Implementing a Postpartum Depression Screen in the Children’s Hospital Outpatient Center
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Quality Improvement Project

Introduction
Postpartum depression has been described as being the most underdiagnosed obstetric complication in the United States. Estimates of depression rates in postpartum women have been as high as 25% with rates as high as 60% in high-risk groups (low-income, single parent, teenage mother, positive family or previous history of depression, and alcohol or substance abuse). Undiagnosed maternal depression can have significant negative effects on the young infant’s developing brain and social interaction. Not only are infants of depressed mothers at risk for neglect, they are also at risk for failure to thrive, attachment disorders, developmental delay, and nonaccidental trauma. For these reasons, it is imperative that pediatricians be cognizant of a mother’s emotional well-being and explore any stressors that may be negatively impacting their patient.

The American Academy of Pediatrics (AAP), therefore, includes surveillance of parental social-emotional well-being in their *Bright Futures* guidelines for health supervision checks. Peak postpartum depression times have been shown to be 6 weeks, 2 to 3 months, and 6 months following delivery. Therefore, appropriate screening is encouraged at the 2-4 week, 2 month, 4 month, and 6 month well child checks. Prenatal visits are also encouraged by the AAP in order to identify families with high risk social situations before the child is born. Perhaps the most widely accepted screening tool has become the 10 question Edinburgh Postnatal Depression Scale (EPDS). This scale is endorsed not only by the AAP but also by the United Stated Preventive Services Task Force. The primary goal of this project was to implement such a screening tool during infant well child checks performed at the Children’s Hospital Outpatient Center (CHOC) and assess for both improved documentation and appropriate referral for mothers who screened positive.

Methods
As above, the AAP endorsed the EPDS in a 2010 clinical report discussing postpartum depression. The primary goal of this project was to implement such a screening tool at infant well child checks and assess for both improved documentation and appropriate referral for mothers who screened positive. The 2 week and 2 month well child checks were ultimately chosen based on the fact that many of our patients and their mothers qualify for Medicaid. Most Medicaid plans will only cover obstetrical visits up to six weeks postpartum. Therefore, we were afraid that if we screened mothers at later well child checks (as above, the AAP endorses the EPDS at both the 4 month and 6 month visits as well), they would be unable to receive appropriate care upon referral due to lack of payment. We obtained validated copies of the EPDS, both English (Appendix A) and Spanish, from the internet and began handing these to mothers when they arrived for their child’s appointment. Mothers were asked to complete the questionnaire before the resident entered the room so that it could be collected and scored prior to the end of the visit. Directions on how to score the screen (Appendix B) were obtained and scanned into pre-existing well child templates that were already being used by residents. The purpose of this was not only to simplify scoring but also to prompt residents to discuss mother’s emotional well-being while in the room. A positive screen is defined as one with a total score of
10 or greater or a positive response to question 10, which assesses for suicidal ideation. Any mothers with a positive score were to be referred to their obstetrician for further evaluation. Ideally, this would mean an appointment date and time in mother’s hand before leaving the clinic. In the case of suicidal ideation, social work was to get involved to help ensure that the mother received appropriate and emergent psychiatric care. Figure 1 shows a flow diagram depicting the appropriate course of action for the screen.

Figure 1. Flow diagram depicting the appropriate action required for various screening results.

Resident compliance with this project was measured by completing a chart review of all 2 week and 2 month well child checks that were seen during the month of July 2013. The charts were reviewed for the following actions: 1). Was the EPDS score documented?, 2). Was the EPDS form with mother’s responses scanned into the child’s chart?, 3). Were the results, either positive or negative, discussed in the resident’s assessment and plan?, and 4). If the screen was positive, was the appropriate course of action taken? As above, one of the primary goals of this project was to assess for improved documentation and discussion of postpartum depression. This was accomplished by also completing a retrospective chart review of all 2 week and 2 month well child checks that were seen in July 2012. These charts were simply reviewed for any discussion of postpartum depression.
Lastly, this project helped the clinic meet the South Carolina QTIP initiative of improved mental health screening in pediatrics.

**Results**

In total, 59 charts were pulled from July 2013 which matched the search criteria (2 week or 2 month well child checks). Of those charts, 5 were excluded (two no shows, two with incorrect appointment titles, and one chart could not be found by the name or DOB provided). Therefore, 54 total charts were tallied. Figure 2 breaks down the charts by result. There were 5 true positives, defined as an EPDS score \( \geq 10 \) or a positive answer to Question 10. There were 32 true negatives, meaning the score passed as a normal screen. The rest of the charts (n=17) could not be determined for various reasons: 1) The questionnaire was not scanned into the EMR, 2) The score was not documented by the resident, or 3) There was no discussion in the assessment and plan of the screening results.

As above, this project identified 5 mothers who screened positive for postpartum depression based on the EPDS criteria. Of those mothers, only one was referred appropriately to her obstetrician. The other 4 clearly had positive screens as either the score was documented, the questionnaire was scanned in and could be reviewed, or both. Two of these charts included no discussion or acknowledgement of the positive results. The other 2 charts included acknowledgement of the results in the assessment and plan but these mothers were not appropriately referred (one resident stated that “mother states her stresses are now gone,” and another resident documented that they would simply follow up at the next well child check). This latter chart is the most concerning as the mother’s screen not only had a positive score but she also admitted to suicidal ideation in Question 10. These results are summarized in Figure 3.
Figure 3. Resident action in response to five mothers who screened positive. 80% of mothers who should have been referred to their obstetrician were not.

