# Symptoms of Depression During and After Pregnancy

MIHA DATA BRIEF

Summer 2018

## KEY POINTS

One in five California women who recently gave birth experience symptoms of depression during or after pregnancy, according to the MIHA survey. That translates to about 100,000 women a year.

All women are at risk for symptoms of perinatal depression; however, Black or Latina women, women who have low incomes or those who have experienced hardships in their childhood or during pregnancy are at heightened risk of having symptoms of depression.

Depression during pregnancy is likely to lead to depression after the baby is born and is associated with serious risks to the mother and infant. Though not all women with symptoms of depression will be diagnosed with clinical depression, screening and appropriate care should be provided during prenatal care.

## BACKGROUND

Emotional well-being during and after pregnancy is central to women's health, and to their infants' development. Depression during or after pregnancy is one of several perinatal mood and anxiety disorders that commonly affect women during this period. Perinatal depression is characterized by intense feelings of sadness, anxiety or despair during or after pregnancy that lasts two weeks or longer and prevents women from doing their daily tasks. It can occur at any time from conception through one year postpartum.[1] As a serious pregnancy complication requiring treatment, depression differs from the "baby blues," which are common minor changes in mood that occur in the first few days after childbirth.[1]

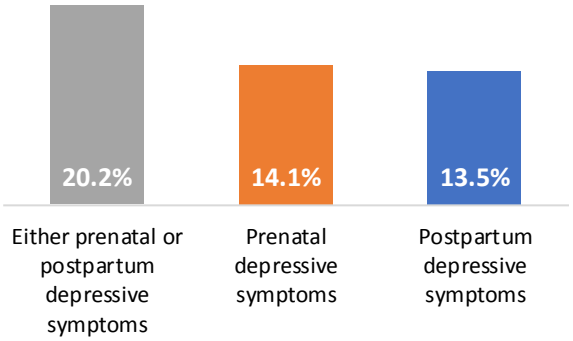
Untreated depression can lead to negative outcomes for both mother and baby. Depression that occurs during pregnancy increases the risk of preeclampsia, low birth weight and premature delivery.[2-5] Depression after the baby is born can negatively impact women's breastfeeding practices and ability to bond with their infants.[6-7] Depression at any point during the perinatal period increases the risk of long term cognitive and emotional development problems in children.[3,8] Among mothers, it increases the risk of chronic depression and suicide once the baby is born.[9-10]

With the appropriate help, most women can experience full recovery.[11] National guidelines recommend that women receive screening for depression throughout their prenatal and postpartum care using validated tools.[12] Guidelines emphasize that all women in need of care should have access to services that are affordable, culturally and linguistically appropriate, and that acknowledge the history of trauma common among women with depression.[12-15]

### How are California women fairing?

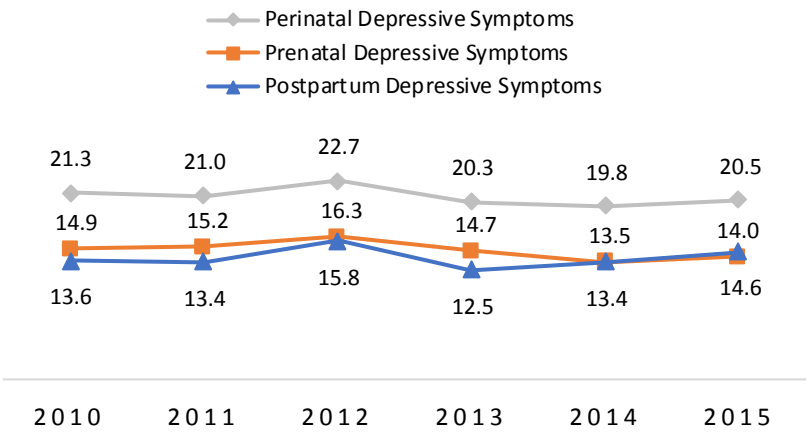
According to the Maternal and Infant Health Assessment (MIHA) survey, one in five California women with a recent birth reported symptoms during or after pregnancy that could be consistent with perinatal depression. That's approximately 100,000 women per year. Further, depressive symptoms were at least as common during pregnancy (14.1 percent) as they were postpartum (13.5 percent).

Symptoms of depression among California



## SYMPTOMS OF DEPRESSION OVER TIME IN CALIFORNIA

### Percentage of women with symptoms of depression by year, 2010-2015




Maternal symptoms of depression have remained stable in California since 2010. In order to reduce the percent of women who experience perinatal depressive symptoms in the future, attention should be focused on primary prevention activities.

### DEFINITIONS

In this MIHA Data Brief, **"symptoms of depression"** (or "depressive symptoms") are defined as a period of two weeks or longer when a woman self-reported experiencing two sets of symptoms: a) feeling sad, empty or depressed for most of the day and b) loss of interest in most things that she usually enjoyed (like work, hobbies, or personal relationships). Depressive symptoms were measured prenatally (during pregnancy) and postpartum (from birth until she completed the survey, anywhere from two to nine months after delivery). **"Perinatal depressive symptoms"** refer to symptoms of depression experienced during pregnancy, during postpartum or during both time periods.

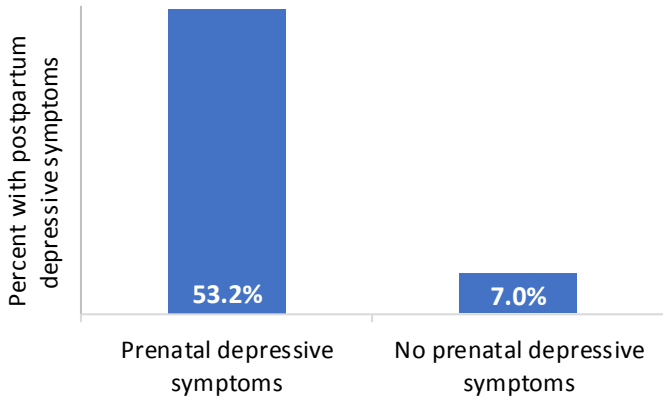
Questions assessing symptoms of depression were adapted from the two-item Patient Health Questionnaire-2. Research supports the use of this two-item screener to identify pregnant women who would likely screen positive using a longer scale and go on to receive a clinical diagnosis.[16-17] This measure does not provide an estimate of depression diagnoses. A clinical diagnosis of depression requires at least five of nine symptoms that impair ability to function over a period of at least two weeks.[18] Perinatal depression is one of many **perinatal mood and anxiety disorders** that also include anxiety, bipolar disorder, obsessive compulsive disorder and posttraumatic stress disorder.

