Original Research

Improved Perinatal Depression Screening, Treatment, and Outcomes With a Universal Obstetric Program

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OBJECTIVE: To evaluate whether universal prenatal and early postnatal screening for depression leads to increased detection, subsequent intervention, and improved depressive symptom outcomes.

METHODS: We conducted a population-based retrospective cohort study of 97,678 pregnant Kaiser Permanente Northern California members during three phases of the Universal Perinatal Depression Screening Program (preimplementation, rollout, fully implemented) from 2007 through 2014. Depression screening scores (Patient Health Questionnaire-9), depression diagnoses, individual counseling visits, demographic characteristics, and medication dispensings were extracted from electronic health records and pharmacy databases. The percentage of women screened, new depression diagnoses, and women receiving treatment were compared among the three phases (tests of trend). Changes in depressive symptom scores up to 6 months postpartum were assessed (rollout and fully implemented phases).

RESULTS: A significant increase emerged in the percentage of women screened over the three phases ranging from less than 1% (n=122) (preimplementation) to 98% (n=41,124) (fully implemented) ($P<.001$). Identification of a new depression diagnosis increased from 8.2% (n=1,341) (preimplementation) to 11.5% (n=4,943) (fully implemented) ($P<.001$). Although the observed percentage of women receiving treatment decreased (60.9% [preimplementation] to 47.1% [fully implemented]), significant increases in the expected percentage of women receiving treatment emerged (42.6% [preimplementation] to 47.1% [fully implemented]; $P<.05$). Similar trends were noted for women with Patient Health Questionnaire-9 scores of 15 or greater (greater severity), highlighting an increase in expected percentage of women receiving treatment (5.9% [preimplementation] to 81.9% [fully implemented]; $P<.05$). In the fully implemented phase, improvements in depressive symptoms up to 6 months postpartum were noted.

CONCLUSION: These data provide evidence of benefit for universal perinatal depression screening programs regarding depression identification and treatment receipt and suggest improvement in symptom outcomes for women in screening programs, especially among integrated health care systems.

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Depression is the leading cause of disability in women.[1] Perinatal depression, which includes both major and minor depressive episodes, is estimated to affect between 12 and 20% of pregnant and postpartum women within the first year after delivery.[2] The consequences of maternal depression can range from preterm delivery,[3] negative maternal–infant interaction,[4] child behavioral problems,[5] and, in severe cases, suicide and infanticide.[6]

Perinatal depression is underdiagnosed[7] and can often go unrecognized because women may not report their symptoms. Screening for depression with a validated tool compared with not screening increases the rate of detection of depression,[8] and, it

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stands to reason that treatment may improve outcomes, yet many obstetricians or primary care physicians do not screen for perinatal depression for several reasons ranging from insufficient training to lack of knowledge regarding where to refer.[9–11] In May 2015, the American College of Obstetricians and Gynecologists (the College) recommended that clinicians screen patients at least once during the perinatal period for depression symptoms using a validated tool.[12] However, the College acknowledged that the evidence supporting universal screening to identify and treat perinatal depression to improve outcomes is limited. The U.S. Preventive Services Task Force also recommended universal perinatal screening based on limited evidence (level B). More evidence is needed on outcomes associated with universal perinatal depression screening programs.

Kaiser Permanente Northern California recently implemented a regionwide universal perinatal depression screening program. The objective of this study was to evaluate whether universal prenatal and early postnatal screening for depression leads to increased detection, subsequent intervention, and improved depressive symptom outcomes.

MATERIALS AND METHODS

The setting for this study is Kaiser Permanente Northern California, a large group practice within an integrated health care delivery system that provides comprehensive medical services to more than 3.6 million members and has approximately 37,000 pregnancies and deliveries in a 14-county region. Kaiser Permanente Northern California employs more than 500 obstetric physicians and nurse practitioners and more than 100 certified nurse-midwives. All 15 regional medical centers (with 48 associated office facilities) have obstetrics and gynecology, adult family medicine, pediatric, and behavioral medicine–psychiatry departments. Coverage is provided for approximately 30% of the northern California population and is similar demographically, racially, and ethnically to the population living in the geographic area. Information on diagnoses, procedures, hospitalizations, outpatient visits, laboratory tests, and prescribed medications are maintained within administrative and comprehensive electronic health records.

