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January 4, 2023

Steven T. James
House Clerk
State House Room 145
Boston, MA 02133

Michael D. Hurley
Senate Clerk
State House Room 335
Boston, MA 02133

Dear Mr. Clerk:

Pursuant to Chapter 313 of the Acts of 2010, please find enclosed a report from the Department of Public Health entitled "CY20 Summary of Activities related to Screening for Postpartum Depression."

Sincerely,

A handwritten signature in cursive script that reads "Margaret R. Cooke".

Margaret Cooke
Commissioner
Department of Public Health

Cc: Representative James O'Day, Co-Chair of the Ellen Story PPD Legislative Commission
Senator Joan Lovely, Co-Chair of the Ellen Story PPD Legislative Commission

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COMMISSIONER

CY20 Summary of Activities Related to Screening for Postpartum Depression

January



Legislative Mandate

The following report is hereby issued pursuant to Chapter 313 of the Acts of 2010 as follows:

The Department of Public Health “shall issue regulations that require providers and carriers to annually submit data on screening for postpartum depression. Following the receipt of data, the commissioner of public health shall issue an annual summary of the activities related to screening for postpartum depression, including best practices and effective screening tools. The department shall annually file the summary with the commissioner of public health and the clerks of the house of representatives and the senate not later than June 30; provided, however, that the first report is due not later than June 30, 2011.”

Executive Summary

About one in eight American birth parents experience depressive symptoms after delivery. Untreated postpartum depression (PPD) has negative consequences for both children and birth parents. To promote the health and well-being of birth parents, children, and family, on August 19, 2010, Chapter 313 of the Acts of 2010, *An Act Relative to Postpartum Depression*, was signed into law in Massachusetts. Pursuant to this law, a PPD Special Legislative Commission was established, and the PPD Regulations (105 CMR 271.000) were promulgated in December 2014 requiring data reporting by both carriers and providers for routine clinical appointments in which medical services are provided to a person who has given birth within the previous six months.

To further improve PPD screening data reporting and to investigate the status of perinatal mental health and its impacts on birthing parents and their children, the Massachusetts Department of Public Health adopted depressive symptom questions in the Pregnancy Risk Assessment Monitoring System (PRAMS) in FY11 and starting in FY14, funded PPD screening at community health centers and home visiting programs serving pregnant and parenting families.

Introduction

About one in eight American mothers experienced depressive symptoms after delivery in 2018.¹ Untreated postpartum depression (PPD) has negative consequences for both children and birth parents. Children born to individuals with PPD were more likely to have poor cognitive functioning, behavioral inhibition, emotional maladjustment, violent behavior, externalizing disorders, or psychiatric and medical disorders.²⁻⁹ Furthermore, individuals with PPD were more likely to have weight problems, alcohol and illicit drug use, social relationship problems, breastfeeding problems, or persistent depression.¹⁰⁻¹⁵ A 2017 study of births in the United States further estimated that untreated mood and anxiety disorders in birth parents cost a total of \$14 billion from conception to 5 years postpartum, with an average of \$31,800 per mother-infant dyad.¹⁶

To promote the health and well-being of birth parents, children, and families, on August 19, 2010, Chapter 313 of the Acts of 2010, *An Act Relative to Postpartum Depression*, was signed into law. This legislation has two primary components: (1) establishing a postpartum depression (PPD) Legislative Commission and (2) requiring that the Massachusetts Department of Public Health (DPH) promote a culture of awareness, de-stigmatization, and screening for postpartum depression.

Specifically, DPH is charged with:

- Developing standards for effective PPD screening;
- Making recommendations to health plans and health care providers for PPD screening data reporting;
- Issuing regulations that require health plans and health care providers to annually submit data on screening for postpartum depression; and
- Issuing an annual summary of the activities related to screening for postpartum depression including best practices and effective screening tools.

A legislative requirement outlined in Chapter 313 of the Acts of 2010, *An Act Relative to Postpartum Depression*, is the implementation of PPD Screening Regulations, which requires providers to report their PPD screening data through the submission of service codes to the All Payers Claims Database (APCD). Due to challenges in accessing the APCD data from the Center for Health Information and Analysis (CHIA) and linking it to the birth data from Vital Records, there have been considerable delays in meeting this annual reporting component. This report provides a summary of activities for calendar year 2020.

