Maternal and Child Health Journal (2019) 23:1292–1298
https://doi.org/10.1007/s10995-019-02780-x

FROM THE FIELD

Outcomes of Implementing Routine Screening and Referrals for Perinatal Mood Disorders in an Integrated Multi-site Pediatric and Obstetric Setting

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Published online: 20 June 2019

Abstract

Purpose We report on a successful quality improvement project designed to increase access to perinatal mental health services through universal screening for postpartum depression (PPD) and facilitating referrals for evaluation and treatment, at a multi-site, integrated system of pediatric and obstetric practices in Houston, Texas.

Description Obstetric practices administered screenings twice during pregnancy and at 6 weeks postpartum. Pediatric practices screened women at the 2 week and 2, 4, and 6-month well-baby visit. Women with a score of 10 or higher on the Edinburgh Postnatal Depression Scale (EPDS) or women that reported thoughts of self-harm were offered a referral to a mental health provider. Data on screening and referrals were collected from the electronic medical record.

Results A total of 102,906 screens for PPD were completed between May 2014 and July 2018. Of those, 6487 (6.3%) screened positive. The total number of women referred to treatment were 3893 (3.8%). Of referred women 2172 (55.8%) completed an appointment with a mental health provider within 60 days of referral. Rates of completed appointments varied by the level of integration of the mental health provider and referring physician: women referred by pediatrics in a Level 1 coordinated system completed 20.0% of referrals; obstetrics Level 4 co-located system, 76.6%; and obstetrics Level 5 integrated model, 82.7%.

Conclusion This project demonstrated that with planning, systems review and trained staff, PPD screening can be integrated into obstetric and pediatric practices and high screening and referral rates can be achieved.

Keywords Screening · Postpartum depression · Edinburgh Postnatal Depression Scale · Maternal and child health · Pediatrics well-child visits

Significance

The American Academy of Pediatrics (AAP) and the American College of Obstetrics and Gynecologists (ACOG) both recognize that screening for PPD in pediatrics and obstetrics settings can help increase the identification of affected women. This study demonstrates the feasibility of PPD screening in pediatrics and obstetrics settings and a successful process for referral to mental health evaluation and treatment.

Introduction

Given the importance of a woman's mental health for her baby's and family's well-being, the AAP recommends that pediatricians screen women for postpartum depression

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(PPD; Earls et al. 2010). Similarly, the ACOG recommends routine screening for depression at least once during the perinatal period for all women (Bulletins—Obstetrics 2008). The US Preventive Services Task Force (USPSTF), in 2016, updated their guidelines to agree with both the AAP and ACOG, recommending pregnant and postpartum women be routinely screened for depression (O'Connor et al. 2016).

Despite recommendations many healthcare facilities and physicians are reluctant to universally screen. Reasons for resistance include insufficient training, lack of time, and inadequate resources for referrals (Gjerdingen and Yawn 2007). Other systemic obstacles include a shortage of mental health providers and limited reimbursement for mental health services (Dormond and Afayee 2016). To our knowledge, comprehensive women's mental health programs in the US that are fully equipped to support universal screening for PPD and to provide follow-up and referrals for expert, reimbursed mental health care are rare.

To address this need, Texas Children's Hospital (TCH) initiated a project to (1) improve detection of perinatal and PPD by standardizing screening in obstetric and pediatric practices, (2) facilitate referrals, and (3) increase access in the community. This manuscript describes the implementation and outcomes of a multisite screening and referral project for obstetricians and pediatricians in an integrated hospital system.

Methods

Setting

Located in Houston, Texas, TCH is an integrated healthcare delivery system, consisting of a health plan for Medicaid and Children's Health Insurance Program (CHIP) for pregnant women and children, three free-standing children's hospitals, four obstetric practices, and a network of primary care pediatric practices, Texas Children's Pediatrics (TCP). In 2011, TCH built the Pavilion for Women (PFW) to provide inpatient and outpatient services in obstetric and gynecologic care. Within the PFW, The Women's Place—Center for Reproductive Psychiatry (The Women's Place) is dedicated to the treatment of women's mental health. The three hospitals, TCP, and the PFW are all connected through one electronic medical record (EMR).

