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### It's More Than Just "Baby Blues" - Screening for Postpartum Depression in a Pediatric Setting

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**Final Manuscript**

**More Than Just “Baby Blues” – Screening for Postpartum Depression in a Pediatric  
Setting**

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**Author Note**

This evidence-based practice change pilot project would not have been possible without the support and guidance of Drs. George Madany, MD, Aysun Azimi, DO, Martha Fuller, PhD, and Donna Agan, EdD

### **Abstract**

*Background:* Postpartum depression (PPD) is estimated to affect up to 1 out of 7 women. Evidence and American Academy of Pediatrics (AAP) guidelines support maternal screening for PPD in a pediatric setting during well-child visits. The pediatric office is frequently visited during the first year of life and is a suitable setting to perform screening.

*Aims of Service Change:* Implement AAP recommended PPD screening at a busy primary care practice in Southern California using the Patient Health Questionnaire (PHQ-9).

*Details of Innovation:* In this pilot project, mothers (who were not patients of the pediatric practice) consented to be screened for PPD using the PHQ-9 at 1,2,4, & 6 month well child visits. All mothers were supplied resource material on PPD and community resources. Those whose scores put them at risk for PPD were referred to community providers for mental health services. For safety purposes, resources were identified prior to implementation and a plan was in place in the event a woman was actively suicidal. The theoretical models used to drive this project were the ACE-Star Model and Lewis' Change Theory

*Outcomes:* During the two-month pilot, 81 mothers were eligible for screening; 23 women, or 28% completed the screening. Three were high-risk and were referred to community providers for services. The remaining were not screened because the mother did not complete the PHQ-9. The pediatric primary care provider has an opportunity to identify PPD early and provide support and referral for appropriate services

## More Than Just “Baby Blues”

### Screening for Postpartum Depression in a Pediatric Setting

#### **Description of the Clinical Problem**

Postpartum depression (PPD) affects as many as 1 out of 7 women, with more than 540,000 babies born to mothers affected by depression, making PPD the most under-diagnosed obstetric complication in the country (U.S. Preventive Services Task Force, 2019). A systematic review of the evidence conducted by van der Zee-van den Berg, Boere-Boonekamp, IJzerman, et al., 2017 supports maternal screening for PPD in a pediatric setting during well-child visits because this setting readily reaches new mothers, creates long-lasting trust between mother and provider, and there are frequent visits with new mothers in the first postpartum year. The American Academy of Pediatrics (AAP) recommends screening for PPD at the 1, 2, 4, and 6-month well-child visits given the evidence of peak-times of development of PPD (Earls, 2010). A busy pediatric primary-care clinic in central San Diego was not formally screening for PPD at well-child visits.

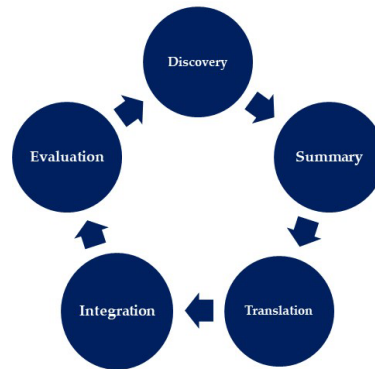
#### **Description of Project, Facilitators, Barriers and Resistors**

The Doctor of Nursing Practice (DNP) student implemented an evidence based project (EBP), screening for PPD using the Patient Health Questionnaire-9 (PHQ-9) (Pfizer Inc., 1999) in a pediatric primary care office during 1, 2, 4, and 6-month well-child visits. This was a pilot project working with one of nine providers in the office. This pediatric clinic was one location of a large multi-site pediatric practice organization. The office, and organization, closely follows AAP guidelines as their framework for practice which greatly eased the implementation of this DNP project. Potential barriers included resistance from the medical assistants regarding the additions to their process flow;

resistance from the mothers to complete questionnaires and/or participate in a pilot study; identifying a reliable referral option for mothers identified as high risk; the willingness of the provider to add documentation to clinical notes in order to track the screening in the electronic medical record of the child.