Report

The Massachusetts Department of Public Health (DPH) collects postpartum depression (PPD) data and funds several programs in PPD service provision. Below is a summary of the PPD data collected and activities conducted in calendar year 2020 (CY20).

PPD Regulations - 105 CMR 271.000

An Act Relative to Postpartum Depression, Chapter 313 of the Acts of 2010 charged DPH to issue regulations that require carriers and health care providers to annually submit data on screening for PPD. This data reporting is intended to help DPH understand statewide PPD screening patterns and outcomes, to improve the detection of this prevalent condition and ultimately facilitate treatment for birthing parents in need of help.

The PPD Regulations (105 CMR 271.000) were promulgated in December 2014 and require annual reporting by a provider that conducts or oversees screening for PPD, using a validated screening tool, during a routine clinical appointment in which medical services are provided to a person who has given birth within the previous six months. The regulation also applies to a carrier that receives a claim for this PPD screening.

Provider Data

Providers responsible for adhering to these regulations are obstetrician-gynecologists (OB-GYNs), Family Medicine Practitioners, and Advanced Practice Nurses (including Nurse Midwives and Nurse Practitioners), and Physician Assistants, who practice in a family medicine or OB-GYN setting.

Data collection from providers began in calendar year 2015. Providers may report their PPD Screening data to DPH in one of two ways:

1. Providers can submit an annual written report to DPH by March 1 for the previous calendar year using the “Annual PPD Data Reporting Form” available on the [DPH web page dedicated to PPD](#).
2. Alternatively, providers may use the Healthcare Common Procedure Coding System (HCPCS) code of S3005 (Performance Measurement, Evaluation of Patient Self-Assessment, Depression) with a diagnostic range Z39.2 (Routine Postpartum follow up, formerly ICD9 V24 - Screening for Postpartum Depression) and with a modifier as a mechanism for reporting PPD screening (see below).

Servicing Provider	Modifier for use with a positive PPD screen	Modifier for use with a negative PPD screen
<i>OB-GYNs, Family Medicine Practitioners, Advanced Practice Nurses including Nurse Midwives and Nurse Practitioners, & Physician Assistants</i>	U1	U2

Depending on the private carrier, the service code is set to pay at \$0.00 or at \$0.01. Private carriers have been accepting this service code from the servicing providers identified above and are reporting it directly to the [All Payer Claims Database \(APCD\)](#) at the Massachusetts [Center for Health Information & Analysis \(CHIA\)](#), as required under PPD Regulations.

Effective May 16, 2016, [MassHealth](#) began paying perinatal care providers for the administration of standardized depression screening during pregnancy and the postpartum period utilizing the above HCPCS code.

PPD Data Collected through Claims Codes & Linkage with APCD

Background: Chapter 313 of the Acts of 2010, An Act Relative to Postpartum Depression, called for submission of data on postpartum depression (PPD) screening to examine the frequency and scope of PPD among new mothers in Massachusetts. PPD defined as depression occurring within 12 months after giving birth, includes feelings of sadness, hopelessness, and anhedonia—the loss of interest in previously pleasurable activities. PPD is an important public health issue with profound long-term consequences for mothers and families if left untreated, including impaired mother-infant bonding, delayed social and cognitive development in children, and increased risk of maternal suicide and infant death.¹⁷ It is recognized that greater than 50% of mothers with PPD are not identified and thus do not seek help from a health care or mental health professional.¹⁸

