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Perinatal Obstetric Office Depression Screening and Treatment: Implementation in a Health Care System

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Abstract

Perinatal depression affects between 12–20% of pregnant and postpartum women and is underdiagnosed. The American College of Obstetricians and Gynecologists and the U.S. Preventive Task Force recently recommended universal perinatal depression screening. We discuss challenges to instituting universal screening, describe the development and implementation between 2007–2014 of Kaiser Permanente Northern California's successful program, and highlight key measures of success. A quality improvement system approach with four steps guided development: 1) identify and use best practices; 2) identify champions and educate clinicians; 3) use data that drive performance; and 4) streamline office workflow. Clinical success was determined by at least 50% improvement in depression care metrics from diagnosis to 120 days afterwards. Depression diagnoses, PHQ-9 scores, medication dispensation, and treatment for all births in 2014 (N=37,660) were extracted from electronic health records. Ninety six percent of pregnant and postpartum women were screened at least once. Fourteen percent screened positive for depression (PHQ-9 score of 10 or greater). About 6% of pregnant and postpartum women had severe depression with a PHQ-9 of 15 or greater and a depression diagnosis, and 80% of these women received treatment. Forty percent of women with a depression diagnosis demonstrated improved symptoms. Kaiser Permanente Northern California's universal perinatal depression screening program can serve as a model for the feasibility and clinical effectiveness of universal depression screening in obstetric care.

INTRODUCTION

Perinatal depression affects between 12–20% of mothers during or after their pregnancy[1], yet is severely underdiagnosed resulting in high rates of untreated perinatal depression[2]. Excellent screening instruments with high sensitivity and specificity for perinatal depression exist. However, few Obstetric clinicians use them despite the multiple treatment options available.

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Recently the American College of Obstetrics and Gynecologists and the US Preventive Services Task Force have recommended that clinicians screen patients at least once during the perinatal period for depression and anxiety symptoms using a validated tool[3]. Clinical offices will now be challenged to to provide universal perinatal depression screening.

Kaiser Permanente Northern California recently developed and implemented a region-wide Universal Perinatal Depression Screening Program in clinical perinatal care. In this article, we discuss the barriers to implementing a universal perinatal depression screening program in an obstetric clinical office setting, and describe processes to overcome them and implement a successful program. In an accompanying article[4] the outcomes of the implementation of this Depression Screening Program are described.

Barriers to Implementing Screening

With routine perinatal care, obstetric clinicians are ideally situated to screen and identify pregnant and postpartum women with depression, yet few screen routinely[5]. Barriers to screening by perinatal care providers include insufficient obstetrician training[6], unfamiliarity with a validated screening tool, lack of time in short visits[6], competing demands[7], lack of knowledge regarding where to refer[8], lack of community behavioral health resources[9], and lack of financial incentive for clinicians to screen as part of perinatal care[8].

Prior to program implementation, few Kaiser Permanente Northern California clinicians had received training to recognize, diagnose or treat depression and relied on their behavioral health colleagues to evaluate, diagnose and treat. Few clinicans used any screening tool as part of their usual clinical care, felt equipped to assess for depression, or were knowledgeable about prescribing antidepressant medication or recommending other proven treatments such as support groups, group visits, classes, and individual therapy. Lastly, while every medical center provided behavioral health and patient education services, from an obstetrician perspective, there was no clear path to these resources. As a result of all of the above factors, clinicians had been reluctant to ask about depression for fear of not being able to provide the expertise to treat.

Setting

Kaiser Permanente Northern California’s medical program is a large group practice, prepaid health plan that provides comprehensive medical services to over 3.6 million members, with approximately 1,033,000 women age 12–50. This system provides care to nearly 30% of the population and is similar demographically, racially and ethnically to the population living in the same geographic area.