### **Evidence Based Practice Model**

The DNP student used the ACE Star Model (2008 Summer Institute on Evidence-Based Practice, n.d.) as the framework for implementation of this EBP project. The ACE Star Model is easy to understand and flows easily through the steps of EBP execution. Designed as a simple 5-point star, the model displays five major stages of knowledge transformation: (a) knowledge discovery, (b) evidence synthesis, (c) translation into practice, (d) integration into practice, and (e) evaluation (“2008 Summer Institute on Evidence-Based Practice,” n.d.). Stevens, K.R. (2004). The DNP student also referenced Lewin’s Change Theory (“Lewin’s Change Theory,” n.d.) throughout the implementation of this EBP project as this theory clearly represents the stages staff members must process through in order to truly accept a process change.

**Figure 1***ACE Star Model Adaptation*Adapted from the Ace Star Model

### **Proposed Evidenced-based Solutions**

Prior to the start of the project, a local San Diego mental health consultation service was recruited as the referral source for high-risk mothers and safety plans were developed in the event a mother was identified with suicidal ideation. The DNP student proposed the initiation of three evidence-based solutions, laying the groundwork for the DNP project measures and outcomes: First, initiate a screening protocol for PPD during 1, 2, 4, and 6-month well-child visits. The evidence shows this is a suitable method to reach new mothers and support frequent follow-up opportunities during the first postpartum year (van der Zee-van den Berg, Boere-Boonekamp, IJzerman et al., 2017). Next, screen mothers for PPD using the PHQ-9 at the 1, 2, 4, and 6-month well-child visits. The PHQ-9 was the instrument chosen as this closely aligned with the organization's current direction of depression screening. They are using this instrument for adolescent depression screening and documentation in the electronic health record is eased by use of this instrument. Gjerdingen D. et al., 2009 states the PHQ-9 is highly specific in recognizing PPD and can be easily implemented in primary care settings. The

nine question tool has four answer choices with a score attached to each: *not at all* (0), *several days* (1), *more than half of the days* (2), and *nearly every day* (3). The questions are about how the patient has felt in the last two weeks. A score less than 10 is low risk for depression, and a score greater than 10 is considered moderate risk for depression. Question nine asks about suicidal ideation, so any choice other than *not at all* calls for immediate referral and intervention. Lastly, provide education and referral information to mothers who score 10+ on the PHQ-9. van der Zee-van den Berg, Boere-Boonekamp, IJzerman et al., 2017 performed a systematic review and determined the cut-off score for moderate depression requiring referral for services to be  $\geq 10$  on the PHQ-9. The DNP student and clinical mentor offered educational material to all mothers regardless of score but started a formal referral process for mental health services for those that scored 10 or higher. The educational materials were brochures provided by the Postpartum Health Alliance and included signs and symptoms of PPD, an Edinburgh Postpartum Depression Scale (EPDS), and phone numbers to call if the mothers wanted more information or resources.

PubMed was the search engine used for much of the literature review performed to obtain the evidence cited above. The search terms used include *PPD, well baby, well baby visits, depression, postpartum AND child health services, well child, well child visit, child health services, infant health services, postpartum depression, pediatric setting, pediatrics, pediatrics AND depression, postpartum, pediatrics AND depression, postpartum AND screening tool, postpartum depression screening, postpartum depression screening pediatric primary care, and when to screen for postpartum depression* Filters applied to search results include *Free full text, publication dates last*