From 2009 to 2012, Kaiser Permanente Northern California progressively implemented a universal perinatal depression screening program with women being screened three times using the Patient Health Questionnaire-9: twice during pregnancy (first prenatal visit and 26–28 weeks of gestation, the Glucola visit) and 3–8 weeks postpartum. Details about the development and implementation of the screening program are described in detail elsewhere.[13] Briefly, before 2009 women were not screened routinely, generally only if they were symptomatic, but depression diagnoses during pregnancy and postpartum were recorded in the electronic health record.

In 2009, three medical centers began piloting universal perinatal depression screening with screening during at least of one of three pregnancy and postpartum periods (early pregnancy, late pregnancy, and postpartum). From 2009 to 2012, referred to as the "rollout phase," several guidelines for the program were developed and implemented. Medical assistants asked patients to complete the Patient Health Questionnaire-9 form at rooming at the designated visits and the clinician reviewed the form during the visit. If a woman's Patient Health Questionnaire-9 score was 10 or higher, the guideline recommendations included symptom assessment and review of related current and past medical history. Using their clinical judgment, if indicated, the clinician documented a depression diagnosis in the electronic health record for screen-positive women. Perinatal depression champions and chiefs were responsible for educating clinicians and staff at the sites. Medical centers developed varying collaborations with behavioral health to facilitate referrals for treatment for screen-positive women. Over this time the guidelines evolved to include reassessments of women identified with depression with a subsequent Patient Health Questionnaire-9 evaluation during a follow-up encounter (office visit, online encounter, or telephone visit) within 120 days. By 2010, all medical centers regionwide conducted screening during at least one of the pregnancy and postpartum periods.

By 2012, all obstetric offices in the region had implemented the universal perinatal depression screening program, which included screening at all three time periods, referring for treatment or providing treatment, and conducting follow-up assessments. This is referred to as the fully implemented phase.

The Patient Health Questionnaire-9 has been validated in many studies as an instrument for screening for depression with high sensitivity (greater than 88%) and specificity (greater than 88%) in obstetric patients[14–18] as well as a tool to establish depression severity and outcome.[19] The nine-question screener scores range from 0 to 27. A score of 1–4 suggests minimal depression, 5–9 mild depression, 10–14 moderate depression, 15–19 moderately

severe depression, and 20–27 suggests severe depression. The Patient Health Questionnaire-9 was chosen as the single screening instrument, to enable its use across the obstetric, adult family medicine, and behavioral health departments, knowing that this choice balanced out many factors including scientific validity and feasibility for a large-scale population-based screening program.

A population-based retrospective cohort study of pregnant women aged 18 years and older was conducted and included women who had at least one obstetric visit during each of the following three periods of pregnancy and postpartum: the first 20 weeks of gestation (early pregnancy), 20 weeks of gestation through delivery (late pregnancy), and 3 months postpartum (postpartum). Inclusion criteria also required the first prenatal visit to occur during one of the three distinct phases in relation to the implementation of the Universal Perinatal Depression Screening Program: 1) preimplementation–first prenatal visit date after April 1, 2007, and birth date before January 1, 2009; 2) rollout–first prenatal visit date after April 1, 2009, and birth date before January 1, 2012; and 3) fully implemented–first prenatal visit date after April 1, 2012, and birth date before October 1, 2014. The timeframes for each phase were established to minimize the possibility of a woman's prenatal and postpartum visits crossing two phases and confounding the ability to attribute results to one phase. If a woman had more than one pregnancy during the study period, only the first pregnancy was included to avoid nonindependent observations. The final study population included 97,678 pregnant women. This study was approved by the Kaiser Permanente Northern California institutional review board.