## RELATIONSHIP BETWEEN PRENATAL AND POSTPARTUM SYMPTOMS OF DEPRESSION

While depression during pregnancy receives less attention, it's a leading risk factor for postpartum depression.[19-20] Among women who experienced prenatal symptoms of depression, 53.2 percent went on to report postpartum symptoms. In contrast, only 7.0 percent of women with no symptoms of depression in the prenatal period experienced them postpartum.

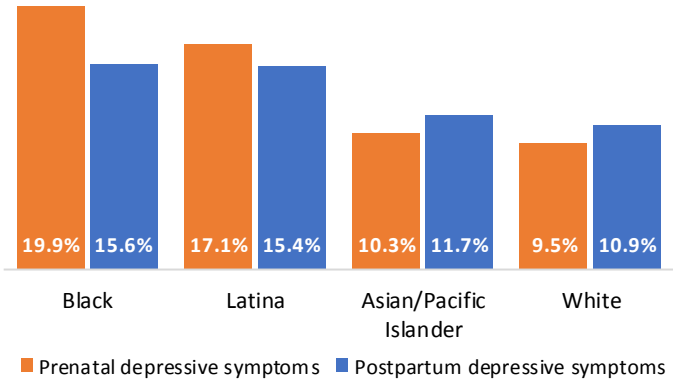
In order to have the best chance of improving outcomes for the mother and infant, efforts to identify and intervene should begin with prenatal care, when women have increased contact with the healthcare system.[21-22] Routine screening and treatment that begins early in pregnancy can facilitate timely recognition of symptoms of depression and prevention of adverse outcomes.[21-22]

### Postpartum symptoms of depression by experience of prenatal depressive symptoms, 2013-2015



## RACIAL/ETHNIC DISPARITIES

### Symptoms of depression by race/ethnicity, 2013-2015




Black and Latina women experience the highest percentage of depressive symptoms of all racial/ethnic groups during both the prenatal and postpartum periods. Disparities are particularly evident for prenatal symptoms of depression, which are twice as common for Black (19.9 percent) and Latina (17.1 percent) women compared to White (9.5 percent) and Asian/Pacific Islander (10.3 percent) women.

Although depressive symptoms are most common among Black and Latina women, their use of maternal mental health care is lower than white women's.[23] Efforts to improve access to high quality, culturally responsive mental health services can ensure that more Black and Latina women receive the care they need.[24] Strategies should address the shortage of providers qualified to treat perinatal depression and the disjointed pathway from screening to treatment.[14]

***Women who are Black or Latina, or have low incomes or Medi-Cal for prenatal care are more likely to have prenatal and postpartum symptoms of depression. However, these women are less likely to receive the care they need.***

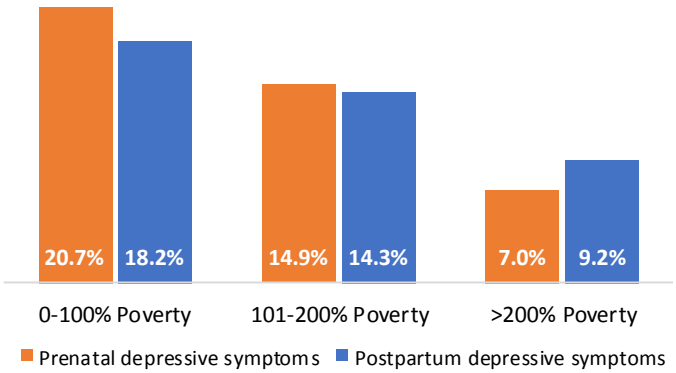
## DISPARITIES BY INCOME AND INSURANCE TYPE

Poverty and low income are well-documented risk factors for maternal mental health conditions.[25] In California, prenatal and postpartum symptoms of depression are highest among women with incomes below poverty (20.7 percent and 18.2 percent, respectively). Prevalence of depressive symptoms declines as income increases.

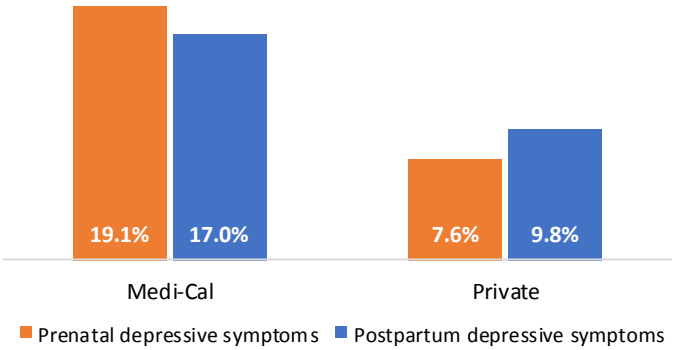
Women with incomes below 200 percent of the Federal Poverty Guideline ($24,250 for a family of four) account for well over half of the women giving birth in California.[26-27] Reducing barriers to mental health services for low-income women could positively impact a large segment of California's mothers and infants.

Women with Medi-Cal for prenatal care had significantly higher levels of depressive symptoms during and after pregnancy (19.1 percent prenatal, 17.0 percent postpartum) compared to women with private insurance (7.6 percent prenatal, 9.8 percent postpartum). About half of women giving birth in California have Medi-Cal for prenatal care due to the expanded income eligibility for pregnant women.[27-28] Medi-Cal coverage during pregnancy includes mental health care services,[29-30] offering an opportunity for low-income women to access care. This is particularly important for women who do not have coverage for mental health services before or after pregnancy.

### Symptoms of depression by income, 2013-2015




### Symptoms of depression by prenatal insurance type, 2013-2015



## CHILDHOOD HARDSHIPS AND STRESSORS DURING PREGNANCY

**Childhood hardships** are traumatic events that can disrupt family environments and result in toxic stress for children,[31] such as financial hardships, parental substance use, or foster care placement. (See Appendix B for a complete list of hardships included in the summary childhood hardships measure.) Adversity in childhood has been linked with adverse adult physical and mental health.[31]

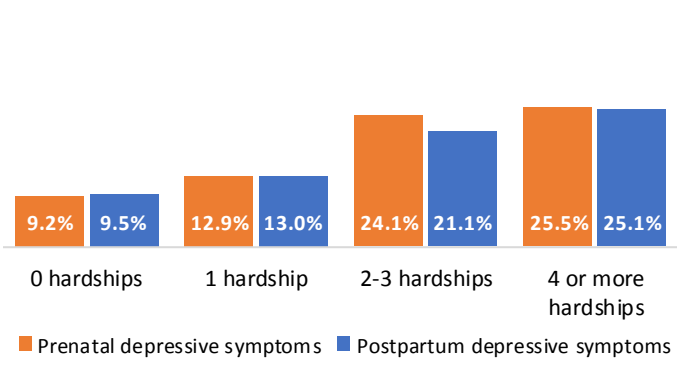
The effect of childhood hardships was cumulative among California women; as the number of childhood hardships increased, so did the percentage of women with depressive symptoms. Prenatal and postpartum symptoms of depression were lowest among women who experienced no childhood hardships (9.2 percent and 9.5 percent, respectively), and highest among women who experienced four or more childhood hardships (25.5 percent and 25.1 percent, respectively).