Standardized Screening

In response to published recommendations, a standardized workflow for obstetric and pediatric practices to screen and refer women with perinatal mood symptoms was created (Fig. 1). Beginning in 2014, pediatric practices were instructed to administer the Edinburgh Postpartum Depression Scale (EPDS; Cox et al. 1987) at the first newborn visit. The EPDS is a ten item, self-report, validated tool used

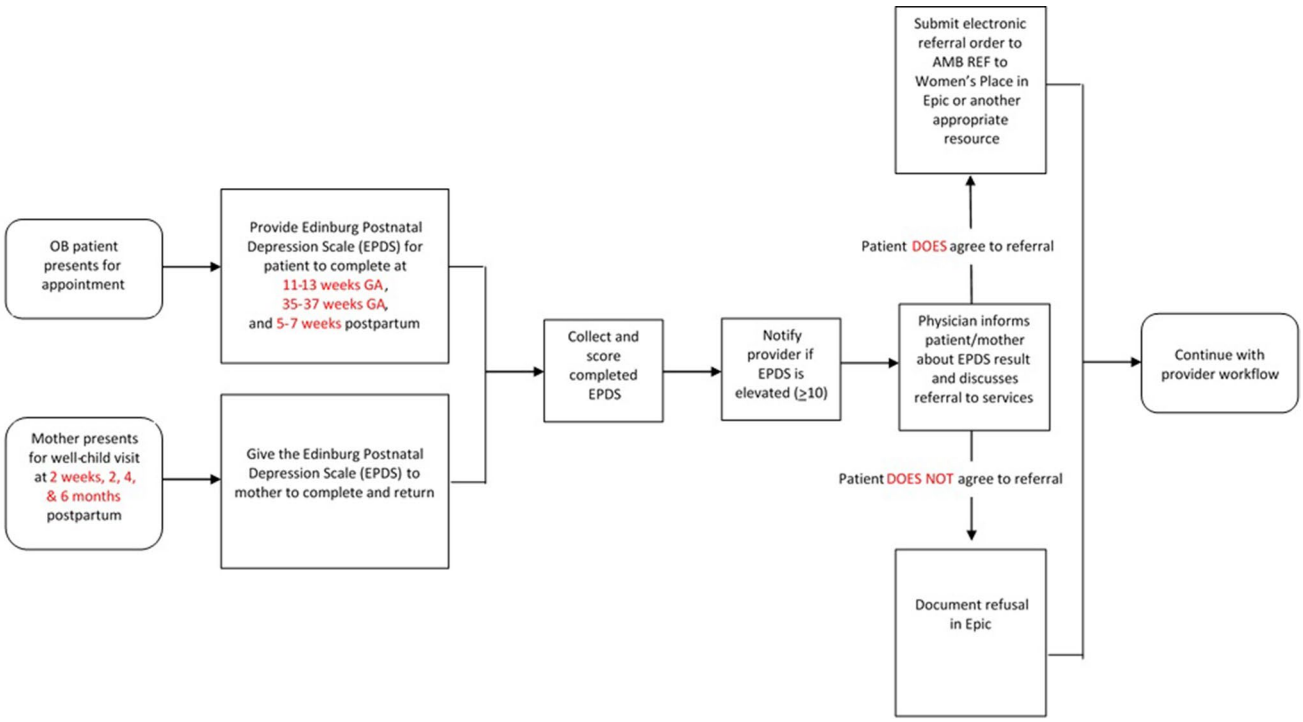

Fig. 1 Postpartum depression screening and referral workflow diagram

during pregnancy and postpartum, has been translated into numerous languages, and is free for use with author citation. In 2017, pediatric practices included screening at the 2, 4, and 6-month well-child visits as recommended by Bright Futures (Earls et al. 2010).

In the standardized workflow the EPDS is administered by the front desk staff or the medical assistant. If a woman scores ten or greater or has thoughts of self-harm (#10), the results are reported to the pediatrician to determine if an electronic referral to The Women's Place is appropriate or an emergency response is needed. If an emergency, the woman is consented for transfer to an emergency department (ED) by ambulance or family member. If she refuses, 911 or a crisis intervention team is contacted and they make the decision whether to involuntarily transfer her to the nearest ED.

