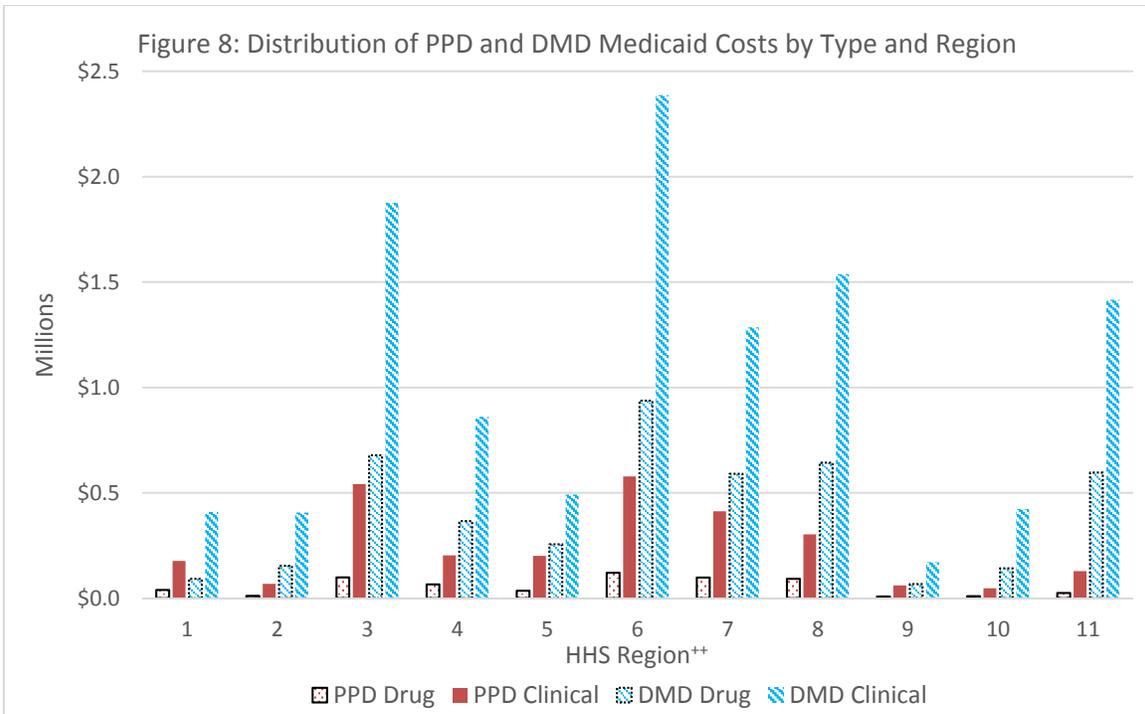
Other DMDs are diagnosed at a consistent rate before and after delivery (approximately 180 cases per week). A total of 19,724 women received a diagnosis of depression or PPD during pregnancy and/or after delivery, representing 9.3 percent of the 212,809 women in Medicaid who gave birth in SFY 2014. However, in instances in which PPD and DMD co-occur, the pattern of postpartum diagnoses correlates strongly with the PPD only diagnoses. When summed together, PPD-only diagnoses plus combined PPD/DMD diagnoses fall below Texas PRAMS estimates (Table A2). Only when ALL instances of PPD or DMD are summed together do the rates of perinatal mental disorders approach PRAMS estimates. The results shift more behavioral health diagnoses to those women diagnosed solely with PPD or a combination of PPD and DMDs. In addition, a majority of PPD diagnoses occur during the last trimester of pregnancy and the first six weeks postpartum. DMD diagnoses tend to remain steady both prior to and after pregnancy.

However, compared to results derived from the PRAMS survey, as well as the published literature, PPD remains underreported among Texas Medicaid clients and varies widely by HHS region. PPD-only and all diagnosed mental disorders tend to be reported in relatively lower rates within the border regions as well as Region 6. The northern panhandle (regions 1 and 2) and northeast Texas (regions 4 and 5) exhibit the highest rates of PPD or any mental disorder.

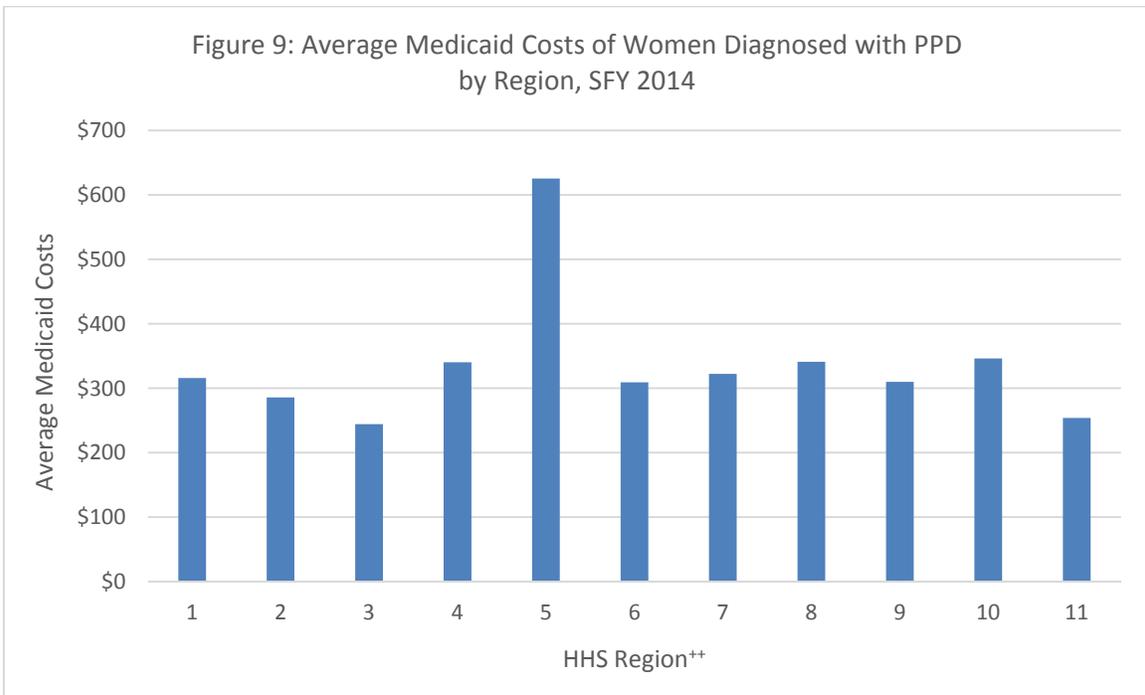




Over \$14 million (All Funds) were spent annually in Medicaid on all mental disorders (including PPD) for clinical services and prescribed drugs during pregnancy and as long as the mother remained eligible beyond her two month postpartum eligibility period (up to one year after delivery; Table A5). Distributions of expenditures by region for diagnosis type (PPD vs DMD) and by type of expenditure (clinical vs drug) are shown in Figure 8. Under one quarter of that amount (22.5 percent) was spent on PPD. With the exception of Region 5 (\$625), the average cost to Medicaid for a women diagnosed with PPD is approximately \$307 (Figure 9). There is no correlation between the amounts spent per region and the PPD rates found for that region ( $r^2 = .01$ ) or for expenditures with any mental disorder (including PPD;  $r^2 = .13$ ). Stronger, albeit weak, relationships exist for DMD expenditures by region ( $r^2 = .21$ ).