**Pregnancy stressors** are significant life events or conditions during pregnancy, such as intimate partner violence, lack of practical or social support, separation, housing insecurity, or job loss, that can lead to biological stress responses associated with depression.[3, 32-33] (See Appendix B for a complete list of stressors included in the summary measure of life stressors during pregnancy.)

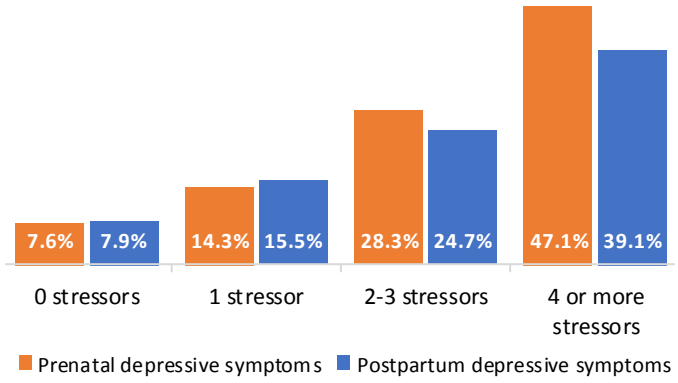
As the total number of stressors during pregnancy increases, the percentages of both prenatal and postpartum depressive symptoms increase as well. Among California women who had no stressors during pregnancy, symptoms of depression during both pregnancy (7.6 percent) and postpartum (7.9 percent) were relatively uncommon. In contrast, women with four or more stressors experienced very high percentages of depressive symptoms during pregnancy (47.1 percent) and postpartum (39.1 percent).

Given the high percentages of depressive symptoms among women with hardships during childhood and pregnancy, mental health services should promote recovery and resilience for women impacted by trauma.[15]

**Symptoms of depression by number of childhood hardships, 2013-2015**




**Symptoms of depression by number of pregnancy stressors, 2013-2015**




### STRIVING FOR EQUITY IN PERINATAL MENTAL HEALTH

The underlying causes of the mental health disparities identified in this Brief are multifaceted. For example, low income is a direct cause of several childhood and pregnancy stressors, such as homelessness and food insecurity, and can increase the risk of several others, such as intimate partner violence during pregnancy, through more complex pathways.[34] Institutional racism (the practices of social and political institutions that result in unfair treatment of Black, Latina and other minority groups) creates financial and traumatic life stressors and likely plays a role in explaining racial and ethnic disparities.[35] Interpersonal racism is an additional source of chronic stress for Black and Latina women, and has been linked to mental health conditions.[36-37] Achievement of emotional and mental well-being for all California women during and after their pregnancies requires action to address these upstream factors that result in worse outcomes for women with low incomes and women of color.

## COUNTY AND REGIONAL DIFFERENCES

There was substantial variation in prevalence of prenatal and postpartum symptoms of depression by county and by multi-county MIHA Region. For prenatal depressive symptoms, percentages ranged from a high of 20.2 percent in Stanislaus County to a low of 8.5 percent in San Mateo County. For postpartum depressive symptoms, the highest percentage was in San Joaquin County (18.8 percent) and the lowest was in Yolo County (9.8 percent).

Among MIHA Regions, the North/Mountain MIHA Region had the highest percentages of both prenatal (17.2 percent) and postpartum (17.1 percent) symptoms of depression, while the San Francisco Bay Area had the lowest percentages of both prenatal (12.2 percent) and postpartum depressive symptoms (11.6 percent).

See Appendix C for a table of prenatal, postpartum and perinatal depressive symptoms for the 35 counties with the largest numbers of births and for the MIHA regions.

***"A lot of this emotional stuff is not given enough credence. After delivery I was given surveys about postpartum depression, but I know a lot of women are experiencing that during pregnancy as well, and they're not really asking about that."*** - MIHA 2014 Respondent

## MCAH DIVISION EFFORTS TO ADDRESS PERINATAL DEPRESSION

As part of the Title V Maternal and Child Health Block Grant Strategic Plan, the California Department of Public Health MCAH Division has developed strategies to improve maternal mental health by raising awareness, developing resources, implementing screening and referral processes and enhancing collaboration. Over two thirds of Local MCAH Programs have prioritized action to improve maternal mental health systems of care. In addition, in 2015, the MCAH Division participated in a statewide Task Force to improve early identification and services for women with maternal mental health conditions.

Many MCAH Division programs screen for symptoms of depression using validated tools, and provide appropriate referrals and ancillary support for women in need of care. Also, programs tailor primary prevention and support activities to address the social factors that lead to poor mental health and promote the development of individual protective factors.

**Adolescent Family Life Program** case managers provide comprehensive support to expectant and parenting youth using a positive youth development approach. To enhance mental health and build resiliency, the program works to ensure basic needs are met, helps youth to create networks of support, and fosters coping and emotional regulation skills.

**The Black Infant Health Program** conducts group sessions with complementary case management that provide social support while helping women develop skills to reduce stress, enhance emotional well-being and develop life skills in a culturally affirming environment that honors the history of Black women.

**The California Home Visiting Program** funds home visiting models throughout the state that use a strengths-based approach to build positive parenting skills and enhance the mother-baby relationship. Home visitors tailor their efforts to each family's needs, addressing a range of issues, including financial struggles, familial relationships, housing instability and navigating the health care system. Services that directly address emotional well-being include support groups, socialization groups and mental health consultation.

**The Comprehensive Perinatal Services Program (CPSP)** is a Medi-Cal program that provides psychosocial, nutrition and health education services, in addition to obstetric care. CPSP providers screen for depressive symptoms throughout pregnancy and the postpartum period using validated tools or assessments and provide enhanced support to ensure that women in need of additional services are linked to a provider.