Kaiser Permanente Northern California hospitals deliver over 37,000 births a year in 15 of its 18 hospitals, in a 14-county region in Northern California. Kaiser Permanente Northern California is structured into 15 medical centers, with each medical center having one or more medical offices or hospitals. Each medical center has an Obstetrics and Gynecology, Adult and Family Medicine, Pediatric, Behavioral Health and Psychiatry, and patient education department. Kaiser Permanente Northern California employs over 500 obstetric

physicians and nurse practitioners, and approximately 100 Certified Nurse-Midwives, with greater than 435,000 prenatal visits a year in over 45 medical offices.

On average, a Kaiser Permanente Northern California mother with a normal pregnancy sees her clinician for 10–12 prenatal visits, and one postpartum visit between 3–8 weeks after delivery. Medical assistants support clinicians for office clinical care. Clinicians use standardized prenatal screening forms (general health, social history, substance use, genetic risk) during entry into prenatal care as well standardized prenatal visit intervals (6–12, 16, 22, 28, 32, 36, 38, 40 and 41 gestational weeks, and postpartum). Prenatal visit questionnaires, diagnoses, and progress notes are entered and stored in a pregnancy episode in the EPIC electronic health record (EHR). Complete databases are maintained on all hospitalizations, outpatient visits, laboratory tests, and prescribed medications.

Development and implementation of the Perinatal Depression Screening Program

In 2007, a missed diagnosis of perinatal depression in a Kaiser Permanente Northern California patient was reviewed, and demonstrated that usual prenatal care was not sufficient to identify perinatal depression. This case served as a springboard for action and resulted in a Kaiser Permanente Northern California leadership commitment to improve perinatal depression care. Engagement of leadership was a crucial first step to incorporating perinatal depression screening into usual care region-wide.

A quality improvement system approach with four strategic steps at the region-wide level was critical for successful implementation: 1) identify and use best practices; 2) identify champions and educate clinicians; 3) use data that drive performance; and 4) streamline office workflow.

1. Identify and Use of Best Practices

In 2007, Kaiser Permanente Northern California leadership solicited input from three (of the 15) medical centers that had recently started screening for perinatal depression. The feedback from these centers shaped region-wide policies and clear step-by-step recommendations for other sites.

The following common and critical elements were identified for successful implementation;

- Identification of a site physician lead (Champion)
- Formation of a Task Force for planning and oversight (e.g. OB and Behavioral Health office leadership, office manager)
- Collaboration with Behavioral Health/Psychiatry for referral, consultation, and joint care
- Screening incorporated into routine perinatal office workflow
- Education of clinicians about perinatal depression
- Staff orientation to workflow processes

Differences in implementation between these three sites highlighted the need for 1) a single depression screening tool to be used by all clinics in the region, 2) a clear determination of when to screen as part of usual care, and 3) incorporation of the selected tool into Kaiser Permanente Northern California's EHR. Leadership assessed the literature and spoke with national specialists to identify a screening tool and determine when to administer the screening. In choosing which tool to use, prior testing and validation, ease of use, ability to be incorporated into the EHR, universal use by obstetrics, medicine, and behavioral health services, and ability to measure clinical outcome were all considered. The PHQ-9 (validated in studies as an instrument for screening for depression with high sensitivity (> 88%) and specificity (> 88%) in obstetric patients[10,11]) was chosen. Based on research citing equal prevalence of depression in the prenatal and postpartum periods as well as the need to identify women with a pre-pregnancy history of depression[1] it was decided that screening would be incorporated into usual perinatal care at three different time points:the first prenatal visit (or early pregnancy), 2) 24–28 week "glucola visit", and 3) the 3–8 week postpartum visit.

Capability of recording the PHQ-9 score as well as a flowsheet that trended the score was added to the EHR. The electronic PHQ-9 flowsheet allowed clinicians and patients to monitor clinical progress over time and across primary and behavioral clinical care services.