The EPDS result is placed in the baby's chart with a standardized statement documenting the score and if a referral was made. This statement has been approved by the Legal and Compliance Departments at TCH and is considered to be consistent with HIPAA requirements. Referrals to The Women's Place are made electronically utilizing the woman's chart.

The obstetric practices have a similar workflow with screening conducted twice during pregnancy and once postpartum. The obstetrician offers a referral to The Women's Place if no imminent danger exists. For emergencies the same protocol is followed as in the pediatric practices. Both obstetricians and pediatricians are encouraged to refer women if they have concerns about her mental health outside the standard screening times and/or have a negative EPDS score.

A 1-h in-person training to all practices was provided before screening began. The training addressed signs and symptoms of PPD, administering and scoring the EPDS, the referral process, managing psychiatric emergencies, and documentation.

Referrals

Our system offers differing levels of integration with behavioral health based on the location of the behavioral health provider in relation to the referring practice. One of the obstetric practices has an integrated location where the referring obstetrician and mental health provider are in the same clinic and function as one practice with a shared waiting area, check-in staff, and clinic rooms. This is consistent with Level 5 of an integrated behavioral health model (Doherty et al. 1996). The three other obstetric practices have a co-located model, where the referring obstetricians and mental health providers are housed in the same building; however, they function independently similar to a Level 4 integrated model (Doherty et al. 1996). The pediatric practices share the same EMR but function as a Level 1 system of integration with limited to no interaction with behavioral health (Doherty et al. 1996). The pediatric practices are often geographically far away from any Women's Place provider. One pediatric practice is unique in that it is in a separate building adjacently located to The Women's Place clinic, and shares the same parking lot. The woman is referred to The Women's Place clinic closest to her. Pediatric practices are also instructed that they have the option of referring a woman back to her obstetrician or a provider more conveniently located.

The Women's Place staff calls the patient to schedule an appointment within 24 to 48 h of receiving a referral. All women are offered an appointment within 7 to 10 days. The Women's Place has four psychiatrists, a psychologist, two social workers, and a registered nurse with offices in four locations in the Greater Houston area. A psychiatrist is on-call 24 h a day, 7 days a week to support the referring practices if questions arise. Pediatricians are only given feedback that the referral was received and the woman contacted. Obstetricians are able to access women's chart through the shared EMR and review diagnosis and treatment.

Measures

Key measures included the number of practices trained to implement PPD screening and referrals, EPDS screenings completed, positive screens identified, referrals made to The Women's Place, and appointments completed with The Women's Place provider within 60 days of referral.

Analysis

Descriptive statistics were used. Frequencies were generated with percentages for total number of EPDS screens completed, positive screens identified, referrals made to The Women's Place, and appointments with The Women's Place provider completed (Table 1) along with the distribution and average of EPDS scores (Table 2). Demographic data was also captured to provide a snapshot of women who access care at TCH (Table 3).

Ethical Considerations

This project was conducted in accordance with prevailing ethical principles as set by the 1964 Declaration of Helsinki and was reviewed and deemed exempt by the Baylor College of Medicine Institutional Review Board. Data in this manuscript were not based on a clinical study, but rather a quality improvement of services offered to all clients that meet the criteria to receive PPD screening and referral. Data was anonymously collected from the EMR.

Table 1 Training, screening, referrals, and completed appointments for postpartum depression in obstetric and pediatric practices from May 2014 to July 2018

Clinic type	Practices trained	EPDS screens	Positive screens	Referrals made	Completed appointments[a]
	n	n	n (%)	n (%)	n (%)
Obstetric Integrated Level 5	1	2068	170 (8.2)	185 (108.8)	153 (82.7)
Obstetric Co-located Level 4	3	16,851	1489 (8.8)	2222 (149.2)	1702 (76.6)
Pediatric Adjacently located Level 1	1	3765	220 (5.8)	96 (43.6)	39 (40.6)
Pediatric Coordinated Level 1	50	80,222	4608 (5.7)	1390 (30.2)	278 (20.0)
Total	54	102,906	6487 (6.3)	3893 (60.0)	2172 (55.8)