## METHODS

The Maternal and Infant Health Assessment (MIHA) is a statewide-representative survey of women with recent live births in California, conducted annually since 1999. The survey collects self-reported information about maternal and infant experiences and about maternal attitudes and behaviors before, during and shortly after pregnancy.

MIHA is a stratified random sample of English- or Spanish-speaking women. MIHA data are weighted to represent all women with a live birth in California, excluding women who were non-residents, were younger than 15 years old at delivery, had a multiple birth greater than triplets, or had a missing address on the birth certificate.

In this brief, data from MIHA 2013-2015 were combined, resulting in a statewide sample size of 20,762. The appendices includes confidence intervals and annual population estimates for all data presented. See the Technical Notes on the MIHA website (www.cdph.ca.gov/MIHA) for information on weighting, comparability to prior years and technical definitions.

MIHA is a collaboration between California's Maternal, Child and Adolescent Health (MCAH) and Women, Infants and Children (WIC) Divisions, and UC San Francisco's Center on Social Disparities in Health.

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# APPENDIX A: PRENATAL, POSTPARTUM AND PERINATAL SYMPTOMS OF DEPRESSION BY YEAR

| | Prenatal Symptoms of Depression | | | Postpartum Symptoms of Depression | | | Perinatal Symptoms of Depression | | |
|---|---|---|---|---|---|---|---|---|---|
| | Prevalence Estimate (%) | 95% Confidence Interval | Annual Population Estimate | Prevalence Estimate (%) | 95% Confidence Interval | Annual Population Estimate | Prevalence Estimate (%) | 95% Confidence Interval | Annual Population Estimate |
| **Year** | | | | | | | | | |
| 2010 | 14.9 | 13.4 - 16.3 | 74,200 | 13.6 | 12.1 - 15.1 | 67,900 | 21.3 | 19.6 - 23.1 | 106,300 |
| 2011 | 15.2 | 13.6 - 16.7 | 74,700 | 13.4 | 12.0 - 14.8 | 66,000 | 21.0 | 19.3 - 22.7 | 103,200 |
| 2012 | 16.3 | 14.7 - 17.9 | 80,500 | 15.8 | 14.2 - 17.3 | 77,700 | 22.7 | 20.9 - 24.5 | 112,000 |
| 2013 | 14.7 | 13.0 - 16.4 | 71,100 | 12.5 | 11.0 - 14.0 | 60,400 | 20.3 | 18.4 - 22.2 | 98,000 |
| 2014 | 13.5 | 11.9 - 15.1 | 66,700 | 13.4 | 11.8 - 15.1 | 66,100 | 19.8 | 17.9 - 21.7 | 97,100 |
| 2015 | 14.0 | 12.4 - 15.6 | 67,600 | 14.6 | 13.0 - 16.3 | 70,500 | 20.5 | 18.6 - 22.3 | 98,500 |

Notes: MIHA is an annual population-based survey of California resident women with a live birth. Prevalence estimate, 95% confidence interval and annual population estimate of women with symptoms of depression in a given year are weighted to represent all women with a live birth who resided in California in 2010-2015. See the Technical Notes for information on weighting, comparability to prior years and technical definitions. Visit the MIHA website at www.cdph.ca.gov/MIHA.

# APPENDIX B: PRENATAL, POSTPARTUM AND PERINATAL SYMPTOMS OF DEPRESSION BY MATERNAL CHARACTERISTICS AND EXPERIENCES, MIHA 2013-2015