Methodology: [Massachusetts All-Payer Claims Database \(APCD\)](#) collected by the [Center for Health Information & Analysis \(CHIA\)](#) were linked to the Massachusetts birth certificate data for calendar year 2019. CHIA has created a new APCD Master Patient Index (MPI) that assigns a single unique surrogate key to each person, regardless of how many different insurance carriers have submitted data about the person. APCD data obfuscation begins by processing Member Eligibility (ME) data through CHIA’s data intake application called FileSecure which is deployed as on-premises software at the data submitter. FileSecure prepares Member Eligibility data for use in the APCD MPI. All legacy APCD data submitted to CHIA prior to the FileSecure application deployment has been prepared and securely hashed using the exact same logic that FileSecure uses to process newly submitted data. The birth certificate data were also standardized and hashed using the same logic. First name (hashed), last name (hashed), date of birth (hashed), and zip code (5 digit) were used in APCD MPI matching scoring. CHIA’s MPI solution employs a probabilistic approach that uses these fields to generate a score that represents how well a record matches to another record. When two records are compared, each field is given a CHIA-assigned weight based on whether the field values being compared agree, disagree, or if either of the fields is empty. Techniques used to accommodate minor variations such as misspellings

and digit transpositions cannot be applied to hashed data. The weights from each field comparison are summed to determine the total record score. If the record score exceeds the CHIA-defined threshold, the records are considered a match and are linked together as a single entity (person). Records linked together are assigned a surrogate key known as a Member Enterprise ID, or MEID for short.

Results: During the time period of January 2019 through December 2019, there are 65,916 unique deliveries from birth certificates, of which 47,951 (72.7%) were linked to an APCD claim. The numbers of women screened for PPD within 6 months after delivery ranged from 808 in February 2019 to 1,027 in August 2019 (Figure 1). During the time period of January 2019 through December 2019, 10,976 (22.9%) out of 47,951 deliveries were screened for PPD and 1,161 (10.6%) had a positive screen.

The proportion of women who were screened for PPD was higher among Asian (30.6%) and American Indian or those who identified as “Other” (25.8%) and compared to 20.0% and 19.2% among Hispanic and Black non-Hispanic, respectively. The proportion of PPD screening was lower among preterm deliveries compared to full term deliveries (19.6% vs. 23.2%). A higher proportion of screening was seen among women with higher levels of education and the highest percentage of screening was observed among women with associate or bachelor’s degrees and postgraduate (23.0%, Table 1 in Appendix).

Reviewing the results of screening indicates that Hispanic individuals (13.0%) had a higher positive proportion compared to White non-Hispanic (10.5%), Black non-Hispanic (10.0%), American Indian or “Other” (8.1%), and Asian (6.9%) women. The positive proportion was higher among women who were covered by Medicaid than those on private insurance (13.1% vs. 6.6%). The positive percentage of screening decreased while women’s education level increased, except for women who had graduate degrees – they had lower positive proportions than women with no college education but higher positive proportion than women who only received undergraduate education (Table 2 in Appendix).

PPD Screening Data Collected through Written Reports

For calendar year 2020, one Annual PPD Screening Data Reporting Form was received from a medical practice. Results include:

- The practice reported screening 719 (83.5%) of 861 postpartum patients seen.
- The practice reported using the Patient Health Questionnaire -9 (PHQ-9) to screen women for PPD.
- Overall, 29 postpartum individuals (4%) screened positive for PPD

PPD Screening Programs

The Fiscal Year (FY) 2020 budget included language requiring DPH to continue PPD screening programs at Community Health Centers (CHC) at four sites across the Commonwealth. \$300,000 was distributed evenly across all four sites. This funding allowed these CHCs to

continue to employ part time Community Health Workers (CHW) to assist with PPD screening and referral activities. The four CHCs included: Family Health Center in Worcester, Holyoke Health Center, Stanley Street Treatment & Resources (SSTAR) Health Center, and the Lynn Community Health Center.

The CHCs are required to submit PPD screening data on a quarterly basis to DPH, inclusive of all dates during which services were provided. Anecdotal data collected from the CHCs suggested a decrease in the number of people seen at their site due to the COVID-19 pandemic. Families reported fear of leaving their homes due the COVID -19 risk exposures. As a result, the number of people who received a PPD screening decreased. The following is a summary of the data received from all four sites.