[a]Completed appointments are defined as patients completing an appointment with a mental health provider within 60 days of referral

Table 2 Distribution of EPDS scores at obstetric and pediatric practices from May 2014 to July 2018

EPDS scores	Number of screens	Average score
0–5	80,463	3.16
6–10	17,666	
11–15	3639	
16–20	913	
21–25	203	
26–30	21	

Table 3 Demographics of patients referred and treated from May 2014 to July 2018

Demographics	Referrals received		Patients treated	
	n	%	n	%
Ethnicity				
Hispanic	960	25	532	25
Non-Hispanic	2496	64	1596	73
Unable to obtain	437	11	44	2
Age				
15–24	718	18.5	318	14.6
25–34	2301	59.1	1359	62.5
35–44	829	21.3	469	21.6
45–54	7	0.2	4	0.2
> 54	1	0.0	1	0.0
Other	37	1.0	21	1.0
Marital status				
Married	1986	51.0	1466	67.7
Single	1544	39.7	624	28.7
Divorced	27	0.7	19	0.9
Separated	19	0.5	12	0.6
Significant other	28	0.7	20	0.9
Unable to obtain	289	7.4	31	1.4
Payer				
Commercial	–	–	1131	52
Medicaid/managed care	–		315	15
Self-pay/other	–	–	726	33

Results

During the project period from May 2014 to July 2018, 4 obstetric practices and 51 pediatric practices received the 1-h training to implement PPD screening and referral. In total, 102,906 EPDS screens were completed. The obstetric practices completed 18,919 screens and the pediatric practices completed 83,987 screens (Table 1). These screens do not represent individual patients.

An average of 38% of eligible obstetrics visits (27% at 11–13 weeks, 47% at 35–37 weeks, and 26% at 5–7 weeks postpartum) completed an EPDS screen with a range of 14% to 91% compliance between the four practices. Nineteen of the 51 pediatric practices were able to track compliance. An average of 63% of eligible initial newborn visits completed EPDS screens with a range of 22% to 103%. Data limitations do not allow for compliance to be measured for screenings completed at the 2, 4, and 6-month well-child visits.

Prevalence

Of the 102,906 total screens completed, there were 6487 positive screens (6.3%). The obstetric practices identified 1659 positive screens (8.8%) and the pediatric practices identified 4828 positive screens (5.7%). The average EPDS score was 3.16 (range 0–30, Tables 1, 2).

Referrals and Appointment Completion

A total of 3893 referrals were received, representing 3.8% of total EPDS screens, and of those, 2172 (55.8%) completed an appointment at The Women's Place within 60 days of referral. For the 1 obstetric practice with the integrated model (Level 5), 170 positive screens resulted in 185 (108.8%) referrals with 153 (82.7%) appointments completed. In the obstetric practices with the co-located referral model (Level 4), 1489 positive screens

resulted in 2222 (149.2%) referrals with 1702 (76.6%) completed appointments. For the 1 pediatric practice with an adjacently located Women's Place clinic (Level 1), 220 positive screens resulted in 96 (43.6%) referrals and 39 (40.6%) appointments completed. The remaining pediatric practices (Level 1) had 4608 positive screens resulting in 1390 (30.2%) referrals and 278 (20.0%) completed appointments (Table 1). We are unable to report the women who received mental health care outside the TCH system.

Discussion

The project goal was to increase access to specialized care for women's reproductive mental health through implementing an efficient and sustainable model for PPD screening and referral in obstetric and pediatric practices. There has been a recent proliferation of research regarding the importance of screening for PPD; however, little has been studied on effective strategies to link women to mental health services (Brennan 2018; Emerson et al. 2018; Kurtz et al. 2017; Smith et al. 2017). Our project was successful in integrating PPD screening into obstetric and pediatric practices that had previously not been systematically asking about PPD. A high referral completion rate for mental health services in the Levels 5 and 4 integrated models was also achieved, with an overall 82.7% and 76.6% appointments completed, respectively, compared to a 33.5% average follow-up rate reported in a systematic review of participation in depression care in outpatient perinatal care settings (Byatt et al. 2015).