| | Prenatal Symptoms of Depression | | | | Postpartum Symptoms of Depression | | | | Perinatal Symptoms of Depression | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevalence Estimate (%) | 95% Confidence Interval | | Annual Population Estimate | Prevalence Estimate (%) | 95% Confidence Interval | | Annual Population Estimate | Prevalence Estimate (%) | 95% Confidence Interval | | Annual Population Estimate |
| **Total** | 14.1 | 13.1 | 15.0 | 68,500 | 13.5 | 12.6 | 14.4 | 65,700 | 20.2 | 19.1 | 21.3 | 97,900 |
| **Maternal Characteristics** | | | | | | | | | | | | |
| **Race/Ethnicity** | | | | | | | | | | | | |
| Black | 19.9 | 16.8 | 23.0 | 5,400 | 15.6 | 13.0 | 18.2 | 4,200 | 24.7 | 21.3 | 28.1 | 6,600 |
| Latina | 17.1 | 15.6 | 18.7 | 40,100 | 15.4 | 13.9 | 16.8 | 35,900 | 23.6 | 21.9 | 25.4 | 55,200 |
| Asian/Pacific Islander | 10.3 | 7.7 | 12.8 | 7,500 | 11.7 | 9.1 | 14.3 | 8,600 | 15.3 | 12.3 | 18.2 | 11,200 |
| White | 9.5 | 8.3 | 10.8 | 13,300 | 10.9 | 9.5 | 12.3 | 15,200 | 15.9 | 14.2 | 17.5 | 22,100 |
| **Income (% of FPG)** | | | | | | | | | | | | |
| 0-100% | 20.7 | 18.9 | 22.6 | 37,600 | 18.2 | 16.5 | 20.0 | 33,100 | 27.5 | 25.4 | 29.5 | 49,700 |
| 101-200% | 14.9 | 12.7 | 17.1 | 14,100 | 14.3 | 12.1 | 16.5 | 13,600 | 20.9 | 18.4 | 23.5 | 19,800 |
| >200% | 7.0 | 5.8 | 8.1 | 12,400 | 9.2 | 8.0 | 10.5 | 16,300 | 12.9 | 11.4 | 14.4 | 22,800 |
| **Prenatal insurance** | | | | | | | | | | | | |
| Medi-Cal | 19.1 | 17.6 | 20.6 | 46,400 | 17.0 | 15.6 | 18.5 | 41,300 | 25.4 | 23.7 | 27.1 | 61,500 |
| Private | 7.6 | 6.6 | 8.6 | 16,200 | 9.8 | 8.6 | 11.0 | 21,000 | 13.4 | 12.1 | 14.8 | 28,800 |
| **Maternal Experiences** | | | | | | | | | | | | |
| **Childhood hardships** | | | | | | | | | | | | |
| Parents divorced or separated | 17.9 | 16.0 | 19.8 | 25,400 | 16.9 | 15.1 | 18.7 | 23,900 | 25.0 | 22.9 | 27.2 | 35,400 |
| Parent had trouble with law or went to jail | 21.8 | 18.6 | 25.0 | 10,300 | 21.2 | 17.9 | 24.5 | 9,900 | 31.8 | 28.0 | 35.6 | 15,000 |
| Family moved due to problems paying rent or mortgage | 22.9 | 20.0 | 25.9 | 15,500 | 21.2 | 18.4 | 24.1 | 14,300 | 31.7 | 28.4 | 35.0 | 21,400 |
| Parent had serious drinking or drug problem | 23.3 | 20.4 | 26.3 | 16,200 | 23.4 | 20.5 | 26.3 | 16,300 | 33.0 | 29.8 | 36.3 | 22,900 |
| Was placed in foster care | 23.5 | 18.4 | 28.6 | 3,400 | 24.0 | 18.1 | 29.9 | 3,500 | 36.1 | 29.6 | 42.6 | 5,200 |
| Often difficult paying for basic needs | 24.6 | 22.0 | 27.2 | 24,200 | 22.8 | 20.3 | 25.4 | 22,500 | 33.4 | 30.6 | 36.3 | 32,800 |
| Family experienced hunger | 30.7 | 26.8 | 34.6 | 13,400 | 26.7 | 22.9 | 30.4 | 11,700 | 40.0 | 35.8 | 44.2 | 17,500 |
| **Number of childhood hardships** | | | | | | | | | | | | |
| 0 hardships | 9.2 | 8.1 | 10.3 | 23,000 | 9.5 | 8.3 | 10.6 | 23,600 | 14.1 | 12.8 | 15.5 | 35,300 |
| 1 hardship | 12.9 | 11.0 | 14.7 | 13,800 | 13.0 | 11.1 | 14.9 | 13,900 | 19.2 | 16.9 | 21.4 | 20,500 |
| 2-3 hardships | 24.1 | 21.1 | 27.1 | 19,600 | 21.1 | 18.3 | 23.9 | 17,200 | 31.4 | 28.2 | 34.6 | 25,500 |
| 4 or more hardships | 25.5 | 22.0 | 29.1 | 9,000 | 25.1 | 21.4 | 28.8 | 8,800 | 36.6 | 32.4 | 40.8 | 12,800 |
| **Pregnancy stressors** | | | | | | | | | | | | |
| Woman or partner had pay or hours cut back | 21.8 | 19.0 | 24.6 | 11,900 | 22.3 | 19.3 | 25.3 | 12,200 | 31.4 | 28.0 | 34.7 | 17,100 |
| Woman or partner lost job | 26.1 | 22.9 | 29.2 | 17,900 | 24.3 | 21.2 | 27.5 | 16,700 | 33.9 | 30.5 | 37.3 | 23,200 |
| Moved due to problems paying rent or mortgage | 29.5 | 24.8 | 34.3 | 9,200 | 28.0 | 23.2 | 32.7 | 8,700 | 38.8 | 33.6 | 44.0 | 12,000 |
| Food insecurity during pregnancy | 31.0 | 27.9 | 34.2 | 23,100 | 27.4 | 24.3 | 30.5 | 20,500 | 39.5 | 36.1 | 42.9 | 29,500 |
| Someone very close had a bad problem with drinking or drugs | 33.9 | 28.8 | 39.0 | 8,900 | 27.7 | 23.1 | 32.3 | 7,300 | 42.0 | 36.7 | 47.4 | 11,100 |
| Woman or partner went to jail | 35.0 | 27.1 | 43.0 | 3,500 | 24.6 | 18.3 | 30.9 | 2,500 | 43.6 | 35.5 | 51.7 | 4,400 |
| Homeless or did not have a regular place to sleep at night | 37.0 | 29.8 | 44.2 | 5,300 | 29.5 | 23.0 | 35.9 | 4,200 | 45.8 | 38.4 | 53.2 | 6,600 |
| Became separated or divorced | 39.7 | 34.6 | 44.7 | 13,400 | 27.0 | 22.4 | 31.5 | 9,100 | 45.9 | 40.7 | 51.0 | 15,400 |
| Had no practical or emotional support | 41.3 | 34.7 | 47.9 | 9,300 | 32.3 | 25.8 | 38.8 | 7,300 | 46.5 | 39.8 | 53.2 | 10,400 |
| Physical or psychological intimate partner violence | 44.6 | 39.5 | 49.6 | 15,100 | 36.0 | 31.1 | 40.9 | 12,200 | 53.8 | 48.7 | 58.8 | 18,200 |
| **Number of pregnancy stressors** | | | | | | | | | | | | |
| 0 stressors | 7.6 | 6.6 | 8.6 | 21,700 | 7.9 | 7.0 | 8.9 | 22,700 | 12.3 | 11.1 | 13.5 | 35,100 |
| 1 stressor | 14.3 | 12.1 | 16.5 | 13,600 | 15.5 | 13.1 | 17.9 | 14,700 | 22.0 | 19.3 | 24.7 | 20,900 |
| 2-3 stressors | 28.3 | 25.2 | 31.5 | 19,300 | 24.7 | 21.6 | 27.7 | 16,800 | 36.4 | 33.1 | 39.8 | 24,800 |
| 4 or more stressors | 47.1 | 40.9 | 53.4 | 10,000 | 39.1 | 33.1 | 45.1 | 8,300 | 56.9 | 50.7 | 63.1 | 12,100 |

Notes: MIHA is an annual population-based survey of California resident women with a live birth. Data from MIHA 2013-2015 were combined, resulting in a statewide sample size of 20,762. Prevalence estimate, 95% confidence interval and annual population estimate are weighted to represent all women with a live birth who resided in California in 2013-2015. Annual population estimate is a three-year average and rounded to the nearest hundred. See the Technical Notes for information on weighting, comparability to prior years and technical definitions. Visit the MIHA website at www.cdph.ca.gov/MIHA.