++ see Appendix Figure A2



++ see Appendix Figure A2

## **HHS PROGRAM SUPPORT FOR PPD**

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HHSC and DSHS have several programs to support the increase of PPD screening and treatment. Medicaid provides routine care during prenatal and postpartum visits. During these visits, a provider may screen for PPD, but Medicaid does not separately reimburse for this screening. In certain circumstances, local mental health authorities can also play a role in the treatment of severe PPD.

### **Medicaid/CHIP Perinatal Program**

In the Medicaid for Pregnant Women (MPW) program, members could be screened at a postpartum visit within their two month postpartum coverage period. MPW members with a positive screen would be eligible to receive further evaluation by an appropriate clinician at the postpartum visit. The clinician would evaluate the severity of the depression and assess treatment options. MPW members would be able to access treatment during their 60-days postpartum coverage, which would include any covered outpatient mental health services, such as individual, family or group psychotherapy, a psychiatric diagnostic evaluation, pharmacological management, and psychological or neuropsychological testing if needed.

CHIP-Perinatal members could be screened during one of the two postpartum visits covered under the program, but they would not be able to access treatment for PPD, because the CHIP-Perinatal program is intended to provide coverage for the unborn child and does not include mental health benefits for the mother.

A standardized, self-administered screening tool with review and follow-up questions during a routine visit with the provider ensures consistency and efficiency in the screening process. The following PPD screening tools are available on-line and have been validated for use in postpartum patients:

- Edinburgh Postnatal Depression Scale
- Postpartum Depression Screening Scale
- Patient Health Questionnaire-9

Women with PPD who are enrolled in Medicaid are eligible to receive covered outpatient mental health services, including individual, family or group psychotherapy, a psychiatric diagnostic evaluation, pharmacological management, and, if needed, psychological or neuropsychological testing. In more severe circumstances, inpatient psychiatric treatment is also covered for women ages 21-64 at an acute care hospital and at a psychiatric facility for those under 21 years of age.<sup>20</sup>

HHSC has communicated PPD information regarding screening and treatment resources to providers in both Medicaid Fee-for-Service and managed care.

## **Local Mental Health Authorities**

If a Medicaid provider is unable to deliver the necessary follow up care, they can refer patients to local behavioral healthcare providers. Local Mental Health Authorities (LMHAs) are community mental health centers that provide affordable mental health services to eligible adults and youth.<sup>21</sup> Individuals seeking mental health services are initially assessed to identify their needs and strengths and then are authorized into a level of care that meets their needs and preferences. Services are provided in one of several level of care (LOC) service packages and include, but are not limited to: psychiatric diagnosis; pharmacological management, training and support; skills training and education; case management; supported housing and supported employment; peer services (including family partners); crisis intervention; therapy; and rehabilitative services. Individuals assessed as having a substance use disorder may receive co-occurring psychiatric and substance use disorder (COPSD) services and are referred to appropriate substance use providers as needed.

Each of the 37 LMHAs receive state funding to provide a hotline and crisis outreach services in their communities. The 24-hour, 7-days a week (24/7) hotline serves as the first point of contact for mental health crisis in the community, providing confidential telephone triage to determine the immediate level of need and to mobilize emergency services if necessary. Crisis outreach teams provide 24/7, prompt face-to-face crisis assessment, crisis intervention services, and crisis follow-up and relapse prevention services. Crisis outreach teams respond to calls in the community and collaborate closely with community partners such as law enforcement and local emergency departments to ensure behavioral healthcare needs are appropriately addressed.

Additionally, several LMHAs operate crisis facilities. There are four types of state funded community-based crisis facilities in Texas:

- Crisis Stabilization Units (CSU) – provide short-term, crisis treatment to reduce acute symptoms of mental illness in individuals with a high to moderate risk of harm to self or others. CSUs are licensed facilities and may accept individuals on emergency detention or orders of protective custody.<sup>22</sup>
- Extended Observation Units (EOU) – provide emergency services to individuals in behavioral health crisis for up to 48 hours. These individuals may pose a high to moderate risk of harm to self or others. EOUs may accept individuals on emergency detention.
- Crisis Residential Facilities – provide up to 14 days of community-based residential crisis treatment to individuals with a moderate to mild risk of harm to self or others, who may have fairly severe functional impairment, and whose symptoms cannot be stabilized in a less intensive setting. Crisis residential facilities are not designed to accept individuals on involuntary status.
- Crisis Respite Facilities – provide up to seven days of community-based residential crisis treatment for individuals who have low risk of harm to self or others and who may have some functional impairment. Services may occur over a brief period of time, such as two hours, and generally serve individuals with housing challenges or assist caretakers who need short-term housing or

supervision for the persons for whom they care to avoid mental health crisis. Crisis respite facilities are not designed to accept individuals on involuntary status.

While these crisis facility types were designed to operate as a continuum of care, not every community has each of these crisis facilities. The availability of a crisis facility type in a specific area of the state is largely dependent on the community need and available resources.

Patients are recommended to receive a certain level of care based on an assessment of their needs and strengths. For women with severe PPD, LMHAs can provide more intensive psychological counseling or psychiatric treatment. The HHSC Office of Mental Health Coordination website, <https://mentalhealthtx.org/> has a complete list of behavioral health providers in Texas.

Women who are in crisis can receive services immediately through LMHAs. These services include the crisis hotline or the Mobile Crisis Outreach Team. Other crisis services include crisis respite facilities, crisis residential facilities, and hospitalization. If, at any time, a patient is considered to be at possible risk of suicide, the provider will evaluate the patient and refer to local emergency behavioral health services or emergency medical services.

### **Other State Programs**

In order to increase continuity of care, other state programs offer screening and treatment of PPD. Currently, coverage for a pregnant woman under Medicaid ends two months after a woman's pregnancy ends. Starting on July 1, 2016, eligible women are automatically enrolled into the Healthy Texas Women (HTW) program following the termination of their MPW coverage. HTW is a statewide women's health and family planning program. The HTW auto-enrollment process closes the gap in coverage for many vulnerable women and preserves their access to necessary services.