- CHCs reported 557 face-to-face encounters with pregnant individuals during clinical visits, with 542 (97.3%) receiving a PPD screen.
- CHCs reported 579 face-to-face encounters with postpartum individuals during clinical visits, with 419 (72.4%) receiving a PPD screen.
 - Of the 419 postpartum individuals who received a PPD screen, 14 (3.3%) scored either a 10, 11 or 12 on the [Edinburgh Postnatal Depression Scale \(EPDS\)](#) or 1 – 9 on the [Patient Health Questionnaire \(PHQ-9\)](#), indicating mild depressive symptoms.
 - Of the 419 postpartum individuals who received a PPD screen, 9 (2.1%) scored either a 13 or above on the [EPDS](#) or 10 or above on the [PHQ-9](#), indicating moderate to severe depressive symptoms.
- CHCs reported that their CHW provided 711 face-to-face encounters with a parent.
- CHCs reported 1,433 indirect/collateral contacts, including phone calls, made on behalf of the parents serviced by the program, including but not limited to: searches for basic need items, calls to providers to determine availability versus a wait list for services, and referral screens for eligibility with community-based organizations.
- CHCs reported 1,177 referrals initiated with 989 (84%) referrals completed.

Early Intervention Parenting Partnerships

DPH's [Early Intervention Parenting Partnerships \(EIPP\)](#) is a home visiting program for expectant parents and families with infants who are high need due to practical barriers (e.g., low financial resources, housing instability), emotional and/or behavioral health challenges (e.g., depression, substance use), or other stressors (e.g., immigration-related stress). The goals of EIPP are to:

- Connect families with local resources;
- Provide and build families' social support;
- Appropriately engage families in health care systems;
- Provide parenting education;

- Promote positive parent-child attachment and healthy child development; and
- Support families experiencing multiple stressors to prevent child social and emotional delays, and link with Early Intervention (EI) services where appropriate.

EIPP provides home visiting and group services to over 300 families annually by a maternal-child health (MCH) team that includes a MCH nurse, a mental health clinical professional, and a community health worker (CHW). EIPP provides parental and infant health assessment and monitoring, health education and guidance, screening and appropriate referrals, and linkage with the [Women, Infants & Children \(WIC\) Program](#) and other resources.

Programmatic performance measures and parental and infant outcomes range from improved management of alcohol, tobacco and other drugs, improved parenting skills, improved emotional health, increased rates of exclusive breastfeeding, increased attendance at postpartum visits, and improved nutrition.

Data on the 291 EIPP Participants enrolled during CY20 include the following eligibility criteria (participants may meet more than one):

Percent of Participants	Eligibility Criteria
83.5%	High level of stress
66%	Inadequate food or clothing
54.6%	History of depression including postpartum depression
34%	Homelessness or housing instability
16.5%	Tobacco use
10.3%	Substance abuse in the home
9.6%	Less than a 10 th grade education
3.1%	Violence in the home

At enrollment and at other key stages of program engagement, all EIPP participants receive a Comprehensive Health Assessment (CHA) that assesses the social, emotional, and physical well-being of the participant and infant in the context of their family. This CHA includes both a Social Connectedness screen utilizing a three-question survey and a PPD screen, utilizing the [Edinburgh Postnatal Depression Scale \(EPDS\)](#).

In CY20, 194 participants received the Social Connectedness screening, utilizing a screening tool at 2 months postpartum.

- Twenty-four participants (12.4%) indicated that they felt they were not getting the support they needed from others.
- Fifty participants (25.8%) indicated that they did not have someone to call when they needed someone to care for their baby.
- Eight participants (4.1%) indicated they did not have someone they could count on to listen to them when they needed to talk.

In addition, 194 PPD screens were conducted with EIPP participants at 2 months postpartum.

- One hundred seventy-four participants (90%) received a score below 9, indicating that they were not experiencing depressive symptoms.
- Eight participants (4.1%) received a score between 10 – 12, indicating mild depressive symptoms.
- Eleven participants (5.7%) reported moderate or high depressive symptoms.

Participants who screen positive for depression are then supported in accessing mental health services including counseling, psychiatric treatment, and support groups. In 2020, 100% of EIPP participants identified with depression and/or a mental health disorder were connected to mental health services including individual counseling, psychiatric treatment, support groups, and/or couples/family counseling. The most significant barrier to accessing services was the COVID-19 pandemic where many participants were frightened to leave their homes and telehealth services were limited. Additional barriers to accessing mental health services in a timely manner included language, stigma, transportation, and lack of insurance for undocumented participants.