# APPENDIX C: PRENATAL, POSTPARTUM AND PERINATAL SYMPTOMS OF DEPRESSION BY COUNTY AND REGION, MIHA 2013-2015

✔ better than rest of California ▲ worse than rest of California ♦ no statistical difference

| | Prenatal Symptoms of Depression | | | | | Postpartum Symptoms of Depression | | | | | Perinatal Symptoms of Depression | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Prevalence Estimate (%) | 95% Confidence Interval | | Annual Population Estimate | | Prevalence Estimate (%) | 95% Confidence Interval | | Annual Population Estimate | | Prevalence Estimate (%) | 95% Confidence Interval | | Annual Population Estimate |
| **California** | | 14.1 | 13.1 | 15.0 | 68,500 | | 13.5 | 12.6 | 14.4 | 65,700 | | 20.2 | 19.1 | 21.3 | 97,900 |
| **Top 35 Birthing Counties** | | | | | | | | | | | | | | | |
| Alameda | ♦ | 11.8 | 8.9 | 14.7 | 2,200 | ✔ | 10.1 | 7.3 | 12.9 | 1,900 | ♦ | 16.7 | 13.2 | 20.2 | 3,200 |
| Butte | ▲ | 17.7 | 14.1 | 21.3 | 400 | ♦ | 16.2 | 12.9 | 19.5 | 400 | ▲ | 25.4 | 21.3 | 29.4 | 600 |
| Contra Costa | ♦ | 13.5 | 10.4 | 16.6 | 1,600 | ♦ | 13.8 | 10.7 | 16.9 | 1,700 | ♦ | 20.2 | 16.6 | 23.9 | 2,500 |
| El Dorado | ✔ | 10.0 | 6.9 | 13.0 | 200 | ♦ | 10.5 | 7.8 | 13.3 | 200 | ♦ | 16.4 | 12.9 | 20.0 | 300 |
| Fresno | ♦ | 14.1 | 9.9 | 18.2 | 2,200 | ♦ | 12.2 | 8.5 | 16.0 | 1,900 | ♦ | 20.1 | 15.4 | 24.7 | 3,100 |
| Humboldt | ♦ | 15.0 | 11.3 | 18.7 | 200 | ▲ | 17.8 | 14.0 | 21.7 | 300 | ♦ | 23.8 | 19.5 | 28.2 | 300 |
| Imperial | ▲ | 19.6 | 15.6 | 23.6 | 600 | ♦ | 16.3 | 12.4 | 20.1 | 500 | ▲ | 25.7 | 21.3 | 30.2 | 800 |
| Kern | ♦ | 15.6 | 11.5 | 19.8 | 2,100 | ♦ | 15.3 | 11.0 | 19.6 | 2,100 | ♦ | 21.8 | 17.1 | 26.5 | 3,000 |
| Kings | ▲ | 19.1 | 15.3 | 22.9 | 400 | ▲ | 17.6 | 13.8 | 21.4 | 400 | ▲ | 26.4 | 22.2 | 30.7 | 600 |
| Los Angeles | ♦ | 13.9 | 11.2 | 16.5 | 17,400 | ♦ | 13.6 | 11.0 | 16.2 | 17,000 | ♦ | 20.9 | 17.8 | 24.0 | 26,000 |
| Madera | ♦ | 15.2 | 12.1 | 18.3 | 300 | ♦ | 16.2 | 12.8 | 19.7 | 400 | ♦ | 23.7 | 19.9 | 27.5 | 500 |
| Marin | ✔ | 10.8 | 8.3 | 13.4 | 200 | ✔ | 10.1 | 7.7 | 12.6 | 200 | ✔ | 16.0 | 13.1 | 19.0 | 400 |
| Merced | ♦ | 17.3 | 13.7 | 20.9 | 700 | ▲ | 17.8 | 14.3 | 21.3 | 700 | ▲ | 24.5 | 20.5 | 28.6 | 1,000 |
| Monterey | ▲ | 17.7 | 14.1 | 21.2 | 1,100 | ♦ | 15.4 | 12.2 | 18.6 | 1,000 | ♦ | 23.4 | 19.6 | 27.3 | 1,500 |
| Napa | ♦ | 12.6 | 9.9 | 15.3 | 200 | ♦ | 12.1 | 9.2 | 15.0 | 200 | ♦ | 18.6 | 15.2 | 22.0 | 300 |
| Orange | ♦ | 14.9 | 10.9 | 18.9 | 5,500 | ♦ | 12.8 | 8.8 | 16.8 | 4,700 | ♦ | 20.2 | 15.5 | 24.8 | 7,400 |
| Placer | ♦ | 11.0 | 7.9 | 14.0 | 400 | ♦ | 14.6 | 11.4 | 17.9 | 500 | ♦ | 20.0 | 16.2 | 23.8 | 700 |
| Riverside | ♦ | 13.1 | 9.8 | 16.4 | 3,900 | ♦ | 16.0 | 12.3 | 19.7 | 4,700 | ♦ | 20.4 | 16.4 | 24.5 | 6,100 |
| Sacramento | ♦ | 13.1 | 10.1 | 16.0 | 2,500 | ♦ | 11.5 | 8.8 | 14.3 | 2,200 | ♦ | 18.4 | 15.0 | 21.8 | 3,500 |
| San Bernardino | ♦ | 14.5 | 11.0 | 17.9 | 4,400 | ♦ | 12.8 | 9.3 | 16.3 | 3,900 | ♦ | 18.9 | 14.8 | 22.9 | 5,700 |
| San Diego | ♦ | 13.7 | 9.9 | 17.6 | 5,900 | ♦ | 13.2 | 9.6 | 16.8 | 5,700 | ♦ | 19.1 | 14.9 | 23.4 | 8,300 |
| San Francisco | ♦ | 14.4 | 10.8 | 17.9 | 1,300 | ♦ | 12.0 | 8.6 | 15.3 | 1,000 | ♦ | 18.2 | 14.3 | 22.1 | 1,600 |
| San Joaquin | ▲ | 18.2 | 14.3 | 22.1 | 1,800 | ▲ | 18.8 | 14.8 | 22.9 | 1,800 | ▲ | 25.2 | 20.9 | 29.6 | 2,400 |
| San Luis Obispo | ✔ | 10.5 | 7.7 | 13.4 | 300 | ♦ | 10.7 | 7.9 | 13.6 | 300 | ♦ | 17.7 | 14.2 | 21.2 | 500 |
| San Mateo | ✔ | 8.5 | 5.8 | 11.3 | 700 | ♦ | 10.4 | 7.3 | 13.5 | 900 | ✔ | 14.7 | 11.2 | 18.3 | 1,300 |
| Santa Barbara | ♦ | 17.3 | 13.9 | 20.7 | 1,000 | ♦ | 15.2 | 11.9 | 18.5 | 900 | ♦ | 22.8 | 19.0 | 26.6 | 1,300 |
| Santa Clara | ♦ | 11.7 | 8.6 | 14.8 | 2,700 | ♦ | 10.8 | 7.6 | 14.0 | 2,500 | ✔ | 16.0 | 12.4 | 19.7 | 3,700 |
| Santa Cruz | ♦ | 15.8 | 12.6 | 19.0 | 500 | ♦ | 14.4 | 11.4 | 17.5 | 400 | ♦ | 22.3 | 18.7 | 25.9 | 600 |
| Shasta | ▲ | 20.1 | 15.9 | 24.4 | 400 | ▲ | 17.3 | 13.4 | 21.3 | 400 | ▲ | 27.6 | 23.0 | 32.2 | 600 |
| Solano | ♦ | 14.6 | 11.4 | 17.8 | 700 | ♦ | 15.9 | 12.4 | 19.5 | 800 | ♦ | 22.6 | 18.6 | 26.6 | 1,100 |
| Sonoma | ♦ | 14.1 | 10.8 | 17.5 | 700 | ♦ | 13.7 | 10.5 | 16.9 | 700 | ♦ | 19.0 | 15.3 | 22.7 | 900 |
| Stanislaus | ▲ | 20.2 | 16.1 | 24.3 | 1,500 | ♦ | 16.8 | 13.1 | 20.5 | 1,300 | ▲ | 26.5 | 22.1 | 30.9 | 2,000 |
| Tulare | ♦ | 12.5 | 9.4 | 15.7 | 900 | ♦ | 10.4 | 7.3 | 13.4 | 800 | ♦ | 17.3 | 13.6 | 21.0 | 1,300 |
| Ventura | ♦ | 15.4 | 11.8 | 19.1 | 1,600 | ♦ | 15.4 | 11.6 | 19.2 | 1,600 | ♦ | 22.4 | 18.1 | 26.6 | 2,300 |
| Yolo | ✔ | 8.5 | 6.1 | 11.0 | 200 | ✔ | 9.8 | 7.1 | 12.5 | 200 | ✔ | 15.0 | 11.8 | 18.2 | 400 |
| **MIHA Region** | | | | | | | | | | | | | | | |
| Central Coast | ▲ | 16.1 | 14.3 | 17.9 | 4,600 | ♦ | 14.9 | 13.2 | 16.6 | 4,200 | ▲ | 22.4 | 20.4 | 24.4 | 6,300 |
| Greater Sacramento | ♦ | 12.2 | 10.2 | 14.3 | 3,600 | ♦ | 12.1 | 10.1 | 14.1 | 3,500 | ♦ | 18.2 | 15.8 | 20.6 | 5,300 |
| Los Angeles County | ♦ | 13.9 | 11.2 | 16.5 | 17,400 | ♦ | 13.6 | 11.0 | 16.2 | 17,000 | ♦ | 20.9 | 17.8 | 24.0 | 26,000 |
| Northern Mountain | ▲ | 17.2 | 14.6 | 19.8 | 2,200 | ▲ | 17.1 | 14.4 | 19.8 | 2,200 | ▲ | 25.2 | 22.1 | 28.3 | 3,200 |
| Orange County | ♦ | 14.9 | 10.9 | 18.9 | 5,500 | ♦ | 12.8 | 8.8 | 16.8 | 4,700 | ♦ | 20.2 | 15.5 | 24.8 | 7,400 |
| San Diego County | ♦ | 13.7 | 9.9 | 17.6 | 5,900 | ♦ | 13.2 | 9.6 | 16.8 | 5,700 | ♦ | 19.1 | 14.9 | 23.4 | 8,300 |
| San Francisco Bay Area | ✔ | 12.2 | 11.0 | 13.5 | 10,400 | ✔ | 11.6 | 10.3 | 12.9 | 9,900 | ✔ | 17.5 | 16.0 | 19.0 | 14,900 |
| San Joaquin Valley | ▲ | 16.0 | 14.4 | 17.7 | 10,000 | ♦ | 15.0 | 13.4 | 16.6 | 9,300 | ▲ | 22.3 | 20.5 | 24.2 | 13,900 |
| Southeastern California | ♦ | 14.1 | 11.8 | 16.4 | 8,900 | ♦ | 14.5 | 12.0 | 16.9 | 9,100 | ♦ | 19.9 | 17.2 | 22.7 | 12,600 |