The Family Planning (FP) program provides statewide family planning services to eligible low-income women and men of reproductive age. HTW and FP both cover initial and repeat screenings for PPD. In addition, HTW also provides treatment for PPD. HTW treatment options include outpatient evaluation, management services and antidepressants. Should a patient need further treatment, both HTW and FP providers can refer patients to LMHAs. More information for both HTW and FP is available at [www.healthytexaswomen.org](http://www.healthytexaswomen.org).

### **House Bill 2079**

During the 84<sup>th</sup> Regular Legislative Session, 2015, the Legislature passed House Bill 2079 which designated the month of May as Postpartum Depression Awareness Month in Texas. Postpartum Depression Awareness Month seeks to increase awareness of PPD and encourage:

- The identification of signs, symptoms, and treatment options for PPD
- The creation and update of lists of recommended materials for perinatal mental health available through DSHS and HHSC
- Electronic circulation and posting on state and local agency websites of recommended PPD resources
- Mothers-to-be and new mothers to be screened for PPD using validated survey instruments
- Collaboration between governmental agencies, educational institutions, hospitals, private healthcare practices, health insurance providers, Medicaid providers, and mental health agencies to increase awareness of postpartum affective illness<sup>23</sup>

The HHSC Office of Mental Health, in collaboration with the HHSC Women’s Health Services Division, the Department of Aging and Disability Services (DADS) Media Team and the HHSC Medicaid/CHIP Division, created and distributed marketing materials to all Women, Infant, and Children local agency (WIC) offices, Health and Human Services System offices, and statewide crisis pregnancy centers. These materials encourage women to talk to their healthcare provider if they are experiencing symptoms of PPD and include resources available through HHSC and DSHS. A resource list and an electronic version of the marketing materials were made available on [www.mentalhealthtx.org](http://www.mentalhealthtx.org) and [www.healthytexaswomen.org](http://www.healthytexaswomen.org).

On May 25, 2016, HHSC staff presented an update to the Women's Health Advisory Committee regarding the auto-enrollment of MPW clients into HTW and the PPD outreach campaign. Committee members were given outreach materials for their clinics and networks.

## **CURRENT PRACTICES AND APPROACHES FOR CONSIDERATION**

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The American Congress of Obstetricians and Gynecologists (ACOG)<sup>24</sup>, American Academy of Pediatricians (AAP) and United States Preventive Services Task Force (USPSTF) recommends screening for depression in pregnant and postpartum women utilizing a standardized, validated tool to screen for depression and anxiety symptoms at least once during the perinatal and the postpartum period. PPD is the most common complication of childbearing and the most under-screened for diagnosis.<sup>25</sup> One barrier to treatment identified by ACOG is that screening must be accompanied by follow-up as needed.<sup>26</sup> Depending on the scores of the depression screening tool, appropriate referrals should include both the use of medications and/or psychotherapy. A screening is insufficient by itself to improve health outcomes. There need to be systems in place to ensure follow-up for diagnosis and treatment. Based on these recommendations, there are

a variety of ways to increase the utilization of screening and treatment within Medicaid in Texas.

## **Screening Tools**

### *Postpartum Depression Screening Scale (PDSS)*

The Postpartum Depression Screening Scale is a self-reported scale with 35 items scored with a 5 point Likert scale defining the mother's feelings in the period after the birth of baby. The mother is asked to rate her feelings about the situation over the past two weeks on a scale of 1 (strongly disagree) to 5 (strongly agree). This scale was not chosen as the universal, reimbursable screening due to the time-sensitive need for screening to only be conducted in the postpartum period.<sup>27</sup>

### *Beck Depression Inventory (BDI)*

The Beck Depression Inventory (BDI) was developed in 1979 and is also a self-reported scale with 21 items that measure emotional, somatic, cognitive, and motivation symptoms seen in depression. Aimed primarily at diagnosis of depression, the BDI does not determine the severity of depressive symptoms. This inventory was not chosen as the universal, reimbursable screening due to non-specific time frames regarding when symptoms presented and lack of specificity regarding the postpartum period.<sup>28</sup>

### *Edinburgh Postnatal Depression Scale (EPDS)*

The Edinburgh Postnatal Depression Scale (EPDS) is a valuable and efficient way to identify patients at risk for peripartum depression. The EPDS aims to screen for the risk of PPD in women. The EPDS is easy to administer and a proven effective and reliable screening tool. The scoring tool has 10 questions on a 4 point Likert scale. Women with a score above 13 are likely to be suffering from a depressive illness of varying severity. The scale screens for the previous weeks' impressions. As per the instructions of the EPDS, the mother is asked to check a response closest to her feelings. The mother should complete the scale herself, unless she has limited English proficiency or has difficulty with reading. The scale is available in other languages. The scale has internal consistency at a level of 0.83 and can be conducted during pregnancy, immediately postpartum, at a postpartum health visit, and at a well-child visit.

### *Who Can Screen?*

Because the EPDS does not have to be administered but only completed by the mother, the requirements for the physician, nurse or other obstetrical care staff should be minimal. Most mothers complete the scale without difficulty in less than five minutes. The validation study showed mothers who scored above a threshold of 92.3 percent were likely to be suffering from a depressive illness of varying severity.

### *When to Screen?*

According to the American Psychological Association, conducting the screening in the postpartum period is too late. Preconception screening and intervention is ideal. Prenatal mental health intervention is essential.

#### Prenatal Screening

There are higher rates of depression during weeks 18-32 of pregnancy than there are in the postpartum period. Twenty-three percent of women are diagnosed with PPD during the pregnancy.<sup>29</sup> There are multiple predictors of PPD including prenatal depression with an increased rate of PPD among teenagers (ages 14-18).

#### Postpartum (6 Week Visit)

ACOG recommends comprehensive postpartum visits including a full assessment of physical, social and psychological well-being including a PPD screening.<sup>30,31</sup>

#### Prior to Hospital Discharge

To ensure the EPDS is conducted, ACOG recommends to reimburse providers for postpartum screening prior to discharge from the hospital or other birth setting. The American Congress of Obstetricians and Gynecologists recommends postpartum well-woman checks and a comprehensive postpartum visit within the first six weeks after birth;<sup>32</sup> however, the same article states that as many as 40 percent of women do not attend a postpartum visit.