2. Identify Champions and Educate Clinicians

Leadership-chosen champions for each medical center were charged with building a local task force, overseeing local program planning and implementation, and serving as a subject matter experts for perinatal depression. The champions were responsible for educating the providers and staff at their sites on 1) perinatal depression, 2) administering and assessing the PHQ-9 score, 3) training staff on how to enter the PHQ-9 scores into the EHR system, and 4) training clinicians on appropriate encounter diagnosis coding. Champions were asked to help distribute regionally produced materials such as pocket cards about screening and treatment treatment as they were developed. Most importantly when screening began, champions role-modeled that incorporating depression screening as part of usual care was feasible for busy clinicians.

The goals of each medical center's local task force were to plan for and implement the screening program by focusing on office staff and rooming work flow, and developing interdepartmental relations to define the referral processes and local resource lists specific to medical center site (e.g. depression class, depression support group, individual counseling services, Obstetric clinician to behavioral health clinician phone consultation). Each local task force included the perinatal depression champion, the office manager, a behavioral health clinician, and a health education specialist at their site to identify or create potential resources.

The champions also participated in a region-wide collaborative task force which met by webinar once a month to discuss challenges and progress of implementation, to problem solve across sites, and to help develop practice aid materials for clinicians such as pocket cards. To further enhance clinician knowledge about perinatal depression, local and regional medical education talks were offered.

3. Use data that drive performance

Quarterly data reports from the EHR was created to monitor screening and eventually treatment success for each medical center.

Implementation began in 2010. Screening three times during pregnancy was incrementally implemented over 2 years. Many medical centers started screening at the postpartum visit and extended screening to the first and second trimesters by year 2 of implementation. The data progress reports initially measured percentage of women screened at least once during pregnancy or postpartum. The average number of times a woman was screened during her pregnancy was added to data reports in year 2..

After the full screening plan was successfully implemented in year 3, the focus changed to measuring whether women diagnosed with depression were assessed again with a subsequent PHQ-9 screening and encounter (office visit, online encounter or telephone visit). Internal system wide depression care metrics called “PMOOD” were created to assess clinical follow-up. “PMOOD” measured percent women with a depression diagnosis, an initial Patient Health Questionnaire [PHQ-9) score, and a second PHQ-9 assessment within 120 days. This was an incremental step to the future plan of assessing clinical outcome and success.

Beginning in year 4, clinical success was defined as at least 50% improvement in depression care metrics from diagnosis to 120 days afterwards. To measure this, another measurement was added. This new metric, “PMOOD-significantly improved,” measured percent women with a depression diagnosis, whose PHQ9 score dropped by at least 50% within 120 days. In the latter part of year 4 and year 5, “PMOOD-remission” was added as a third metric to measure clinical depression remission. “PMOOD-remission” measured percent of women with a depression diagnosis, whose PHQ9 score dropped to 5 or below within 120 days.

Depressed women as defined by these “PMOOD” metrics were entered into a depression data registry which assisted offices and clinicians with clinically caring for depressed women over time. The above data was created by a Kaiser Permanente Northern California clinical analytic consultant team, and was reported and widely shared quarterly for each medical center and regionally. All of the above data was reviewed regularly by Kaiser Permanente Northern California clinical leadership and champions for opportunities to improve.

4. Streamline office workflow

PHQ-9 paper forms were routinely stocked in every exam room and each medical assistant station. As part of rooming a patient, a medical assistant was expected to ask the patient to complete the form, at the designated gestational intervals (first prenatal visit, 24–28 week, and 3–8 week postpartum visit). As part of the visit, the clinician reviewed the PHQ-9 form and score. When the score was high, (10 or greater) the clinician further discussed symptoms and related current and past medical history. A depression diagnosis was determined by the clinician’s clinical assessment and whether the clinician thought the clinical diagnosis of depression was present as informed by clinical judgment and training. By the end of the visit either the medical assistant or the clinician entered the PHQ-9 score

into the EHR PHQ-9 total score questionnaire box. If depression was determined to be present, the clinician would enter a depression diagnosis into the encounter and/or problem list. Treatment options included classes, support groups, individual counseling, or medication. Obstetric clinician to behavioral health clinician consultation was also available and when clinically appropriate and acceptable to the patient, a behavioral health referral was made. Appropriate timely follow-up was arranged based on severity of symptoms or diagnosis.