Massachusetts Maternal, Infant and Early Childhood Home Visiting (MA MIECHV):

Since the spring of 2010, DPH has been operating the [Maternal, Infant, and Early Childhood Home Visiting Program \(MIECHV\)](#), a federally funded program for states, tribes, and territories to develop and implement one or more evidence-based maternal, infant, and early childhood home visiting model(s). The state’s program is referred to as MA MIECHV.

In September 2020, DPH was awarded \$6.8 million in federal funds in support of MA MIECHV, marking the 10th year of funding. MA MIECHV funds evidenced-based home visiting programs, including [Parents as Teachers](#) and [Healthy Families America](#). MA MIECHV home visiting services prioritized 18 communities for services identified through the 2020 Massachusetts MIECHV needs assessment (list of communities is in the Appendix). The needs assessment ranked communities based on quantitative data indicators in nine domains: (1) socioeconomic status; (2) housing; (3) populations of special interest (e.g., teen births, foreign born residents); (4) substance use; (5) crime; (6) child unintentional injuries; (7) child maltreatment; (8) adverse perinatal outcomes; and (9) child development and health and school outcomes. There are 24 MA MIECHV home visiting programs across the 18 communities.

Depression screening is conducted with all program participants and data are analyzed for all home visiting programs on a quarterly basis. An annual report to the federal funding agency, the Health Resources and Services Administration (HRSA), is submitted every October. Screens are conducted within three months of enrollment and are updated in compliance with model fidelity respective to each evidence-based home visiting program.

In federal FY19, 92% of expected screenings for depressive symptoms were completed within three months of enrollment.

Welcome Family

The [Welcome Family](#) program, funded through MA MIECHV, offers a one-time nurse home visit to all birthing parents with newborns and their families, regardless of age, income, or other criteria, in five Massachusetts communities. The goal of Welcome Family is to promote optimal parental and infant physical and mental well-being and to provide an entry point into a system of care for families with newborns. Each visit is conducted within 8 weeks postpartum, lasts approximately 90 minutes, and is conducted by a nurse with maternal and child health experience. All services are provided at no cost to families. The primary focus of Welcome Family is the birthing parent and their newborn, but any caregiver is eligible for a visit, including fathers, grandparents, adoptive parents, and foster parents.

During the visit, the Welcome Family nurse assesses the following six areas. Each area includes screening, brief intervention, education, and referrals to services as needed:

- Parental emotional health, including a depression screen
- Parental and infant nutrition, including breastfeeding
- Unmet health needs
- Domestic violence
- Substance use
- Parental and infant clinical assessment

The nurse also spends time addressing the family's questions or concerns. Participants receive a Welcome Family bag with gifts and information to support parents and baby. In addition, participants receive a follow-up phone call to inquire about the outcome of the referrals made during the visit and assess the need for any additional referrals.

Marketing and outreach activities are conducted at the community level to identify and recruit mothers with newborns. Relationships are fostered with potential referral sources in the community including birth hospitals, OB-GYNs, midwives, pediatricians, and WIC.

Welcome Family is available to families living or giving birth in five communities: Fall River, Boston, Lowell, Holyoke, and Springfield. During 2020, 1,837 PPD depression screens were

offered during Welcome Family visits. There were 196 positive PPD screens, of which 142 (72%) received a referral to services. A family may decline a referral, or the nurse may not offer a referral if the family is already receiving services. Families who did not receive a referral received brief interventions by the Welcome Family nurse.

“It is so hard and lonely those first few weeks with a new baby and [the nurse] was so supportive, helpful and genuinely cared for how I was doing, not just the baby. This was exactly what I needed; someone to talk to, with experience who would give me immense amounts of advice and tips to cope with a new baby.” – Welcome Family participant

The Welcome Family Learning Collaborative is a forum for the five local agencies to plan and implement quality improvement projects and share best practices and lessons learned across programs. The Learning Collaborative typically has two in-person meetings per year, each of which is followed by a six-month action period during which the programs carry out “Plan, Do, Study, Act” cycles. In the past, improvement projects have focused on topics such as increasing referrals to the program, reducing racial and ethnic inequities in home visit completion, and increasing domestic violence screening rates.