#### At Well-Child Visits

The American Academy of Pediatrics recommends the use of screenings as part of a well-child visit,<sup>33</sup> and the majority of pediatricians concur that screening for PPD is in the scope of their practice.<sup>34</sup> The primary care provider (PCP) has a role in identifying maternal depression for two key reasons. First, the PCP may be the first provider to see the mother and the infant.<sup>35</sup> Second, aiding in identifying PPD can prevent adverse outcomes for the infant, the mother, and the family.<sup>36</sup>

### **Approaches from Other States**

Many states have enacted laws and created programs to increase provider and member awareness. For example, Illinois enacted the Postpartum Mood Disorders Prevention Act which calls for early screening of PPD by providers. Through contracts with the managed care organizations (MCOs), Illinois requires prenatal and postpartum depression screening using an approved validated, standardized tool, referral, and treatment.<sup>37</sup> Additionally, MCOs are required to complete ongoing monitoring and tracking for enrollees. Illinois also

has a related state law requiring women and their families to be educated about perinatal mental health disorders in prenatal and labor and delivery settings and women to be offered an assessment questionnaire in prenatal, postnatal, and pediatric care settings.<sup>38</sup>

In Iowa, the Department of Public Health, through the Iowa Perinatal Depression Project, has expanded screening, early identification, and effective treatment referrals for perinatal depression. The state also produced a pocket guide for health care professionals, which includes information on treatment, coding, and billing. Similarly, the Kentucky Health Access Nurturing Development Services (H.A.N.D.S.) Reach Out about Perinatal Depression Project, housed in the Kentucky Department of Public Health, is increasing awareness among health care providers and the general public about perinatal depression through a home visiting program promoting a supportive and healthy environment for mothers and their newborns.<sup>39</sup>

Minnesota passed a Postpartum Depression Education & Information Bill in 2006 requiring all providers of prenatal care to have information about PPD available to pregnant women and their families, and hospitals and other health care facilities to provide new mothers and their families with written information about PPD. The bill included both statutory requirements and also best-practice guidelines for where and when information should be offered.

In Illinois, if women are screened by a provider during their infant's well-child visit, the screening can be reimbursed through the infant's Medicaid coverage. Medicaid programs in Colorado, Minnesota, North Dakota and Virginia also reimburse for these screenings under the child's Medicaid ID number.<sup>40</sup> Minnesota and North Dakota permit up to three maternal screenings under the age of one, Illinois allows for unlimited screenings through age one, and Virginia allows for screenings through age two.<sup>41</sup>

## **Recommendations for Texas**

### *Educate Providers, Members, and Public*

The state should consider formalizing a state-approved PPD curriculum and require MCOs to provide this educational information to providers and recommend physicians incorporate this toolkit into their practices. Texas should also utilize other avenues such as websites and the Texas Medicaid Healthcare Partnership to encourage physician use of these materials.

The state should also consider requiring MCOs to include educational materials in welcome packets to pregnant members and in post-delivery letters to new mothers.

### *Establish State Referral Resources*

Texas should consider setting up a provider and consumer website providing referral information and identifying mental health providers. New Jersey passed the Postpartum Depression Law in 2006 and is known for being the first in the United States to require healthcare providers/facilities to screen women who have recently given birth for PPD and to educate women and families. A budget of \$4.5 million was provided for a comprehensive program, including the establishment of a statewide perinatal mental health referral network. The program is called “Speak Up When You’re Down.”

### *Increasing Postpartum Depression Services Provided by LMHAs*

Under current practice, many instances of PPD are not appropriately referred to LMHAs. Referrals are often sent as a PPD diagnosis and not under the broader diagnosis of Major Depressive Disorder, which is a diagnosis for priority. Additionally, referrals need to occur prior to delivery. Since a woman's Medicaid coverage ends 60 days postpartum, it is important referrals take place prior to coverage ending. LMHAs cannot place a woman who receives Medicaid on the waitlist for services, so these women are able to access services immediately. By referring the woman to the LMHA while she has coverage, providers can help ensure the woman will be seen to receive treatment.

### *Development of Reimbursement Strategies that Incentivize Screening and Treatment*

The state should also consider adoption of standards which encourage MCOs to develop innovative reimbursement structures that incentivize screening and treatment for PPD among providers. If constructed properly, the establishment of mechanisms such as global obstetric packages have the potential to foster the appropriate and timely provision of screening and treatment as a part of the comprehensive array of services offered to women during pregnancy and throughout the postpartum period.

While treatment of PPD has been shown to improve patient outcomes, substantial evidence exists to demonstrate screening and diagnosis alone do not improve outcomes for affected women unless coupled with effective treatment.<sup>42</sup> HHSC anticipates the auto-enrollment from MPW to HTW to improve outcomes for women who are diagnosed with PPD because it allows a woman to continue to receive care after MPW benefits have terminated. Over the next biennium, HHSC will monitor the data closely on how the increase in PPD screening and treatment impacts maternal health.

## CONCLUSION

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Postpartum Depression (PPD), although an important behavioral risk factor impacting families, appears to be significantly underreported among Medicaid clients when compared to state estimates from other sources (e.g., the Texas Pregnancy Risk Assessment Monitoring System [PRAMS]). Compared to PPD rates from the PRAMS survey, Medicaid PPD rates are 1.7 percent (3,533 out of 212,809 Medicaid paid births). This rate is 80 to 90 percent lower than the PRAMS estimate of 16.9 percent and approximately 85 percent lower than the national average of 15 percent. This may be due, in part, because:

- PRAMS data are retrospective self-reported survey data which extend beyond the Medicaid eligibility period,
- Medicaid rates are based on medically diagnosed conditions reported from claims and encounters data, and
- Most Medicaid based enumeration of PPD or other DMD cease at the end of the woman's two month postpartum eligibility period.

Over 50 percent of identified PPD among Medicaid women was identified in the first few days after delivery. Other, non-PPD diagnosed mental disorders (DMDs) are diagnosed at a consistent rate before and after delivery (approximately 180 cases per week). A total of 19,724 new mothers received a diagnosis of depression or PPD during pregnancy and/or after delivery, representing 9.3 percent of the 212,809 women who gave birth in SFY 2014.

Approximately \$14 million (All Funds) were spent annually in Medicaid on all mental disorders (including PPD) during pregnancy and throughout the mother's two month postpartum eligibility period. One quarter of that amount was spent on PPD.

The increase in the screening and treatment for PPD through the MPW, CHIP Perinatal, HTW, and FP programs will improve maternal health. While substantial improvements were made to streamline the coordination of care and continuity of services for women with PPD during 2016, HHSC and DSHS will continue to work with providers across the state.

## **APPENDIX: METHODS AND DATA SOURCES**

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The data for this analysis come from (1) Delivery Supplemental Payment (DSP) data files which contain the deliveries paid by Medicaid; and (2) Texas Medicaid & Healthcare Partnership (TMHP) claims and encounters datasets which provide delivery and diagnostic information of women who have given birth, and (3) Texas Department of State Health (DSHS) Mental Health data warehouse, Local Mental Health Authority encounter data.