Women were considered to have a new depression diagnosis if they had at least one International Classification of Diseases, 9th Revision diagnosis code for depression (296.20–296.25, 296.30–296.35, 298.0, 300.4, 309.0, 309.1, 648.4, or 311) during pregnancy or up to 3 months after delivery and no depression diagnosis or antidepressant drug dispensing in the year before their last menstrual period. Treatment for a new depression diagnosis was defined as having at least one antidepressant medication dispensed or at least one individual counseling visit or attendance at a group class that occurred on the same date or after the new depression diagnosis through 6 months postpartum. Antidepressant medications were predominantly selective serotonin reuptake inhibitors (citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, and sertraline) but also included tricyclic acids (amitriptyline, clomipramine, desipramine, nortriptyline, doxepin, imipramine, protriptyline, and trimipramine), selective norepinephrine reuptake inhibitors (desvenlafaxine, duloxetine, milnacipran, and venlafaxine), monoamine oxidase inhibitors (phenelzine and tranylcypromine), and others (trazodone, bupropion, atomoxetine, mirtazapine, nefazodone, and vilazodone).

Data on maternal demographic and socioeconomic characteristics including age at delivery, marital status, race–ethnicity, and Medicaid status during pregnancy as well as previous mental health diagnoses any time before their last menstrual period were ascertained.

Data are reported as frequencies and percentages. Tests of trend were conducted to compare overall Patient Health Questionnaire-9 screening rates and rates of depression diagnoses across each of the three phases of the universal perinatal depression screening program (preimplementation, rollout and fully implemented), whereas χ^2 tests were used to compare Patient Health Questionnaire-9 scores (less than 10, 10–14, 15+) and screening rates for each pregnancy and postpartum period (ie, early pregnancy, late pregnancy, and postpartum).

Treatment rates and type of treatment received were also compared across the three phases of the program for all women with a depression diagnosis and separately for women with a new depression diagnosis and Patient Health Questionnaire-9 score of 15 or greater indicating moderately severe to severe depression. Additional analyses were conducted to address limitations in comparing the percentage of women receiving treatment across the phases including: 1) the increasing number of women in each phase; 2) underascertainment of depression diagnoses before the screening program and thus a smaller number of women identified as needing treatment; and 3) the potential that women diagnosed with depression before the screening program were more severe. Under the assumption that the screening program more accurately identified the true percentage of women with depression in the population, the percentage of women with depression in the fully implemented phase was used to calculate the expected number of women with depression in the other two phases. An expected percentage of treatment was then calculated using the observed number of women in treatment as the numerator and the expected number of women with a depression diagnosis in the denominator (preimplementation and rollout phases). This was conducted for both new depression diagnosis and

new depression diagnosis and Patient Health Questionnaire-9 score of 15 or greater. A Cochran-Armitage test for trend was conducted.

Improvement in depressive symptoms was assessed within each phase of the program through three metrics: 1) the percentage of women whose Patient Health Questionnaire-9 score improved by 50% or more; 2) the percentage of women with a final Patient Health Questionnaire-9 score less than 10; and 3) the percentage of women with a 5-point or greater drop in Patient Health Questionnaire-9 score from the highest Patient Health Questionnaire-9 to the final Patient Health Questionnaire-9 score up to 180 days (6 months) postpartum, which was considered to indicate clinical improvement.[19,20] Improvement in depressive symptoms was evaluated overall and separately for women with high severity (Patient Health Questionnaire-9 score of 15 or greater).

Additional χ^2 analyses were conducted using the fully implemented phase to address potential bias. First we compared women in our sample with women excluded as a result of not having a prenatal or postpartum visit during all three time periods. Among women with a depression diagnosis or Patient Health Questionnaire-9 score of 15 or greater, we also compared those with a follow-up Patient Health Questionnaire-9 to those without. Analyses were performed using SAS 9.3.

RESULTS

A total of 97,678 women were included in the analyses, and their characteristics are shown in Table 1 stratified by phase (preimplementation, rollout, fully implemented). A surge in the percentage of women screened for depression at least once occurred over the three phases of the implementation of the program, ranging from less than 1% in the preimplementation phase to 97.5% once fully implemented (Table 2). There were markedly higher rates of screening in each of the three perinatal time periods by the time the universal perinatal depression screening program was fully implemented (49.0%) compared with the preimplementation (0%) and rollout (25.1%) phases ($P<.001$). When fully implemented, on average, women were screened 2.5 times during their pregnancy. Finally, identification of new perinatal depression diagnoses significantly increased over the three phases from 8.2% (preimplementation) to 9.5% (rollout phase) to 11.7% (fully implemented) (test of trend, $P<.001$).