The initial chart review was performed approximately 2-3 weeks into the project (of note, charts from June 2013 were also pulled but were ultimately left out of the final review for the sake of simplicity). This first PDSA cycle revealed that many residents were failing to document either a score or a discussion in their assessment and plan and/or were neglecting to turn the questionnaire in for scanning. Additionally, it appeared that many questionnaires were not being given to the mothers on the part of the nurses during check-in. The response, therefore, was to review the project design with both residents and nursing staff at the next CHOC QI meeting. In general, the documentation (again, in terms of scoring, scanning, and discussion) increased significantly after this reminder was given. Overall, there was a large increase in all of the above from the first week of the block in study (July 2013) to the last week. The largest improvement was demonstrated by the PGY2 class. These results are summarized in Figure 4.

While resident acknowledgement and discussion of postpartum depression improved over the course of this project, it was also necessary to compare these measures to charts that were completed before implementing the screen. Therefore, as discussed in “Methods” above, a chart review was also completed for 2 week and 2 month well child checks seen in July 2012. The same month of the year was chosen in order to control for the variable of having new interns. This chart review yielded a much smaller n value with only 30 charts meeting criteria. Since we were not using the EPDS at that time, these charts were simply reviewed for discussion of postpartum depression or assessment of mother’s emotional well-being during the visit. Of the 30, there were no charts that acknowledged postpartum depression. Therefore, there was a 43% increase in acknowledgement of postpartum depression after the EPDS was implemented. This notion is conveyed in Figure 5.
Figure 4. Graph depicting improvement in documentation after the first PDSA cycle. The charts were broken down by the level of training of the resident completing the chart. Comparison was made between the first and last weeks of the block.

Figure 5. Graph depicting a 43% increase in resident acknowledgement and discussion of postpartum depression from one year to the next after a screening tool was implemented.

Discussion

Overall, this project was successful in some ways and unsuccessful in others. For the most part, resident awareness and attention to postpartum depression was greatly increased after the screen was implemented. This is evidenced by the 43% improvement in documentation from one year to the next. Additionally, the screen identified 5 women in 4 weeks who met criteria for further evaluation of depression. Where this project failed, however, is that 4 of those 5 women did not receive appropriate care or referral. As discussed above in “Results,” this was either due
to resident negligence or not adhering to the study design. One major barrier during this project was that there was no clinic social worker in the month of July 2013; the clinic was in the process of hiring a new social worker. Additionally, July is the month in which interns are beginning rotations for the first time. Not only do they have to learn a new computer system, navigate the clinic, and acclimate to a new setting, but they are also asked to quickly remember to implement several ongoing QI projects. Whatever the barrier, the mother’s health and the overall wellbeing of the child are ultimately reliant on this referral, and no improvement is significant if this goal is not achieved.

There are many ways in which this project could be expanded in the future to benefit not only our patients but also our clinic. While this project implemented the screen in both English and Spanish, there are several other validated translations of the EPDS. French, Arabic, and Chinese are just a few that would be useful for some of our families, for example. Studies have shown that mothers are identified as having postpartum depression even as late as the 6 month well child check. In fact, 6 months is identified as a major peak for postpartum depression to occur. One could argue that in the future, we should therefore include the screen at all AAP-recommended visits. Additionally, Kabir et. al. concluded in their Pediatrics article that a 3 question anxiety subscale of the EPDS was faster, easier to implement, and sensitive enough to detect depression. It may, therefore, save both time and resources (i.e. paper) to simply prompt residents to ask three questions and document mother’s responses. Positive mothers in Kabir’s study were still referred, so the overall design would remain the same. Lastly, regardless of the length of the questionnaire, the AAP endorses that screening for postpartum depression is reimbursable under CPT code 99420 (“Administration and interpretation of a health risk assessment instrument”). Individual payback for each EPDS may be small but cumulatively, such reimbursement may be financially beneficial to our clinic.

References


Acknowledgements
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Appendix A: English Version of the EPDS

Edinburgh Postnatal Depression Scale (EPDS)

<table>
<thead>
<tr>
<th>Question</th>
<th>0: Not at all</th>
<th>1: A little</th>
<th>2: Quite a bit</th>
<th>3: Extremely</th>
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<tbody>
<tr>
<td>1. I have felt happy</td>
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<td>2. I have been annoyed most of the time</td>
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<td>3. I have been waiting and expecting the worst</td>
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<td>4. I have been unable to stop crying</td>
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<td>5. I have felt that life was worthwhile</td>
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<td>6. I have been able to carry out daily chores</td>
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<td>7. I have felt close to tears</td>
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<td>8. I have felt that life is not a waste of time</td>
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<td>9. I have felt full of energy</td>
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<td>10. I have been goede out of control</td>
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Please complete the other questions in the same way. This would mean 'I have felt happy most of the time during the past week'.

If you are pregnant or have recently had a baby, we would like to know how you are feeling. Please circle the response that best describes your level of depression.

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Edinburgh Postnatal Depression Scale (EPDS)
Appendix B: Scoring Instructions for the EPDS

SCORING

QUESTIONS 1, 2, & 4 (without an *)
Are scored 0, 1, 2 or 3 with top box scored as 0 and the bottom box scored as 3.

QUESTIONS 3, 5-10 (marked with an *)
Are reverse scored, with the top box scored as a 3 and the bottom box scored as 0.

Maximum score: 30
Possible Depression: 10 or greater
Always look at item 10 (suicidal thoughts)

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