The Medicaid IDs of women who have given birth are obtained from DSP for each of the state fiscal years under the study (SFY 2014 is the most current year of data available), and then matched to the TMHP claims and encounters data records and DSHS's MHSA mental health database files. For the resulting matched data records, services and diagnoses are obtained. This analysis contains women who were diagnosed with depressive mental disorder (DMD) or postpartum depression (PPD) during pregnancy and/or after giving birth, more specifically, for a period ranging between 220 days prior to and up to 12 months after delivery. Because the "From Date of Service" is at the header level of claims or encounters for this study, the "post" delivery diagnosis is defined as the first PPD or DMD diagnosis that occurs 2 days before the delivery date, while the diagnosis that occurs prior to that date is considered as "prior to" delivery diagnosis. The "week" category in Table 1 and Table 2 indicates the time during pregnancy or after delivery when a client was first diagnosed with a PPD or DMD condition.

The PPD or DMD condition is counted based on any-listed diagnosis codes, whereas the sum of payments is based on the primary diagnoses. The identification of the DMD condition for clients obtained from the DSHS database is based on the primary diagnoses. The DSHS database provides services and diagnoses information for 104 clients who gave birth in SFY 2014. No payment information for the services is obtained.

PPD diagnoses (648.xx; excluding 648.43) have been grouped together as a single PPD diagnosis category. All other diagnosed mental disorders which were coded during pregnancy and after birth, but not categorized as PPD (see Table A1), have been identified as other Diagnosed Mental Disorders (DMD) and used for comparisons in this study. Women with mental health conditions, including PPD, no longer eligible for Medicaid services (i.e., their two month postpartum eligibility has been completed) cannot be enumerated. However, women qualifying for other Medicaid services (e.g., disability) will be included in this analysis. See Table A1 for a classification of PPD and DMD diagnoses.

Individuals were enumerated and costs derived in the following manner:

1. Count: Individuals identified with PPD, DMD, or both conditions are based on the presence of a valid diagnosis (see Table A1) on any of the 25 diagnosis (DX) data fields; that is, a person is enumerated with the condition if any of the DX fields contains a PPD or DMD diagnosis. An individual with only a PPD diagnosis is enumerated as having PPD; an individual with only a DMD diagnosis is

- enumerated as having DMD. If both diagnoses are present on a single claim or encounter, the individual is counted as having both conditions present. An individual's diagnosis may change between visits.
2. Clinic payment: The PPD or DMD condition is based on the primary DX field only. If a person's first visit lists a PPD DX, the cost associated with the record of this visit goes to the total cost for the PPD condition category. If the person's next visit lists a DMD DX, the cost associated with the 2<sup>nd</sup> visit goes to the total cost for the DMD condition. In this case, we can separate costs for PPD or DMD, because the costs are associated with the particular condition of the primary DX for that particular visit.
  3. Drug cost: The drug RX and costs are not associated with any DX, so costs cannot be split by diagnosis for an individual even if this person is diagnosed with both PPD and DMD conditions according to the clinic payment file. In this case, the drug cost is attributed to the total for PPD.

### *PRAMS*

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a surveillance system designed to monitor maternal attitudes and behaviors before, during, and after pregnancy. Conducted in partnership with the Centers for Disease Control and Prevention (CDC) and the Texas Department of State Health Services (DSHS), Texas PRAMS is a population-based assessment that monitors the health and behaviors of new mothers in Texas.

Of the 2,308 mothers sampled in 2013, 1,241 completed a survey representing a weighted response rate of 55 percent. Of the 1,578 mothers sampled in 2012, 892 completed a survey representing a weighted response rate of 59 percent. Women who are selected for PRAMS are contacted through the mail when their infants are approximately 60 to 180 days old. They receive a letter that introduces the PRAMS survey and encourages their participation. They are notified they will be contacted through follow-up mailings including a copy of the PRAMS survey. Women who do not respond receive two subsequent mailings. Women who do not return the survey through the mail are moved into the telephone phase of data collection. Women are called and encouraged to complete the survey over the phone. The data collection via mail and phone ends approximately 100 days after the introductory letter that introduces the PRAMS survey and encourages their participation.

The women who completed the survey are representative of all Texas residents who had a live birth in 2012-2013. The 2012-2013 PRAMS data sets were combined, and contained 2,133 women who completed the survey. Of those 2,133 women who completed the survey, 1,008 had their delivery paid by Medicaid (as reported on the birth certificate). These 1,008 women who completed the survey represent 175,577 Texas residents on Medicaid who gave birth to a live infant in 2012, and 173,111 Texas residents on Medicaid who gave birth to a live infant in 2013.

The PRAMS survey questions used by CDC to calculate postpartum depression rates are:

**73. *Since your new baby was born, how often have you felt down, depressed, or hopeless?***

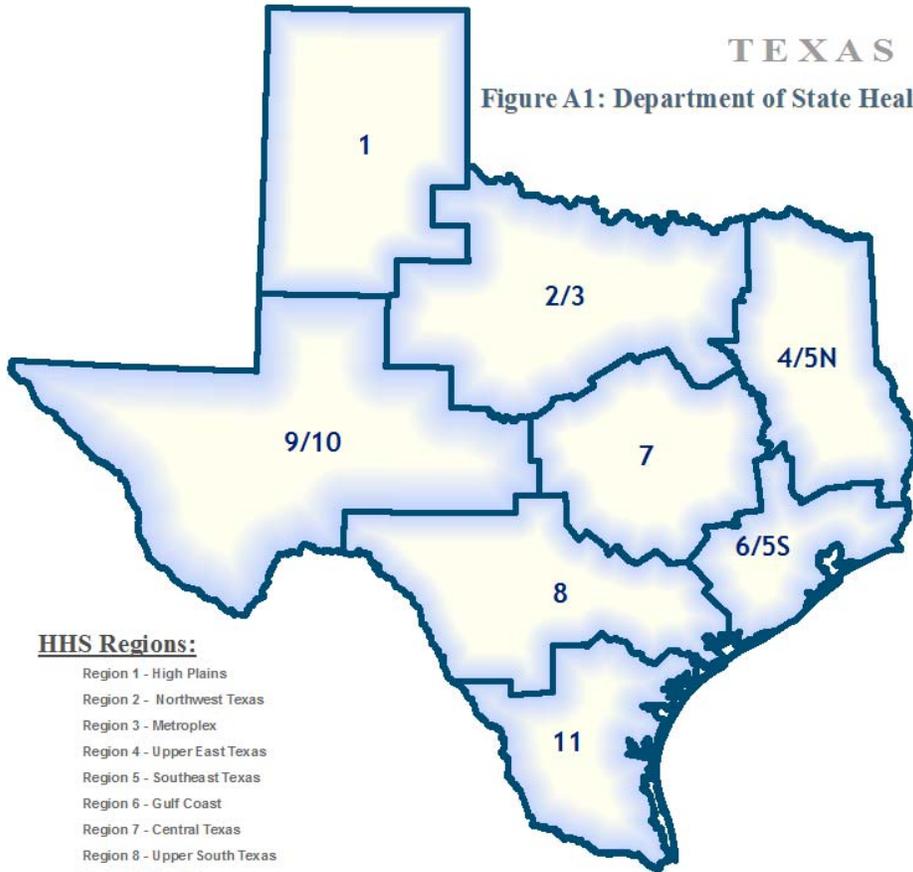
- Always
- Often
- Sometimes
- Rarely
- Never