Table 1. Descriptive Statistics for Women in the Three Phases of the Universal Perinatal Depression Screening Program in the Kaiser Permanente Medical Care Program Northern California (N=97,678)

Patient Characteristics	Phase 1: Preimplementation	Phase 2: Rollout	Phase 3: Fully Implemented	*P*
Total	16,355	39,134	42,189	
Maternal age at delivery (y)				
20 or younger	757 (4.6)	1,655 (4.2)	1,622 (3.8)	<.001
21–30	7,762 (47.5)	17,840 (45.6)	18,478 (43.8)	
31–40	7,315 (44.7)	18,432 (47.1)	20,659 (49.0)	
Older than 40	521 (3.2)	1,207 (3.1)	1,430 (3.4)	
Race				
White	6,651 (40.7)	15,162 (38.7)	16,328 (38.7)	<.001
Black	1,176 (7.2)	2,596 (6.6)	2,712 (6.4)	
Asian	3,387 (20.7)	9,348 (23.9)	10,626 (25.2)	
Hispanic	4,182 (25.6)	9,832 (25.1)	10,313 (24.4)	
Other	959 (5.9)	2,196 (5.6)	2,210 (5.2)	
Marital status				
Married or has a partner	13,082 (80.0)	31,197 (79.7)	31,562 (74.8)	<.001
Single, divorced, or widowed	3,187 (19.5)	7,812 (20.0)	10,363 (24.6)	
Others or unknown	86 (0.5)	125 (0.3)	264 (0.6)	
Medicaid during pregnancy				
Yes	706 (4.3)	1,861 (4.8)	2,011 (4.8)	<.166
No	15,585 (95.3)	37,131 (94.9)	39,991 (94.8)	
Unknown	64 (0.4)	142 (0.4)	187 (0.4)	
Previous mental health diagnoses				
Depression	3,198 (19.5)	7,632 (19.5)	7,853 (18.6)	<.001
Other mental health diagnoses	3,182 (19.5)	7,408 (18.9)	7,928 (18.8)	

Data are n (%) unless otherwise specified.

Table 2. Comparisons of Screening for Depression and Identification of Depression for the Three Phases of the Universal Perinatal Depression Screening Program in the Kaiser Permanente Medical Care Program Northern California (N=97,678)

	Phase 1: Preimplementation (n=16,355)	Phase 2: Rollout (n=39,134)	Phase 3: Fully Implemented (n=42,189)	χ^2 *P*
Screened				
Yes	122 (0.7)	31,777 (81.2)	41,124 (97.5)	<.001*
No	16,233 (99.3)	7,357 (18.8)	1,065 (2.5)	
PHQ-9 screening score†				
15 or higher	40 (0.2)	1,701 (4.3)	2,556 (6.1)	<.001
10–14	15 (0.1)	2,525 (6.5)	3,665 (8.7)	
Less than 10	67 (0.4)	27,551 (70.4)	34,903 (82.7)	
No. of pregnancy and postpartum periods screened				
1	3 (0.0)	3,578 (9.1)	3,531 (8.4)	<.001
2	115 (0.7)	18,379 (47.0)	16,906 (40.1)	
3	4 (0.0)	9,820 (25.1)	20,687 (49.0)	
Depression diagnosis				
New depression diagnosis (among women screened)	63 (0.4)	3,219 (8.2)	4,865 (11.5)	<.001*
Any depression diagnosis ever (includes pregnancy and postpartum; women screened and not screened)	4,228 (25.9)	10,442 (26.7)	11,579 (27.4)	<.001*
New depression diagnosis (among women screened and not screened)	1,341 (8.2)	3,700 (9.5)	4,943 (11.7)	<.001*
Depression severity				
New depression diagnosis and PHQ-9 score 15 or greater	30 (0.2)	849 (2.2)	1,307 (3.1)	<.001*