*five years, humans, and English. Searching pediatrics AND depression, postpartum* yielded five results, three of which were saved for further review. *Pediatrics AND depression, postpartum AND screening tool* utilized one result and was saved for review. *Postpartum depression screening* yielded one saved result; *postpartum depression screening pediatric primary care* provided 10 results of which four were saved for review. Finally, *when to screen for postpartum depression* generated 120 results and six articles were saved. After eliminating duplicates, nine articles were used in the preparation of the evidence for this project and of the nine, four are utilized in the formation of the evidence-based solutions stated above. The DNP student reviewed the AAP recommendations website, which yielded one article used in the evidence compilation. The United States Preventative Services Task Force recommendation statement on interventions to prevent perinatal depression was also utilized in formulating the EBP interventions (US Preventive Services Task Force et al., 2019). Lastly, the PHQ-9 tool was obtained online to use as a reference (Pfizer Inc. 1999). Using the Johns Hopkins Nursing Evidence Level and Quality Guide (Dearholt & Dang, 2012), the literature review provided one Level I, Grade B; three Level II, Grade A/B; and two Level IV, Grade A articles.

The evidence shows that children's early social-emotional development affects their mental health. Their mother's mental health problems, such as undiagnosed PPD can affect this development negatively. Children of mothers who have suffered from PPD had more difficulties in their cognitive, social-emotional and language development, and had higher levels of internalizing and externalizing behavior, as well as general psychopathology later in life (van der Zee-van den Berg, Boere-Boonekamp, IJzerman et



al., 2017). Early detection, support, and treatment can promote rapid recovery of the mother and may reduce the effects of PPD on the child's development (van der Zee-van den Berg, Boere-Boonekamp, Groothuis-Oudshoorn et al., 2017). Implementing a screening protocol in primary care with an instrument such as the PHQ-9 can improve early detection. In the United States, routine postpartum maternity care in the hospital ends 1 – 3 days after delivery. There is only one standard follow-up appointment with the gynecologist six - eight weeks postpartum. Well-child visits, however, provide frequent contact with mothers during the first postpartum year, which makes well-child visits an apt screening setting. Pediatric care providers can build a trusting relationship with the mother, offer repeated screening, and encourage mothers to seek further treatment when necessary (van der Zee-van den Berg, Boere-Boonekamp, Groothuis-Oudshoorn et al., 2017).

### **Project Development and Implementation Timelines**

The project idea was accepted by the clinical mentor at the end of March 2019. The DNP student received approval from the organization's Chief Medical Officer (CMO) on May 3, 2019. It was determined that automation of the PHQ-9 (using a tablet computer) was not possible within the time constraints of the pilot project, therefore, paper packets were created containing project information, consent forms, and the PHQ-9 screening tool. The consent form is shown in appendix H and included an optional consent for direct referral for mental health services if indicated. IRB approval was received through the University of San Diego on June 5, 2019. Once IRB approval was obtained a retrospective chart review was performed to determine the number of eligible screening appointments from the months of May and June, two months prior to the start

of the pilot project. This pre-data was collected as a comparison for the post-implementation data. Simultaneously the DNP student provided an educational presentation to the office Patient Access Representatives (PARs) and Medical Assistants (MAs) to discuss the project plan and determine a process that would easily fit into their daily work-flow with minimal interruption. The behavioral health consultation service phone number and fax number was printed and placed in multiple, logical locations for the clinical mentor and PARs to access if a mother required referral for services. The DNP student also posted EHR documentation instructions on the computer terminals of the clinical mentor so proper documentation of the encounter, as well as billing and coding were adequately accounted for. An ICD-10 code for screening was entered, and a time modifier could be applied if additional appointment time were needed for referral or educational purposes.

The screening packets were kept at the front desk and were color-coded according to visit: 1-month (blue), 2-month (yellow), 4-month( pink), 6-month (green). During morning chart preparation, part of the PARs usual routine, eligible patient charts were prepped with the proper screening packet. If the patient was brought in by their mother, the mother was handed the packet at check-in. The mother completed the paperwork in the waiting room and the MA placed it for the DNP student or clinical mentor to review prior to the visit. On some occasions, the mother completed the packet in the room, and the clinician reviewed the screening tool during the patient encounter. After the encounter, the packet was placed in a folder for the DNP student to review for data collection, then given to the PARs again to scan into the patient's chart for documentation purposes. The project started July 1, 2019 and continued through August

31, 2019. Data collection occurred simultaneously throughout project implementation and was analyzed in the following months.