**74. *Since your new baby was born, how often have you had little interest or little pleasure in doing things?***

- Always
- Often
- Sometimes
- Rarely
- Never

# TEXAS

Figure A1: Department of State Health Services Regions

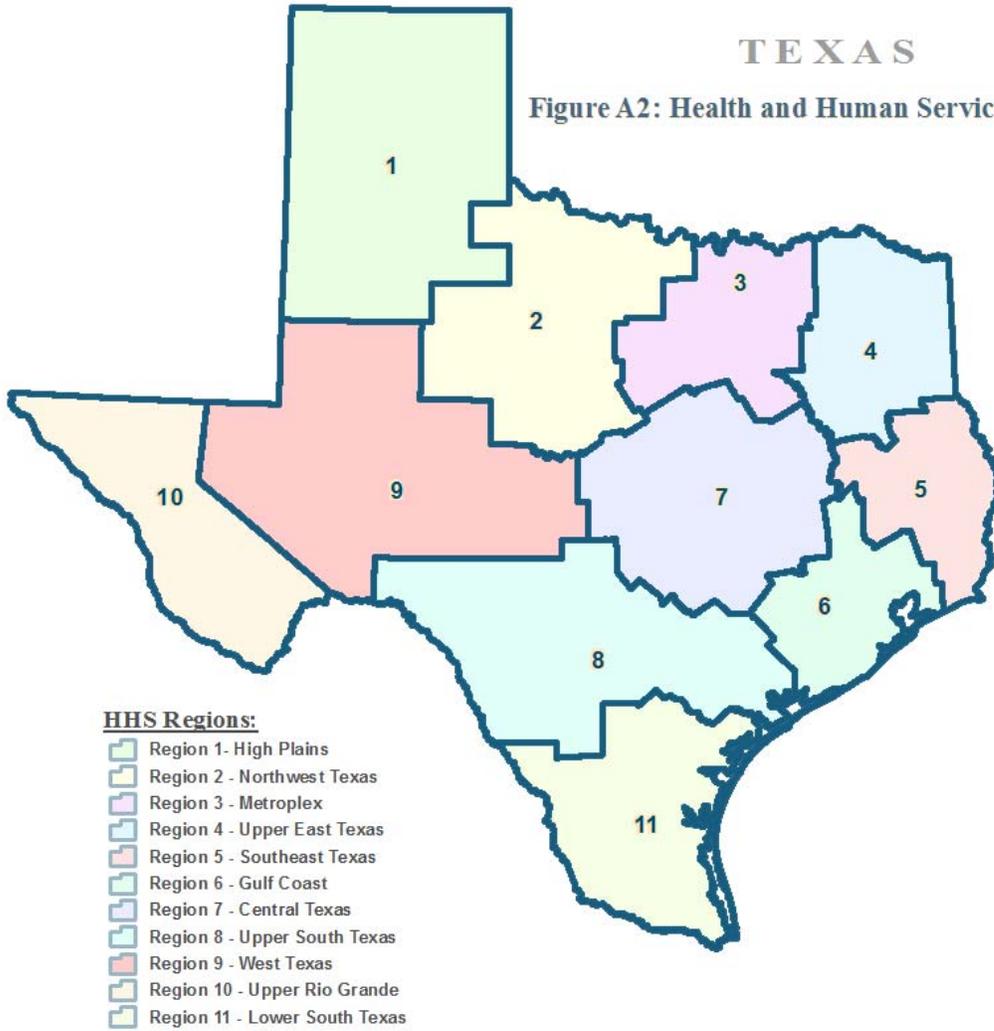


**HHS Regions:**

- Region 1 - High Plains
- Region 2 - Northwest Texas
- Region 3 - Metroplex
- Region 4 - Upper East Texas
- Region 5 - Southeast Texas
- Region 6 - Gulf Coast
- Region 7 - Central Texas
- Region 8 - Upper South Texas
- Region 9 - West Texas
- Region 10 - Upper Rio Grande
- Region 11 - Lower South Texas

# TEXAS

Figure A2: Health and Human Services Regions



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- <sup>15</sup> AHQP Claims Universe, Enc\_Best Picture Universe, TMHP, and HHSC Medicaid 8-Month Eligible Files. Prepared by Strategic Decision Support, HHSC. July/August, 2016 (ny).
- <sup>16</sup> 2012-2013 Texas PRAMS, Department of State Health Services, Office of Program Decision Support
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- <sup>18</sup> "Postpartum Depression Screening: Importance, Methods, Barriers, and Recommendations for Practice". Gjerdingen, D. and Yawn, B., J. of the American Board of Family Medicine. Vol. 20 No. 3 pp 280-288. 2007.
- <sup>19</sup> Women surveyed by PRAMS are contacted between 60 to 180 days after delivery. Women participating in the survey may have up to 280 days after delivery to respond and complete the survey.
- <sup>20</sup> The Centers for Medicare and Medicaid Services provide MCOs the authority to provide mental health services in an inpatient psychiatric facility in lieu of an acute care facility when certain conditions are met. The service must be medically appropriate, cost effective, and voluntary.

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<sup>21</sup> Texas prioritizes services to adults with diagnoses such as schizophrenia, bipolar disorder, major depression, post-traumatic stress disorder, schizoaffective disorder, obsessive-compulsive disorder, anxiety disorder, attention deficit disorder, delusional disorder, and eating disorders who are experiencing significant functional impairment due to a mental health disorder that requires crisis resolution or ongoing, long-term support and treatment. Texas prioritizes services to children ages 3 through 17 with serious emotional disturbance (excluding a single diagnosis or substance use disorder, intellectual or developmental disability, or autism spectrum disorder) who have a serious functional impairment or who: 1) are at risk of disruption of a preferred living or child care environment due to psychiatric symptoms, or 2) are enrolled in special education because of serious emotional disturbance. Source: [Texas Health and Safety Code, Section 533.0354](#).

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<sup>36</sup> *Id.*

<sup>37</sup> Postpartum Support International, <http://www.postpartum.net/professionals/legislation/>

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> States Try Innovative Approaches to Identify and Treat Maternal Depression, Sophia Duong, November 17, 2014.