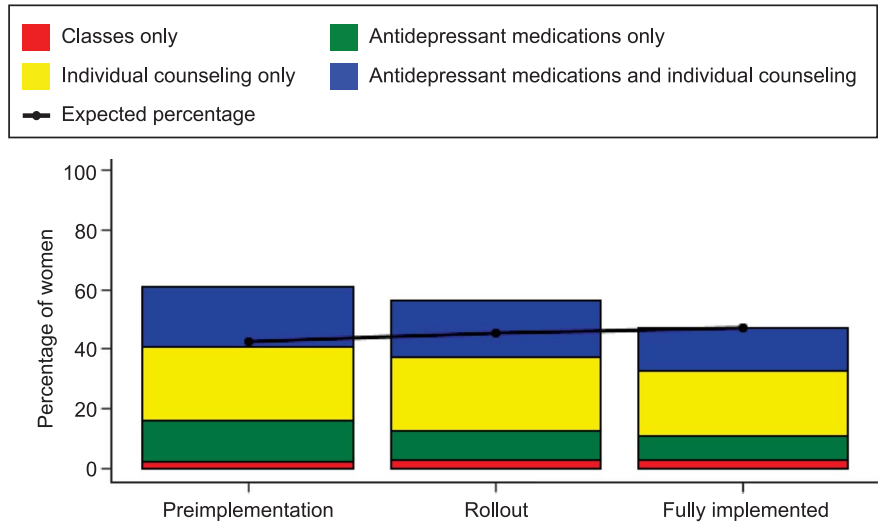
PHQ-9, Patient Health Questionnaire.
Data are n (%) unless otherwise specified.
* Test of trend (adjusted for maternal age, race, marital status, and mental health history).
† Highest score from last menstrual period through 90 days postpartum.

Over the three phases, the observed percentage of women with a new depression diagnosis who received treatment decreased from 60.9% (preimplementation) to 47.1% (fully implemented) ($P<.05$). The percentage of women receiving treatment among those expected to have had a new depression diagnosis increased significantly from 42.6% (preimplementation) to 47.1% (fully implemented) ($P<.001$) (Fig. 1A).

The percentage of women with a Patient Health Questionnaire-9 score of 15 or greater (indicating moderate or severe depression) receiving treatment declined over time between the three phases from 100% preimplementation to 81.9% in the fully implemented phase ($P<.05$) (Fig. 1B). However, our sensitivity analyses demonstrated a significant increase in the percentage of women receiving treatment among the expected number of women with a depression diagnosis and Patient Health Questionnaire-9 score of 15 or greater from 5.9% (preimplementation) to 81.9% (fully implemented) (test of trend, $P<.001$) (Fig. 1B). This analysis did not identify any woman with suicide, suicide attempt, or infanticide, or attempt.

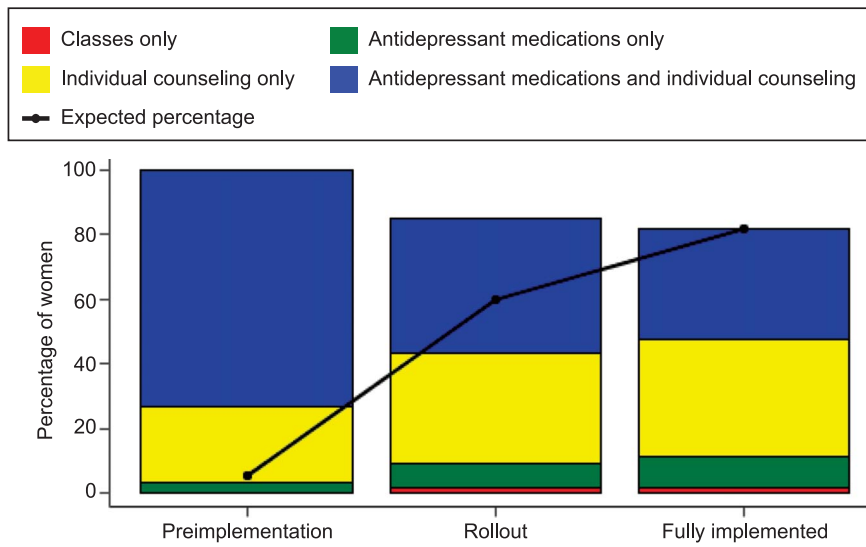
Significant improvements in depressive symptoms up to 6 months (180 days) postdiagnosis were noted for women in the rollout phase and the fully implemented phase (Table 3). Results are not shown for the preimplementation phase as a result of fewer than 10 women receiving a follow-up Patient Health Questionnaire-9. Once the program was fully implemented, 81.7% of the women had Patient Health Questionnaire-9 scores less than 10 on their final follow-up Patient Health Questionnaire-9 and 60.2% of the women's Patient Health Questionnaire-9 scores decreased by a minimum of 50%. Additionally, 48.7% of the women demonstrated a minimum 5-point improvement in their Patient Health Questionnaire-9 scores.