From July-December 2020, the Learning Collaborative cycle focused on depression screening, a topic chosen in collaboration between DPH and local program staff, due to the growing mental health concerns and social isolation resulting from the COVID-19 pandemic. The Collaborative chose a quality improvement project focused on improving an existing process to be able to better identify mental health concerns and connect parents to services if needed.

- Specifically, local programs tested using the EPDS for caregivers who screen positive on the PHQ-2, the tool currently used in the Welcome Family program.
- For this project, the primary measure was to increase the number of caregivers who pre-screen positive on the PHQ-2 who then receive additional EPDS screening.
- Local implementing agencies tested changes, such as developing scripts to introduce the EPDS, reviewing the EPDS verbally and in writing, and offering the EPDS to all clients with a history of depression, regardless of PHQ-2 score.
- The secondary measure was increasing referral acceptance to mental health services for caregivers for whom a concern is identified on the PHQ-2 or EPDS.
- There was no noted improvement on this measure following the project.

Following the Learning Collaborative cycle, the local programs agreed that the PHQ-2 screen is just as effective in identifying symptoms of depression when coupled with the expertise from the Welcome Family nurses. Therefore, it was decided not to integrate the EPDS into standard program practice.

Pregnancy Risk Assessment Monitoring System (PRAMS)

Since 2007, DPH has monitored the health of birthing parents and children in the Commonwealth with the [Massachusetts Pregnancy Risk Assessment Monitoring System](#)

[\(PRAMS\)](#), an ongoing survey of new birthing parents. The survey asks a set of two questions related to the experience of postpartum depression. Based on the most recent data available (2020, N=1,369 survey participants), an estimated 10.0% of birthing parents in Massachusetts experience PPD symptoms always or often, 25.6% experience PPD symptoms sometimes, and 64.4% experience PPD symptoms rarely or never (Figure 2 in Appendix).

PRAMS data from 2020 suggest that some Massachusetts birthing parents are more likely to report experiencing PPD symptoms than others. Compared to White non-Hispanic birthing parents (7.2%), Black non-Hispanic birthing parents (16.3%) and Asian non-Hispanic birthing parents (20.0%) were more likely to experience PPD symptoms often or always. Similarly, higher prevalence of PPD symptoms was observed among birthing parents with less than a high school education (16.0%) and high school education (15.1%) compared to birthing parents with a college education (6.9%). Although higher prevalence of PPD symptoms was observed among those who are not married (14.1%) compared to birthing parents who are married (8.2%), this difference was not statistically significant after adjusting for parental race/Hispanic ethnicity and education.

The 2020 PRAMS data also suggests that some Massachusetts birthing parents are less likely to be screened for PPD during their postpartum visit. Overall, 84.2% of birthing parents reported that their health care providers asked if they were depressed (proxy for PPD screening). Compared to White non-Hispanic birthing parents (87.9%), Black non-Hispanic birthing parents (77.9%) and Hispanic birthing parents (77.1%) were less likely to be screened for PPD. Similarly, lower prevalence of PPD screening was observed among birthing parents with less than a high school education (74.4%) and high school education (73.3%) compared to birthing parents with a college education (89.4%).

Additional Activities

In CY20, additional activities were conducted, and products were developed with the goal of supporting health care providers and health plans, as DPH implements the PPD Legislation.

Activities included:

1. In partnership with the PPD Legislative Commission subcommittee focused on community resources, DPH maintains and updates the web [page dedicated to PPD](#) with additional resources.
2. DPH continues to make available free to the public the brochure entitled "[Being A Mother Is A Hard Job](#)" through the Massachusetts Health Promotion Clearinghouse.
3. DPH has funded Tufts University from FY20-FY23 to evaluate the effectiveness of EIPP with focus on PPD Screening and referral services.
4. DPH participated in the quarterly PPD Legislative Commission Meetings and the annual PPD Awareness Day event at the State House.

Conclusion

Postpartum depression has significant adverse impacts on birthing parents, infants, and their families. Access to appropriate and quality treatment and support are essential.