Please see Box 1 for a Timeline of Implementation.

Box 1

Timeline of Implementation

2007	Preimplementation: Decision to start universal perinatal depression screening
2008	PHQ-9 chosen as the universal screening tool
2009	Perinatal depression site champions chosen and meet locally and regionally. Local planning task forces created and meet to identify barriers to implementation, best practices for care, local resources, and useful collaborations
2010	Implementation begins: Clinician and staff education on PHQ-9 form, entry, use of depression diagnoses is ongoing. Clinical education begins, as well as the development of pocket cards for help with treatment and medication decision support. Medical centers start screening once; quarterly screening data report is created and distributed
2011	Medical centers expand to screening three times. Data created to measure average number of screens per pregnancy. Education of staff and clinicians continue.
2012	Full Implementation Development and use of data metrics and performance and registry reports for PMOOD. Education of staff and clinicians continue.
2013	Development and use of data reports for PMOOD-significantly improved and PMOOD-remission. Workflows are refined, collaborations are strengthened with behavioral health/psychiatry, clinician resources are refined and performance data is regularly distributed.
2014	Champions and Leadership work with low performing medical centers.

Evidence of Success

Diagnosis codes, clinical encounters and orders, attendance at classes and groups, PHQ-9 scores, and antidepressant medication dispensing data occurring during pregnancy and up to 120 days postpartum for all births in 2014 (N=37,660) were extracted from the EHR and pharmacy databases. These data were used to determine the prevalence of screening, depression diagnosis, depressive symptoms, medication, and treatment This study was approved by the Kaiser Permanente Northern California Institutional Review Board. Analyses were performed using SAS 9.3 (Cary, NC, USA; 2012).

2014 Program Highlights:

- Over 80,000 PHQ-9 screens were performed, with 96% of mothers screened at least once. On average each woman was screened 2.7 times during her prenatal and postnatal care;
- 14% of women had depressive symptoms as measured by a PHQ-9 score of 10 or greater

- 5.6% of women had moderate-to-severe depressive symptoms as measured by a PHQ-9 score of 15 or greater
- 3% of pregnant/postpartum women had moderate to severe depressive symptoms (PHQ-9 score 15 or greater) and a depression diagnosis
- 80% of women with moderate-to-severe depressive symptoms (PHQ-9 score of 15 or greater) and a depression diagnosis, received treatment (class, support groups, individual counseling, or medication).
- 40% of women with a depression diagnosis demonstrated at least 50% improvement
- 25% of women with a depression diagnosis achieved clinical depression remission

Evidence of the effectiveness of universal perinatal depression screening using Kaiser Permanente Northern California's program has been published elsewhere[4] (footnote for 15-2266R1).

Discussion

We demonstrate that implementation of universal perinatal depression screening office care is feasible and effective, and can be implemented widely in a large healthcare system. Kaiser Permanente Northern California's program can serve as a model for both the feasibility and clinical effectiveness of universal depression screening programs in OB office care.

With recent recommedations from the American College of Obstetricians and Gynecologists and USPTF's for universal perinatal depression health care, systems will need to understand how to address and overcome barriers to develop and implement a successful universal screening program. Kaiser Permanente Northern California has successfully addressed these barriers and developed a universal perinatal depression screening program using deliberate quality improvement principles. This region-wide program has demonstrated that obstetric clinicians can learn new screening, diagnosis, and treatment clinical skills, and can incorporate depression screening and care into usual, routine prenatal and postnatal care. Collaboration with Behavioral Health colleagues and resources strengthened all parts of this program, especially for women with more severe clinical depression. Other healthcare systems and smaller practices can adapt a similar program through identification of and collaboration with community or health care systems, Behavioral Health consultation services, peer support groups, community agencies, and church or synagogue-–based counseling behavioral health services for women with perinatal depression.

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