### **Process Indicator Data Monitoring**

Process indicators included the implementation of the screener, correct electronic health record (EHR) documentation, dispersal of educational handouts, as well as appropriate referral to behavioral health consultation service as needed. As the project was implementing the screening process itself, the process indicators reflect adherence to the process change. The DNP student was onsite clinically twice a week and conducted data compilation as needed before clinic hours and during lunch. The DNP student reviewed the schedule to identify eligible visits, cross referenced these visits with the completed screening packets, and further correlated with EHR charting done by the clinical mentor. All necessary data points, along with demographic information, were compiled into an excel document, scrubbed of any patient identifiers.

### **Outcome Indicator Data Monitoring**

Outcome indicators consisted of the number of mothers who completed the consent and PHQ-9, appropriate EHR documentation, and referral and warm hand-off of mothers to the mental health consultation service for those who score 10+, or any mother with active suicidal ideation. Data collection occurred simultaneously with the process stated above. Additional education, follow-ups, and reminders were given to the staff or clinical mentor as needed. Process and outcome measures were similar due. The process change was implementation of a screening implementation. Monitoring of the screening success as well as the responses to the PHQ-9 overlapped heavily and were assessed weekly and addressed in real-time as needed.

### **Data Analysis**

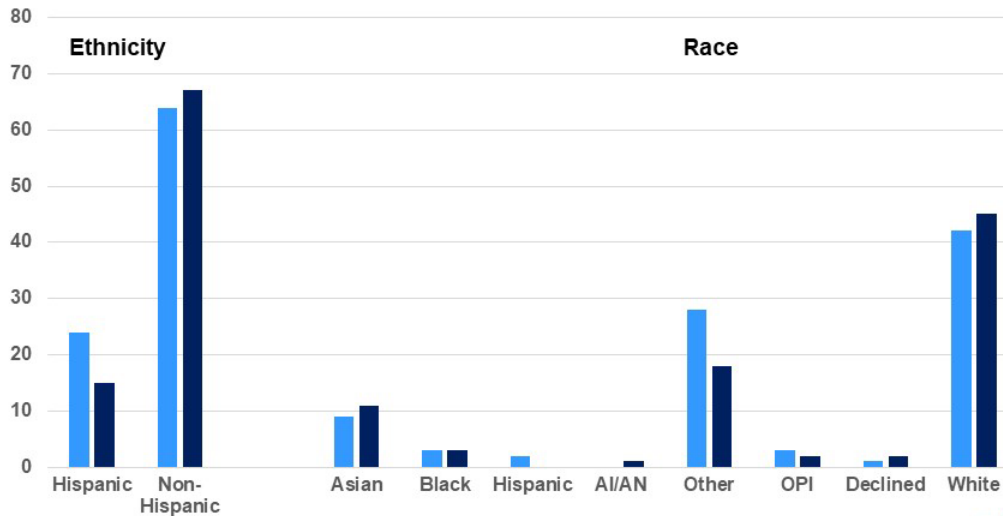
Data collection consisted of a 2-month retrospective chart review prior to project implementation, and 2-month prospective chart review while the project was actively in process. Demographic data was collected during both time periods including insurance type and the age, gender, ethnicity, and race of the patients. The starting number for screenings was zero as no formal PPD screening process was in place. The data points of interest during the retrospective chart review included the number of 1, 2, 4, and 6-month well child visits completed by the DNP student and/or clinical mentor. These well-child visits represent the number of missed opportunities to provide formal screening for PPD. Prospective data collection throughout the project included the number of 1, 2, 4, and 6-month well child visits completed by the DNP student and/or clinical mentor, the number of mothers who completed the PHQ-9, and percentage of accurate documentation in the EMR, education materials given, and referral completion as appropriate.