Of those with a Patient Health Questionnaire-9 score of 15 or greater, 57.3% had depression scores less than 10 on their final Patient Health Questionnaire-9 follow-up (Table 4). Similarly, 56.1% of the women's Patient Health Questionnaire-9 scores improved by 50% or more. Overall, 74.8% of the women demonstrated a minimum 5-point improvement in their Patient Health Questionnaire-9 scores.



	n	n	n
Treatment	816	2,083	2,326
Depression diagnosis (observed)	1,341	3,700	4,943
Depression diagnosis (expected)	1,916	4,585	4,943

A



	n	n	n
Treatment	30	723	1,071
Depression diagnosis (observed)	30	849	1,307
Depression diagnosis (expected)	507	1,212	1,307

B

Fig. 1. Treatment receipt for (**A**) women with a new depression diagnosis (regardless of screening status) and (**B**) women with a Patient Health Questionnaire (PHQ-9) score of 15 or greater in the three phases of the Universal Perinatal Depression Screening Program.

Avalos. Perinatal Depression Screening Outcomes. Obstet Gynecol 2016.

Table 3. Depressive Symptom Improvement Measures Comparing the Highest (Up to 90 Days Postpartum) and Last (Within 180 Days Postpartum) Patient Health Questionnaire-9 Scores for Women Screened and Given a New Depression Diagnosis for Phases 2 and 3 of Implementation of the Universal Perinatal Depression Screening Program

	Phase 2: Rollout	Phase 3: Fully Implemented
Total no. of women with a new depression diagnosis	3,219	4,865
Women with a follow-up PHQ-9	1,803	3,563
Follow-up PHQ-9 score less than 10	1,426 (79.1)	2,912 (81.7)
50% or greater improvement in symptoms*	1,039 (59.4)	2,080 (60.2)
Improvement of at least 5 points*	882 (50.7)	1,685 (48.7)

PHQ-9, Patient Health Questionnaire.
Data are n or n (%).
* For phase 2: denominator is 1,751 (52 women were excluded as a result of the highest PHQ-9 score being equal to 0); for phase 3: denominator is 3,454 (109 women were excluded as a result of highest PHQ-9 score being equal to 0).

We found similar percentages of women with a new depression diagnosis (12.0% compared with 11.7%) and higher severity symptoms (Patient Health Questionnaire-9 score of 15 or greater; 6.2% compared with 5.3%) for women in our sample and not as a result of not having a prenatal or postpartum visit during all three time periods. However, we did note slightly higher rates of treatment overall (47.1% compared with 38.2%) as well as for women with a Patient Health Questionnaire-9 score of 15 or greater (81.9% compared with 76.4%) in our sample compared with not.

Among those with a depression diagnosis, black women (14.1% compared with 10.7%, $P<.01$) and women on Medicaid (9.1% compared with 7.6%, $P<.01$) were less likely to have a follow-up. Among those with severe depression (Patient Health Questionnaire-9 greater than 15), women on Medicaid during pregnancy were less likely to have a follow-up Patient Health Questionnaire-9 (9.9% compared with 7.4%, $P<.05$). No other significant differences emerged.

DISCUSSION

Our findings demonstrate the effectiveness of universal screening for enhancing detection and treatment of perinatal depression. Although symptoms improved for a majority of the women in the fully implemented phase, our ability to assess the effect of the program on symptom improvement was limited as a result of the lack of follow-up Patient Health Questionnaire-9s during preimplementation. Our findings suggest support for recommendations by the College and the U.S. Preventive Services Task Force that clinicians screen patients at least once during the perinatal period.[21] Kaiser Permanente Northern California's large universal perinatal depression screening program provided a valuable opportunity for assessing the effectiveness of obstetric office-based screening programs.