<sup>41</sup> States Try Innovative Approaches to Identify and Treat Maternal Depression, Sophia Duong, November 17, 2014.

<sup>42</sup> Screening for perinatal depression. (2015). *American College of Obstetricians and Gynecologists Committee Opinion*, 630.

**Table A1: PPD or Mental Disorder Diagnostic Codes (ICD 9 CM) Included in This Analysis**

**Postpartum Depression (PPD) Diagnoses**

ICD 9 CM Code	Diagnostic Description
648.40	MENTAL DISORDER PREGNANCY - UNSPECIFIED
648.41	MENTAL DISORDER DELIVERY
648.42	MENTAL DISORDER DELIVERY WITH MENTION OF POSTPARTUM COMPLICATION
648.44	MENTAL DISORDER-POSTPARTUM

**Other (non-PPD) Diagnosed Mental Disorders**

ICD 9 CM Code	Diagnostic Description
648.43	MENTAL DISORDER-ANTEPARTUM
296.3	MAJOR DEPRESSIVE DISORDER RECURRENT EPISODE
296.5	BAD, DEPRESSED
296.6	BAD, MIXED
296.7	BIPOLAR I DISORDER, MOST RECENT EPISODE UNSPECIFIED
296.8	MANIC-DEPRESSIVE NEC/NOS
298.0	DEPRESSIVE TYPE PSYCH
296.20	DEPRESS PSYCHOSIS-UNSPECIFIED
296.21	DEPRESS PSYCHOSIS-MILD
296.22	DEPRESSIVE PSYCHOSIS-MOD
296.23	DEPRESS PSYCHOSIS-SEVERE
296.24	DEPR PSYCHOS-SEV W PSYCH
296.25	DEPR PSYCHOS-PART REMISSION
296.26	DEPR PSYCHOS-FULL REMISS
296.30	RECURR DEPR PSYCHOS-UNSPECIFIED
296.31	RECURR DEPR PSYCHOS-MILD
296.32	RECURR DEPR PSYCHOS-MOD
296.33	RECUR DEPR PSYCH-SEVERE
296.34	REC DEPR PSYCH-PSYCHOTIC
296.35	RECUR DEPR PSYC-PART REM
296.36	RECUR DEPR PSYC-FULL REM
296.50	BIPOLAR I DISORDER, MOST RECENT EPISODE DEPRESSED, UNSPECIFIED
296.51	BIPOLAR I DISORDER, MOST RECENT EPISODE DEPRESSED, MILD
296.52	BIPOLAR I DISORDER, MOST RECENT EPISODE DEPRESSED, MODERATE
296.53	BIPOLAR I DISORDER, MOST RECENT EPISODE DEPRESSED, SEV W/OUT PSY
296.54	BIPOLAR I DISORDER, MOST RECENT EPISODE DEPRESSED, SEVERE W/ PSY
296.55	BIPOLAR I DISORDER, MOST RECENT EPISODE DEPRESSED, IN PARTIAL REM
296.56	BIPOLAR I DISORDER, MOST RECENT EPISODE DEPRESSED, IN FULL REMISS
296.60	BIPOLAR I DISORDER, MOST RECENT EPISODE MIXED, UNSPECIFIED
296.61	BIPOLAR I DISORDER, MOST RECENT EPISODE MIXED, MILD
296.62	BIPOLAR I DISORDER, MOST RECENT EPISODE MIXED, MODERATE
296.63	BIPOLAR I DISORDER, MOST RECENT EPISODE MIXED, SEVERE W/OUT PSYCH
296.64	BIPOLAR I DISORDER, MOST RECENT EPISODE MIXED, SEVERE W/ PSYCHO
296.65	BIPOLAR I DISORDER, MOST RECENT EPISODE MIXED, IN PARTIAL REMISS
296.66	BIPOLAR I DISORDER, MOST RECENT EPISODE MIXED, IN FULL REMISSION
296.82	ATYPICAL DEPRESS DISORD
296.89	BIPOLAR II DISORDER
300.4	DYSTHYMIC DISORDER
301.12	CHR DEPRESSIVE DISORDER
309.0	ADJUSTMENT DISORDER WITH DEPRESSED MOOD
309.28	ADJUSTMENT DISORDER WITH MIXED ANXIETY AND DEPRESSED MOOD
311	DEPRESSIVE DISORDER NEC

**Table A2: Distribution of Medicaid Clients with a Mental Disorder DX by Texas Region, SFY2014**

Region++	All Clients	PPD DX Only		DMD DX Only		Both PPD and DMD DX		Clients with any DX of Mental Disorder (PPD or DMD)		PRAMS 2012-2013 Estimates of PPD by Public Health Region among Women on Medicaid			
		Count	Percent	Count	Percent	Count	Percent	Count	Percent	DSHS Region+	PPD	95% SE CI	
1	7,163	258	3.6	443	6.2	304	4.2	1,005	14.0				
2	3,851	116	3.0	428	11.1	124	3.2	668	17.3	2/3	16.5	11.4	21.7
3	51,356	871	1.7	2,414	4.7	1,346	2.6	4,631	9.0				
4	9,092	320	3.5	688	7.6	278	3.1	1,286	14.1	4/5N	18.6	6.6	30.6
5	5,949	131	2.2	471	7.9	191	3.2	793	13.3				
6	51,288	707	1.4	2,003	3.9	1,162	2.3	3,872	7.5	6/5S	16.7	11.2	22.2
7	19,507	380	1.9	1,147	5.9	902	4.6	2,429	12.5	7	15.5	6.2	24.8
8	21,712	338	1.6	1,418	6.5	551	2.5	2,307	10.6	8	16.8	7.5	26
9	5,358	100	1.9	330	6.2	98	1.8	528	9.9	1/9/10	19.4	9.0	29.8
10	8,232	59	0.7	262	3.2	79	1.0	400	4.9				
11	29,211	252	0.9	1,281	4.4	257	0.9	1,790	6.1	11	16.7	5.9	27.4
Unknown	90	1	1.1	7	7.8	7	7.8	15	16.7				
<b>Total</b>	<b>212,809</b>	<b>3,533</b>	<b>1.7</b>	<b>10,892</b>	<b>5.1</b>	<b>5,299</b>	<b>2.5</b>	<b>19,724</b>	<b>9.3</b>		<b>16.9</b>	<b>14.0</b>	<b>19.9</b>

++ see Appendix Figure A2

+ see Appendix Figure A1

Prepared by HHSC SDS August 2016 (NY)

Data Sources 1. HHSC Delivery Supplemental Payment files

2. AHQP Claims Universe, Enc\_Best Picture Universe, TMHP

3. Texas Department of State Health (DSHS) MSHA mental health database files.

**Table A3: Number and Percent of Medicaid Clients Who Received PPD\*, DMD\*\* only, or Both PPD & DMD Diagnoses pre- or post Delivery in SFY2014#**