Notes: MIHA is an annual population-based survey of California resident women with a live birth. Data from MIHA 2013-2015 were combined, resulting in a statewide sample size of 20,762. Prevalence estimate, 95% confidence interval and annual population estimate are weighted to represent all women with a live birth who resided in California in 2013-2015. Annual population estimate is a three-year average and rounded to the nearest hundred. Symbols indicate whether the prevalence estimate of women with symptoms of depression in the county or region were statistically different from the rest of the state (p-value < 0.05, chi-square test). See the Technical Notes for information on weighting, comparability to prior years and technical definitions. Visit the MIHA website at www.cdph.ca.gov/MIHA.

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California Pregnancy-Associated Review Committee (CA-PARC)

CA-PARC · Suicide PAMR

# Prevention of Pregnancy-Associated Suicide:
## Recommendations for Agencies, Organizations & Institutions

The California Pregnancy-Associated Review Committee (CA-PARC) was established to review and report on California's maternal deaths (HSC 123636). While California Department of Public Health (CDPH) provides administrative and scientific support to CA-PARC, recommendations for preventing maternal deaths are made solely by the members of CA-PARC.

Pregnancy-associated suicide is defined as suicide that occurred during pregnancy or within one year after pregnancy ended. In 2024, the federal government released both the National Strategy for Suicide Prevention and the National Strategy to Improve Maternal Mental Health Care. To support these efforts, CDPH is releasing comprehensive recommendations from CA-PARC's Pregnancy-Associated Suicide Review of deaths in 2002-2012, reviewed in 2016-2017.

**CA-PARC recommendations for the prevention of pregnancy-associated suicide are relevant now because:**

- Suicide among individuals who were pregnant within the prior year has a lasting and far-reaching societal impact, so it is important to prioritize pregnancy-associated suicide prevention efforts.
- CDC data from 1999-2022 indicate that suicide rates among women of reproductive age (15-49 years) increased from 5.0 to 7.4 deaths per 100,000 in the U.S. and from 4.7 to 5.2 deaths per 100,000 in California.
- In California, the rate of pregnancy-associated suicide also increased from 2.3 deaths per 100,000 live births in 2009-2011 to 4.1 deaths per 100,000 live births in 2019-2021.