Screening significantly increased over the three phases. Once fully implemented, nearly all women were screened during at least two of the pregnancy and postpartum periods. Identification of depression and depressive symptoms also increased significantly with the use of a validated screening tool. The higher proportion of women receiving treatment before full implementation may be the result of a greater severity of depression among women identified before implementation of the screening

Table 4. Depressive Symptom Improvement Measures Comparing the First Patient Health Questionnaire-9 Score of 15 or Greater (Up to 90 Days Postpartum) and the Last Patient Health Questionnaire-9 Given Within 180 Days Postpartum for Phases 2 and 3 of Implementation of the Universal Perinatal Depression Screening Program

	Phase 2: Rollout	Phase 3: Fully Implemented
Total no. of women with a new depression diagnosis	849	1,307
Women with a follow-up PHQ-9	550	1,074
Follow-up PHQ-9 score less than 10	289 (52.6)	615 (57.3)
50% or greater improvement in symptoms	294 (53.5)	602 (56.1)
Improvement of at least 5 points	398 (72.4)	803 (74.8)

PHQ-9, Patient Health Questionnaire.
Data are n or n (%).

program. Our analyses evaluating whether the program was successful at improving the percentage of women receiving treatment for those expected to need it noted a significant increase over the three phases. In the fully implemented phase, 5% of all pregnant and postpartum women, nearly half of the women with a new depression diagnosis and 82% with severe depression, received treatment at Kaiser Permanente. Comparatively, treatment rates for women with severe depression in the fully implemented phase were similar to rates reported by Dietz et al[22] yet eclipse those of national samples of pregnant or postpartum women screened for major depression. These studies report a range of treatment receipt for depression between 14% and 50%.[23,24] Other samples of women identified with depression in obstetric or hospital-based settings have also reported low rates of treatment (14–20%).[25–27]

It is not known whether women who did not receive treatment were offered treatment or improved without need. Challenges exist in getting women to engage in treatment including logistic challenges, stigma, child care, and time constraints.[28,29] Also our study did not capture care obtained outside of Kaiser Permanente Northern California (through secondary insurance) or through community or religious resources. We found a majority of the women with higher severity symptoms and likely in greater need of help accessed mental health services.

Improvement in depressive symptoms by 6 months postdiagnosis was observed for a majority of women in the fully implemented phase. Women on Medicaid and black women (with a depression diagnosis) were less likely to have a follow-up, which may have affected results. We note, however, that the differences in percentage of women with a follow-up and not were minimal. A strength of Kaiser Permanente Northern California's universal perinatal depression screening program is the collaboration with mental health care specialists to support and provide treatment. Our rates of improvement exceed those from clinical trials that relied on trained family medicine providers for treatment of pregnant women.[20,30,31] Taken together, these studies underscore the importance of having treatment services whether in mental health or through primary care available for women. The greater treatment response in our study may underscore the importance of collaborations with behavioral or mental health specialists to support and provide treatment. Smaller scale practices should consider developing alliances and agreements with "in-network" and community behavioral health clinicians and resources.

Few differences were found between women who did not have a prenatal or postpartum visit during all three time periods and the women in our sample. Women in our sample had slightly higher rates of treatment. This might be expected given that women who do not attend all of the recommended perinatal health care appointments may be less likely to utilize services in general. The equivalent rates of depression may suggest populations to target for treatment.

Lastly this study is a retrospective, observational study and not a randomized controlled trial. Although randomized controlled trials are generally considered the gold standard to measure efficacy, our study's strength is the ability to measure the effectiveness of universal perinatal depression screening.

Our findings highlight the effectiveness of universal perinatal depression screening, demonstrating its potential for success in real-world settings. This study complements the recent systematic review of randomized controlled trials supporting the efficacy of universal screening.[32] The Kaiser Permanente Northern California experience demonstrates the capacity of clinicians to screen, identify, and help women obtain treatment in collaboration with mental–behavioral health services leading to improved depressive symptoms. Finally, our findings suggest support for the College's and U.S. Preventive Services Task Force's recent recommendations for screening pregnant and postpartum women for depression.

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