### **Project Outcomes**

During the two-month pilot, 81 mothers were eligible for screening. 23 mothers, or 28% completed the screening. Of the 23 mothers screened, three were considered high-risk and eligible for referral; 100% of these women were referred to the behavioral health consultation service previously identified for services. Those not screened were due to a number of reasons including unwillingness to participate in the project, forgetting to fill out the packet, language barriers, and mothers stating they knew they did not have depression so did not feel it necessary to be screened.

**Figure 2**

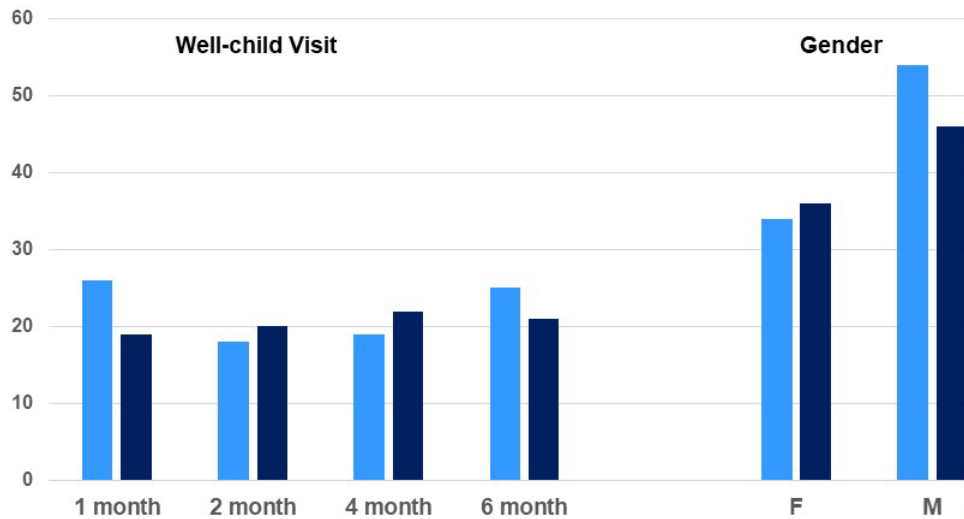
*Patient Demographic Information*



*Note.* Light blue: pre-project patient population; dark blue: patient population screened during pilot project