Week Before Delivery	PPD Only		DMD Only		Both	
	Count	Percent	Count	Percent	Count	Percent
28 to 31	5	2.0	1,086	16.1	436	14.8
13 to 27	66	26.7	3,338	49.5	1,384	47.0
0 to 12	176	71.3	2,317	34.4	1,126	38.2
<b>Total</b>	<b>247</b>	<b>100.0</b>	<b>6,741</b>	<b>100.0</b>	<b>2,946</b>	<b>100.0</b>

Week Post Delivery	PPD Only		DMD Only		Both	
	Count	Percent	Count	Percent	Count	Percent
0	1,865	56.8	174	4.2	1,481	62.9
1	158	4.8	154	3.7	97	4.1
2	188	5.7	151	3.6	101	4.3
3	182	5.5	178	4.3	103	4.4
4	153	4.7	188	4.5	94	4.0
5	147	4.5	186	4.5	92	3.9
6	207	6.3	226	5.4	99	4.2
7	103	3.1	211	5.1	50	2.1
8	63	1.9	192	4.6	36	1.5
9	40	1.2	155	3.7	23	1.0
10	36	1.1	119	2.9	16	0.7
11	19	0.6	99	2.4	15	0.6
12	9	0.3	52	1.3	8	0.3
13 up to 52	116	3.5	2,066	49.8	138	5.9
<b>Total</b>	<b>3,286</b>	<b>100.0</b>	<b>4,151</b>	<b>100.0</b>	<b>2,353</b>	<b>100.0</b>

<b>Grand Total Pre- and Post-Natal DX</b>	<b>3,533</b>	<b>10,892</b>	<b>5,299</b>
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\* Post partum depression (PPD)

\*\* Diagnosed mental disorder (DMD) excluding PPD

# see Appendix 1 for a list of diagnoses used to determine PPD and DMD

Prepared by HHSC SDS August 2016 (NY)

Data Sources:

1. HHSC Delivery Supplemental Payment files
2. AHQP Claims Universe, Enc\_Best Picture Universe, TMHP
3. Texas Department of State Health (DSHS) MHSA mental health database files

**Table A4: Change between the First and Last Diagnosed Mental Disorder(s) for Medicaid Clients Diagnosed with both PPD\* & DMD\*\* prior to or post Delivery during SFY 2014**

<b>DX Change</b>	<b>Count</b>	<b>Percent</b>
Both <b>PPD</b> & DMD	1,356	25.6%
DMD -> Both <b>PPD</b> & DMD	746	14.1%
PPD -> Both <b>PPD</b> & DMD	49	0.9%
PPD -> DMD -> <b>PPD</b>	35	0.7%
Both PPD & DMD -> <b>PPD</b>	95	1.8%
DMD -> <b>PPD</b>	1,096	20.7%
Both PPD & DMD -> DMD	351	6.6%
PPD -> DMD	572	10.8%
DMD -> PPD -> DMD	999	18.9%
<b>Total</b>	<b>5,299</b>	<b>100.0%</b>

Note: 1. A total of 19,724 new mothers received a diagnosis of depression or PPD during pregnancy and/or after delivery, representing 9.3% of 212,809 new mothers who gave birth in SFY 2014.

2. The time of the diagnosis is limited to -220 to 365 days prior to and post delivery. There were 9,934 new mothers diagnosed 2 days or more before delivery, and 9,790 were diagnosed within 2 days after delivery.

\* Post partum depression (PPD)

\*\* Diagnosed mental disorder (DMD) excluding PPD

Prepared by HHSC SDS August 2016 (NY)

Data Sources:

1. HHSC Delivery Supplemental Payment files
2. AHQP Claims Universe, Enc\_Best Picture Universe, TMHP
3. Texas Department of State Health (DSHS) MHSA mental health database files

**Table A5: Distribution of Medicaid Client Depression Diagnosis Costs\* by Texas Region, SFY2014**

Region++	Postpartum Depression Costs			Other Diagnosed Mental Disorder Costs			Total Costs		
	Clinical	Drug	Total	Clinical	Drug	Total	Clinical	Drug	Total
1	\$138,222	\$39,282	\$177,504	\$317,540	\$92,175	\$409,715	\$455,762	\$131,457	\$587,219
2	\$56,633	\$11,928	\$68,561	\$252,719	\$154,236	\$406,955	\$309,351	\$166,164	\$475,515
3	\$442,669	\$99,092	\$541,761	\$1,197,207	\$678,843	\$1,876,050	\$1,639,877	\$777,935	\$2,417,812
4	\$137,738	\$65,714	\$203,452	\$494,621	\$366,165	\$860,786	\$632,360	\$431,879	\$1,064,239
5	\$165,764	\$35,661	\$201,425	\$236,384	\$255,920	\$492,304	\$402,148	\$291,581	\$693,729
6	\$457,262	\$120,811	\$578,073	\$1,449,933	\$937,253	\$2,387,186	\$1,907,194	\$1,058,064	\$2,965,258
7	\$314,403	\$98,676	\$413,079	\$694,297	\$590,610	\$1,284,907	\$1,008,700	\$689,286	\$1,697,986
8	\$210,930	\$92,309	\$303,239	\$894,335	\$643,070	\$1,537,405	\$1,105,265	\$735,379	\$1,840,644
9	\$52,668	\$8,727	\$61,395	\$103,666	\$67,408	\$171,074	\$156,334	\$76,135	\$232,469
10	\$37,917	\$9,863	\$47,780	\$281,186	\$142,208	\$423,394	\$319,104	\$152,071	\$471,175
11	\$103,937	\$25,344	\$129,281	\$820,086	\$596,124	\$1,416,210	\$924,022	\$621,468	\$1,545,490
99	\$8,892	\$16,188	\$25,080	\$6,498	\$27,398	\$33,896	\$15,390	\$43,586	\$58,976
Total	<b>\$2,127,035</b>	<b>\$623,595</b>	<b>\$2,750,630</b>	<b>\$6,748,471</b>	<b>\$4,551,410</b>	<b>\$11,299,881</b>	<b>\$8,875,507</b>	<b>\$5,175,005</b>	<b>\$14,050,512</b>
r <sup>2</sup> (rate by costs)	0.00	0.03	0.01	0.23	0.17	0.21	0.03	0.15	0.13

++ see Appendix Figure A2

\* All funds

Prepared by HHSC SDS August 2016 (NY)

- Data Sources:
1. HHSC Delivery Supplemental Payment files
  2. AHQP Claims Universe, Enc\_Best Picture Universe, TMHP
  3. Texas Department of State Health (DSHS) MHSA mental health database files
  4. HHSC Vendor Drug Files