Massachusetts is leading the way in innovative health policies to address postpartum depression. The Massachusetts Department of Public Health will continue to work diligently to improve the health and wellbeing of all birthing parents and infants across the Commonwealth, by prioritizing comprehensive PPD data collection and analysis, while also promoting early detection and treatment across health sectors.

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Appendix

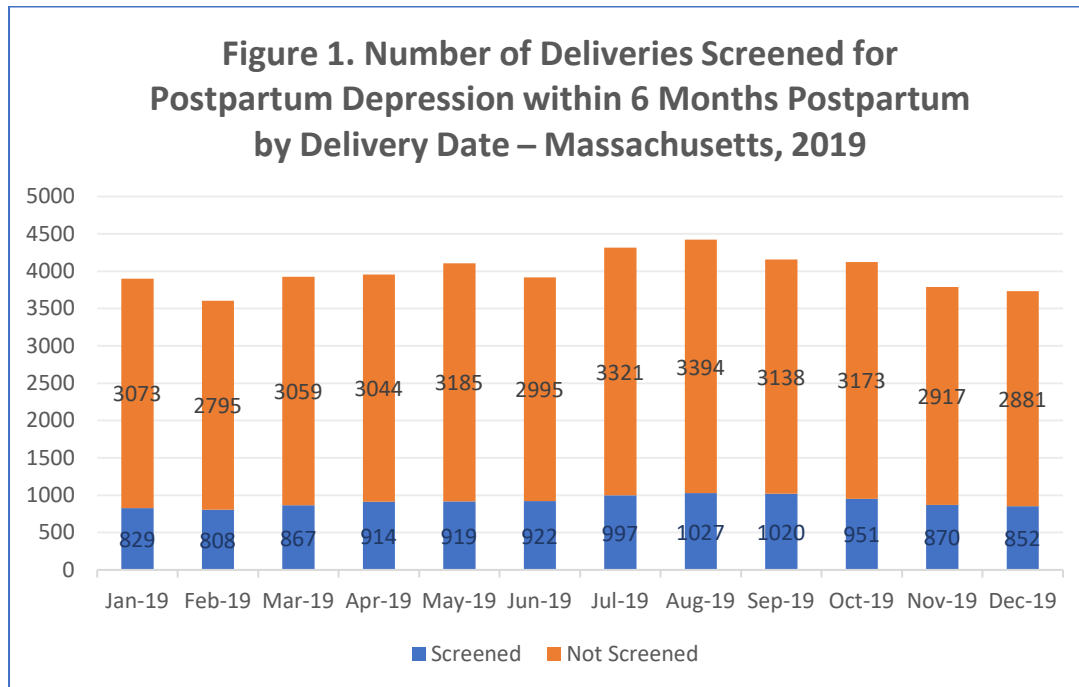


Table 1. Women’s Characteristics by Status of PPD Screening, Jan 2019 -Dec 2019, MA

	Screened			
	No		Yes	
	N	%	N	%
<i>Race/Ethnicity</i> [†]				
White non-Hispanic	18,767	76.1	5,900	23.9
Black non-Hispanic	4,836	80.8	1,151	19.2
Asian/PI non-Hispanic	2,452	69.4	1,079	30.6
Hispanic	9,759	80.0	2,439	20.0
American Indian or Other	463	74.2	161	25.8
unknown	698	73.9	246	26.1
<i>Insurance</i>				
Medicaid	22,512	76.9	6,746	23.1
Other	14,463	77.4	4,230	22.6
<i>Education</i> [†]				
No HS degree	4,014	78.9	1,071	21.1
HS degree or GED	7,533	78.4	2,074	21.6
Associate or Bachelor degree	10,081	77.0	3,017	23.0
Post graduate	6,737	77.0	2,015	23.0
<i>Preterm Birth</i> [†]				
No	33,616	76.8	10,177	23.2
Yes	3,259	80.4	797	19.6
<i>Plurality</i> [†]				
Singleton	36,309	77.0	10,835	23.0
Multiple	666	82.5	141	17.5
<i>Parity</i> [†]				
1	15,612	76.4	4,826	23.6
2	12,351	77.0	3,699	23.0
3+	9,012	78.6	2,451	21.4
<i>Married</i> [†]				
No	15,445	77.4	4,502	22.6
Yes	21,414	76.8	6,461	23.2