**Figure 3**

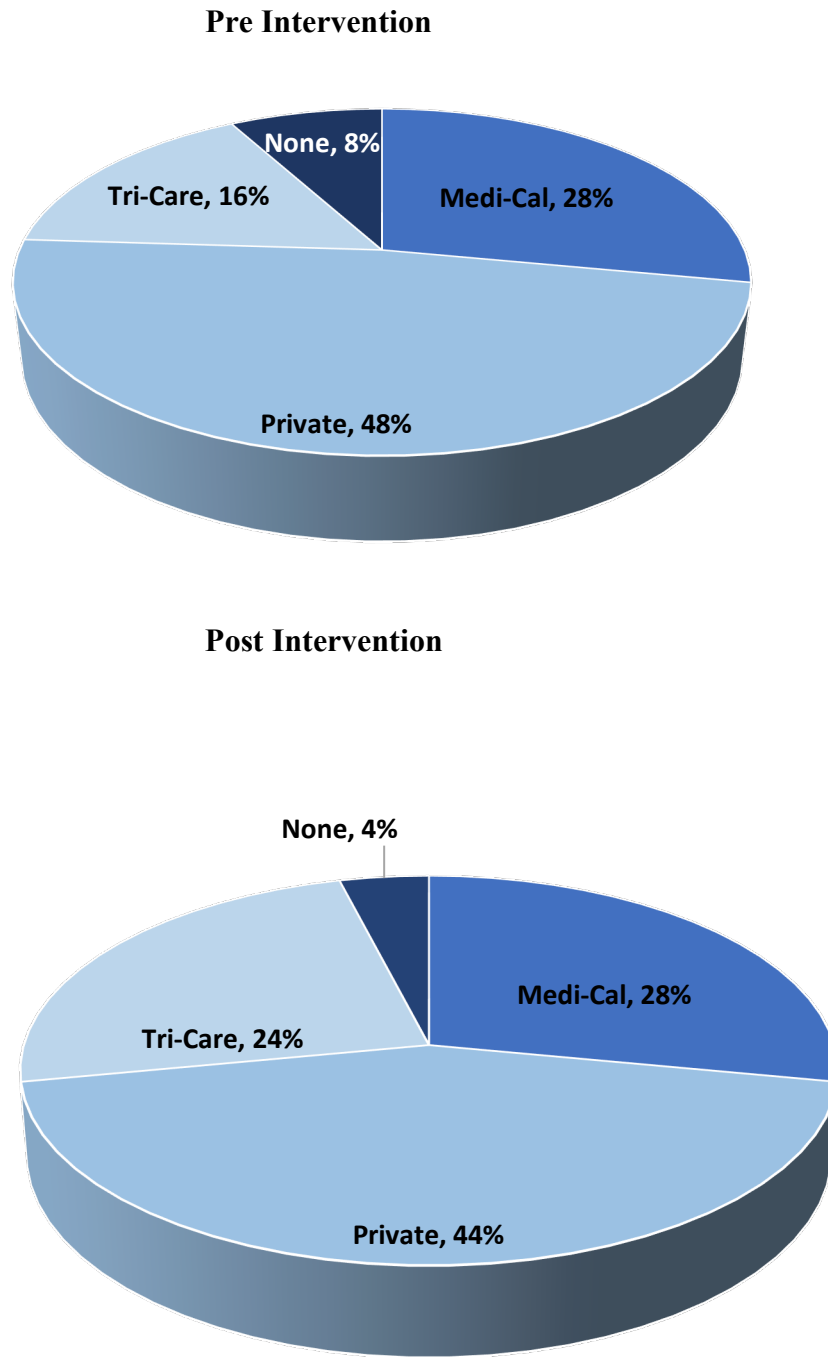
*Patient Visit Information*



*Note.* Light blue: number of visit types pre-project; dark blue: number of visit types during pilot project

**Figure 4**

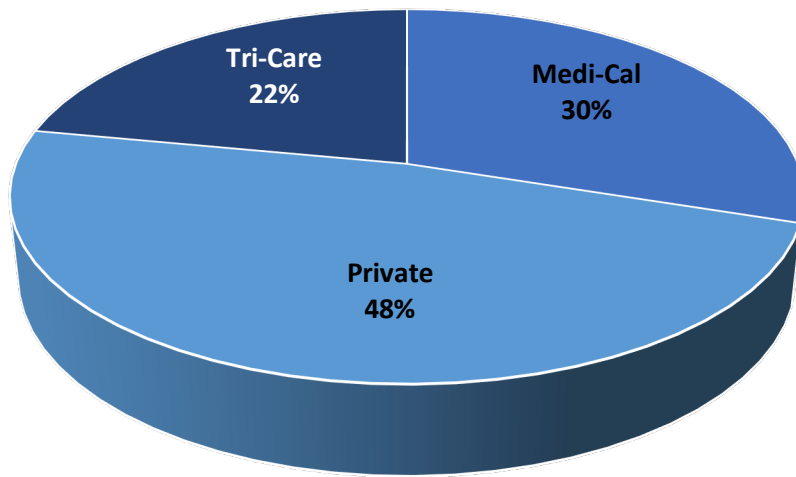
*Pre and Post Intervention Total Population Insurance Type*