# Key Findings:

Among the 99 pregnancy-associated suicide deaths that occurred in 2002-2012:

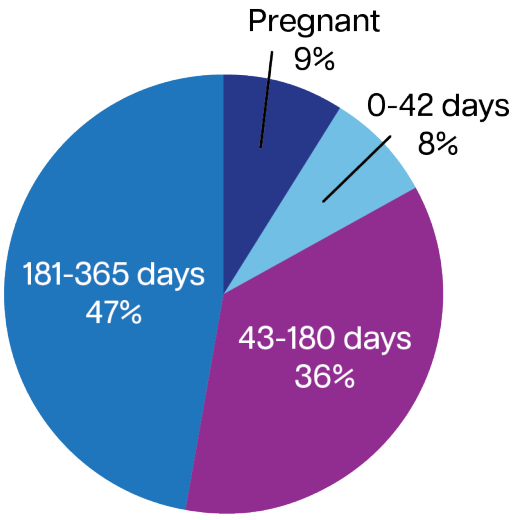
**98%**
of suicide deaths had at least some chance of being averted

Over half (51%) had a good-to-strong chance of prevention with opportunities to intervene and provide support. Nearly all suicide deaths (98%) had at least some chance of being averted.

**83%**
died between six weeks and one year after pregnancy ended

The postpartum period is a time of heightened risk for suicide.* Most (83%) pregnancy-associated suicides happened six weeks to one year after pregnancy, reflecting the need for additional supports during this period.

**Timing of pregnancy-associated suicide**




* https://policycentermmh.org/maternal-suicide-issue-brief/

**87%**
had mental health conditions

Mental health conditions were highly prevalent (87%) – 62% had pre-existing mental health conditions and 25% developed mental health conditions in or after pregnancy.

**62%**
before becoming pregnant

**25%**
during or after pregnancy



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## Key Findings (continued):

**65%**

had a stressful life event near the time of death

Nearly two-thirds (65%) had a stressful life event near the time of death (e.g., interpersonal conflict, loss of a loved one).

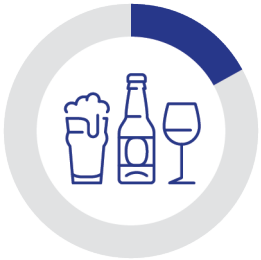
Substance use was identified as a precipitating factor to the suicide in 29% of individuals. Nearly one-third (32%) used illicit substances (e.g., methamphetamine, cocaine, heroin) or abused prescription opioids during or after pregnancy; heavy alcohol use was noted in 17% of individuals.

**29%**

substance use was a precipitating factor to the suicide

**32%**

used illicit substances or abused prescription opioids



**17%**

used alcohol heavily

**Mental Health Resources:**

- Call 1-833-TLC-MAMA (1-833-852-6262). The National Maternal Mental Health Hotline provides 24/7, free, confidential support before, during, and after pregnancy.
- Call or text "HELP" to 1-800-944-4773. The Postpartum Support International Hotline provides information, encouragement, and names of resources near you.
- Individuals experiencing a crisis and friends/family members can call or text 988. The 988 Suicide and Crisis Lifeline provides 24/7 free, confidential support for mental health struggles, emotional distress, and alcohol or drug use concerns.
- Visit the Zero Suicide website to view resources and information to improve suicide care.
- Visit the Striving for Safety website as a resource for safety planning and lethal means safety.

# CA-PARC Prevention Recommendations for Agencies, Organizations & Institutions:

- **Reduce social isolation during and after pregnancy** by increasing availability to evidence-based, culturally and linguistically relevant group prenatal care and peer-led support groups.
- Support incentives for **routine screening of pregnant and postpartum individuals for mental health conditions** by both obstetric providers and pediatricians during well-child visits.
- **Establish a statewide perinatal psychiatric hotline for providers** and public consultations on appropriate medications and care for mental health conditions before, during, and after pregnancy.
- **Improve systems of referral and ensure access to care**, including substance use treatment, for people with known risk factors or mental health conditions.
- **Create regional centers of excellence for treating severe maternal mental health conditions** while keeping mother and baby together during day treatments or hospitalizations.
- **Incorporate education for Child Protective Services (CPS) staff** on the mental health impact and suicide risk of separating mothers from infants. Include tools for grief support and response that facilitates support for, and the reunification of, families.
- **After a CPS removal of an infant,** in addition to the required parenting classes, **establish a social or grief support group for mothers** to address the distress from the separation.
- Through cross-collaboration with existing mental health advocacy organizations, **develop and implement culturally and linguistically relevant public health awareness campaign** on maternal mental health and suicide prevention.
- **Medical examiners and coroners**, when conducting investigations of pregnant and postpartum individuals who died by suicide, potential suicide, or substance abuse/overdose, **are strongly urged to do the following**:
  - **Perform in-depth interviews of family and friends** regarding medical and mental health information/history as it pertains to the decedent.
  - **Obtain medical and mental health records** to include current diagnoses and a list of prescribed medications with dosages.
  - **Perform comprehensive postmortem toxicological analysis** in drug overdose and suicide cases.

The findings and recommendations in this document are those of CA-PARC and do not necessarily represent the views or opinions of the CDPH or the California Health and Human Services Agency. While California Department of Public Health (CDPH) provides administrative and scientific support to CA-PARC, recommendations for preventing maternal deaths are made solely by the members of CA-PARC.

Also see Recommendations for Perinatal Providers & Facilities.



CDPH California Department of Public Health

MATERNAL MENTAL HEALTH NOW
supporting the well-being of growing families

**Maternal Mental Health NOW Learning Objectives - 12 CE's**

1) Recognize and describe symptoms of perinatal mood and anxiety disorders.

2) Differentiate between a normal range of emotional and behavioral changes that may occur when pregnant or postpartum (including baby blues) and perinatal mental health disorders.

3) Identify risk factors, comorbid conditions and additional considerations for rule out during differential diagnosis.

4) Administer screening and assessment tools with pregnant and postpartum birthing people.

5) Identify the facets of the Adverse Childhood Experiences (ACES) study and their implications for perinatal mental health.

6) Explain how parent/child attachment may be impacted by perinatal mental health.

7) Identify what protective factors may play a role in the treatment and care of a family with a history of trauma.

8) Identify and explain the four Ps: Predisposing, Precipitating, Perpetuating, Protective and their implications during the course of treatment planning.

9) Apply the basics of effective intervention and utilize resources for informed care.

10) Name 3 evidence based interventions recommended for perinatal mental health disorder treatment.

11) Review basic guidelines for medication use during pregnancy and postpartum, including the four areas of informed consent.

12) Explain the importance of individualized care planning and name 2 recommendations for implementation.