† P<0.01

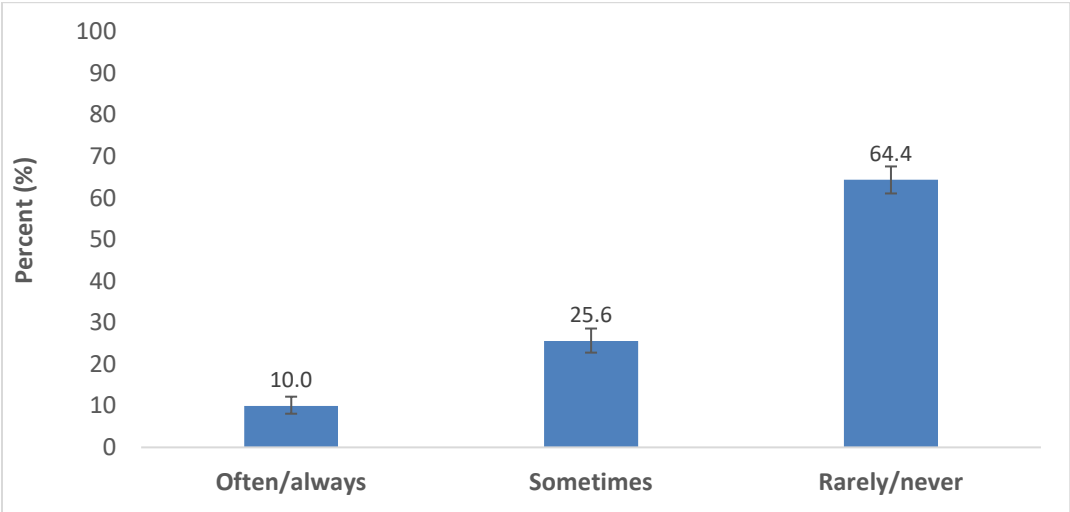
Table 2. Women’s Characteristics by Results of PPD Screening, Jan 2019 -Dec 2019, MA

	Screen Results			
	Negative		Positive	
	N	%	N	%
<i>Race/Ethnicity[†]</i>				
White non-Hispanic	5,282	89.5	618	10.5
Black non-Hispanic	1,036	90.0	115	10.0
Asian/PI non-Hispanic	1,005	93.1	74	6.9
Hispanic	2,122	87.0	317	13.0
American Indian or Other	148	91.9	13	8.1
unknown	222	90.2	24	9.8
<i>Insurance[†]</i>				
Medicaid	5,865	86.9	881	13.1
Other	3950	93.4	280	6.6
<i>Education[†]</i>				
<HS	928	86.6	143	13.4
HS/GED	1,788	86.2	286	13.8
Some College/Associate Degree	2,770	91.8	247	8.2
Bachelor Degree	1,877	93.2	138	6.8
Graduate Degrees	2,452	87.6	347	12.4
<i>Preterm Birth[*]</i>				
No	9,119	89.6	1,058	10.4
Yes	694	87.1	103	12.9
<i>Plurality</i>				
Singleton	9,692	89.5	1,143	10.5
Multiple	123	87.2	18	12.8
<i>Parity</i>				
1	4,333	89.8	493	10.2
2	3,314	89.6	385	10.4
3+	2,168	88.5	283	11.5
<i>Married[†]</i>				
No	3,867	85.9	635	14.1
Yes	5,940	91.9	521	8.1

*P <0.05

[†]P<0.01

Figure 2. Experience of postpartum depression (PPD) symptoms in 2020, MA PRAMS



The 18 MHVI Communities in Massachusetts include:

- Boston
- Brockton
- Chelsea
- Everett
- Fall River
- Fitchburg
- Holyoke
- Lawrence
- Lowell
- Lynn
- New Bedford
- North Adams
- Pittsfield
- Revere
- Southbridge
- Springfield
- Webster
- Worcester