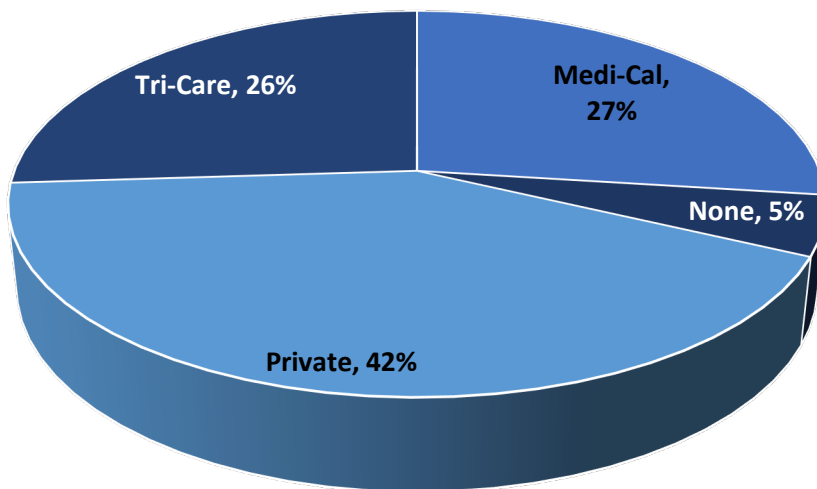
**Figure 5**

*Post Intervention Population: Screened vs. Not Screened*

**Screened:**



**Not Screened:**



### **Project Dissemination**

The DNP student was invited to present this project at the local National Association of Pediatric Nurse Practitioners (NAPNAP) meeting on September 28, 2019, with a focus on the screening process and referral mechanisms. The results of this evidence-based practice change project were first presented at the organization's Best Practice Council meeting on October 22, 2019 in conjunction with another medical provider who was conducting a similar PPD screening project within the organization. The CMO and various other providers attended this meeting. The DNP student formally conducted a stakeholder presentation on November 13, 2019. The DNP student's faculty adviser, clinical mentor, and other clinical providers were present.

The project summary and results were compiled into a poster presentation format and presented during DNP Presentation Day at the University of San Diego via Zoom on March 12, 2020. The DNP student was accepted for poster presentation of this project at the Western Institute of Nursing (WIN) Annual National Conference to be held April 2020. Unfortunately, due to a world-wide pandemic caused by novel coronavirus COVID-19, the conference was canceled.

### **Cost/Benefit Analysis**

The integration of the screening process was zero cost to the organization. The DNP student supplied the packets needed for the PARs to distribute and educated the clinical mentor and provided any guidance or clarification necessary during clinic hours. The educational material was provided by the Postpartum Health Alliance, a nonprofit organization located in San Diego; the brochures are printed in English and Spanish and were supplied free-of-charge. The EHR system was already in place including the section



to document the screening information, and the shortcut to document the discussion of the PHQ-9 scores had already been established using a “dot-phrase” technique. The clinic will be able to bill for this screening under ICD-10 code Z13.32 “Encounter for Screening for Maternal Depression,” generating additional revenue from these visit-types. If a mother was high risk a time modifier can also be added to billing in the EMR in order to charge more for the visit to be adequately compensated for the time and resources that went into the appointment. Non-financial benefits include promotion of the mother’s health as well as the prevention of potential future sequela in the infants such as mood disorders or social interaction issues.

### **Sustainability**

Due to the success of the DNP student’s pilot project, along with the success of another PPD screening project conducted at another office location, the organization as a whole has decided to implement screening for PPD at 1, 2, 4, and 6-month well-child visits system-wide according to AAP guidelines. The roll out is estimated to occur in Spring, 2020.

### **Conclusion**

The primary care pediatric provider has a unique opportunity to recognize PPD early and offer early support and intervention for the mother. This may help prevent unfortunate developmental and mental health outcomes for the infant and mother. Screening with the PHQ-9 can be integrated, as recommended by the AAP, into the pediatric primary care setting. The evidence supports PPD screening. It has been proven successful in practice in several specialties and is best practice while delivering care for infants and their families. Intervention and referral are improved by collaborative

relationships with community resources and support. Once an appropriate community resource is identified, and safety measures established for those identified with suicidal ideation, pediatric providers can be confident in screening mothers for PPD, knowing they have a safe and effective system in place to refer these mothers for services if needed.

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