Challenges to Screening for PPD at Obstetric and Pediatric Practices

Our wide variance in PPD screening rate at pediatric practices may be due to some clinic managers reported concerns regarding HIPAA violations with documentation of women' EPDS score in the child's chart. Low compliance in some offices may also be the reluctance of the clinic managers, obstetricians, and pediatricians to implement the screening in general. We found that clinics with a "champion" who believed in the importance of screening for mental health had much higher compliance rates.

Differences Between Referral Rates

Referrals to The Women's Place from obstetric practices were notably higher than from the pediatric practices (145.1% and 30.8%, respectively). The disparity in the referral rate may be attributed to women being more open to sharing with their own doctors when experiencing emotional distress as opposed to discussing it with their child's pediatrician and thus turning down a referral. There may also be the fear of stigma—being judged as an unfit mother by the pediatrician and being reported to Child Protective Services—that prevented women from fully disclosing their mental health status or accepting referrals when offered (Byatt et al. 2013; Heneghan et al. 2007).

Differences Between Completion Rates

Completion rates were noticeably different between obstetric and pediatric practices particularly among the differing levels of behavioral health integration. Accessibility of the mental health practice appears to be a major factor. In some cases, the pediatrician's practice location is quite far from the closest available Women's Place clinician. In the one pediatric practice that is located adjacent to a mental health provider, the referral rate was 43.6% of positive screens and the completed appointments were 40.6% compared to the 20.0% completion rate for the other pediatric practices. This outcome supports research that indicates having a mental health provider easily accessible in a familiar setting increases completed referrals (Canty et al. 2019; Davis et al. 2016; Shemesh et al. 2016).

Low Medicaid Population Receiving Mental Health Services

Women who completed an appointment at The Women's Place had commercial insurance (52%) or self-pay (33%), with only a small portion covered by Medicaid (15%). In Texas, women lose Medicaid benefits 8 weeks after delivery which may explain one reason why few Women's Place clients were Medicaid payers. Mental health advocates in Texas are pushing to extend Medicaid benefits for postpartum women and increasing reimbursement for mental health services.

Strengths

A notable and unique strength of our project is the ability to share one EMR system between obstetrics, pediatrics, and mental health providers. One EMR system allowed for a simple electronic referral process that minimized women having to navigate a complex medical system for follow-up care. Having integrated behavioral health care is another strength and our results support improved completion of appointments in these settings.

Limitations

A major limitation to the replicability of this project is the shared EMR system at TCH. Most obstetric and pediatric practices in the US are not connected to women's mental

health practices through an EMR, which would likely make the referral process more cumbersome. Another limitation is the low numbers of women with Medicaid who utilized The Women's Place. This is a population of women who historically have difficulty accessing mental health care and more research needs to be done to determine how best to reach them.

Conclusion

This project is, to our knowledge, the first to report epidemiologic data of this magnitude for PPD screening at pediatric and obstetric practices and provides a model for successful referrals to mental health services. More research is needed to fully understand why, despite ease of accessing a mental health referral, some obstetricians and pediatricians remain reluctant to screen for PPD. Further understanding of how the relationship with the referring provider and familiarity with and/or distance to the mental health location influences a women's decision to follow through with care is needed.

Our project demonstrates that with adequate planning, thorough systems review, properly trained staff, engaged clinicians, and mental health services near referring providers, obstetric and pediatric practices can successfully implement PPD screening and achieve a high referral rate. Additionally, policies that support integration of mental health services into obstetric and pediatric practices would allow for a better appointment completion rate and ensure comprehensive care for perinatal women and their families.

Acknowledgements We would like to acknowledge Stanley Spinner and Katherine Tittle of Texas Children's Pediatrics for their enthusiastic support and cooperation in implementing this project. Likewise, we would like to thank the Behavioral Health, Obstetric, and Pediatric Health Care Teams who were on the ground putting this plan into action. We are also greatly indebted to The Pavilion for Women Leadership Team who believe women's mental health care is part of total health care for all women and financially support our efforts.

Funding This project was possible by supplemental funding through the Delivery System Reform Incentive Payment Program (DSRIP) 1115 Waiver.

Compliance with Ethical Standards

Conflicts of interest The authors declare that they have no conflict of interest.

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