Individual QI projects from single institutions

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Improving Postpartum Depression Screening Rates Using a Quality Improvement Framework in a Community-based Academic Primary Care Clinic

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ABSTRACT

Introduction: Maternal postpartum depression (PPD) is the most common diagnosis during the postpartum period, with a higher incidence in underserved populations. Though PPD often goes undiagnosed, prompt diagnosis has a positive impact on several measures of children's health and development, as well as maternal health. To increase routine screening per American Academy of Pediatrics recommendations, we implemented a multipronged quality improvement (QI) initiative centered around a newborn coordinator embedded in our primary care clinic. **Methods:** A multidisciplinary team implemented a QI initiative in a community-based academic primary care clinic. We used the plan-do-study-act method and other QI tools to improve our processes and p-type control charts to monitor improvements. The interventions centered on workflow changes and staff education with aims to increase our PPD screening rates to 75%, maintain appropriate referral rates for parents with positive PPD screeners above 90%, and ensure no disparity in rates of screening regardless of race/ethnicity, language, and insurance status. **Results:** PPD screening rates for all well child care visits from birth to age 6 months increased from a mean of 16 % at baseline to 72%. Additionally, we maintained a referral rate for positive PPD screens above 90%. Our health equity analysis did not demonstrate any disparity in our screening rates. **Conclusions:** Applying a combination of education and process workflow changes can successfully increase screening rates for PPD in a community-based academic primary care clinic. *(Pediatr Qual Saf 2025;10:e802; doi: 10.1097/pq9.0000000000000802; Published online February 28, 2025.)*

INTRODUCTION

Postpartum depression (PPD) is one of the most common diagnoses during the postpartum period, with 1 in 7 mothers developing PPD after giving birth.[1,2] Mothers living in urban areas, mothers of preterm children, and adolescent mothers are at greatest risk of developing PPD.[1,2] Additionally, members of historically marginalized racial and ethnic communities, specifically Black and Hispanic women, as well as women with low socioeconomic status, are less likely to be screened for and diagnosed with PPD.[3]

A delayed or absent diagnosis of PPD can have lasting effects on maternal health. These effects can include persistent maternal clinical depression and other mood-related disorders and decreased parent-child bonding. In severe cases, untreated PPD can lead to self-harm, suicide, harming of the infant, or infanticide.[4] Children of mothers with PPD can also have long-lasting negative effects, including delayed speech and language development and increased risk of behavioral disorders, including attention deficit and hyperactivity disorder, social developmental delays, and attachment disorders.[5–7]

The American Academy of Pediatrics (AAP) recommends parents be screened at the 1-, 2-, 4-, and 6-month well-child visits (WCC).[8] Although new mothers may be screened for PPD during postpartum visits with their obstetrician, parents and infants have at least 6 visits in the first 6 months of life with their pediatrician, thus increasing screening opportunities.[9] Additionally, other caregivers

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can exhibit depression, and there is evidence supporting the screening of all caregivers present at WCC visits.[10]

We developed the following problem statement: primary care providers have frequent visits with infants and their parents in the first months of life. Timely and frequent screening for PPD is important to decrease the impact of undiagnosed PPD.

We hypothesized that a multidisciplinary multipronged quality improvement (QI) initiative centered around a newborn coordinator would increase the screening rates for postpartum depression in parents of infants up to 6 months of age seen in our clinic.

We sought to develop and implement a QI initiative with the following aims:

1. Increase PPD monthly screening rates at all WCC visits from birth to 6 months of age from a mean of 16%–75%;
2. Increase appropriate referral rates for parents with positive PPD screeners to 90%;
3. Ensure there is no disparity in screening rates for PPD in all parents in our clinic, regardless of race/ethnicity, language, and insurance status.

METHODS

Setting

We conducted this study at Boston Children's Primary Care at Martha Eliot Health Clinic (MEHC). MEHC is an academic pediatric primary care clinic located in an urban area, 1 of 2 primary care clinics at Boston Children's Hospital, with approximately 7,400 total empaneled patients, including 2,196 patients between the ages of 0 and 6 months. On average, 16 newborns are welcomed to the practice monthly. Sixty-five percent of our patients identify as Hispanic, and 15% of patients as Black. Eighty-three percent of patients are on Medicaid, and 44% of our patients have identified Spanish as their preferred language.

PPD Screener

We used the validated Edinburgh Postpartum Depression Scale (EPDS) as the tool to evaluate maternal depression.[10] It has high sensitivity and specificity for PPD.[11] It is a 10-question screener and can be completed in a few minutes. Each question's response is scored on a sliding scale between 0 and 3 based on the frequency of symptoms. The highest possible score is 30. A score of 10 points or higher indicates a risk of postpartum depression, requiring further evaluation and potential intervention. In our clinic, all parents with positive EPDS are referred to our social work team unless they are already under the care of a mental health clinician and have close follow-up already in place. Our front-desk administration team gave the paper screener to caregivers during check-in, and families were asked to complete the screener before the medical provider arrived in the room. The screener was available in English and Spanish. Non-English and non-Spanish-speaking patients used interpreter support to complete the screen.

The AAP recommends that parents be screened for postpartum depression at the 1-, 2-, 4-, and 6-month newborn visits.[12] However, because parents can be affected by PPD earlier than 1 month postpartum, especially parents in historically marginalized groups, we chose to start screening at the Newborn visit and continue screening at the 2-week, 1-, 2-, 4-, and 6-month WCC.[13,14]

Newborn Coordinator Role

At MEHC, the newborn coordinator is embedded in the primary care clinic and can support families in real time or by telephone 5 days a week. A core responsibility of our newborn coordinator role focuses on the population management of all patients younger than the age of 2 years, particularly ensuring that patients attend all the recommended WCCs. In this project, the newborn coordinator joined the QI project team, composed of a physician champion, a nursing representative, an administrative leader, and a research assistant.

Measures

We used the Boston Children's Hospital's data warehouse system (BCH 360) to extract a complete list of patients seen at MEHC for WCC visits less than 7 months. A chart review was then used to determine which caregivers received an EPDS screener. Chart review was also used to extract the screener's results and to determine any follow-up referrals made. We tracked the EPDS screener completion rates and EPDS-positive screener intervention rates using a statistical process control chart (p-chart). A mean shift occurred after seven or more points were plotted consistently above or below the mean.

Looking toward our goal of equal care for families of all characteristics, we conducted a health equity analysis that examined the proportion of completed WCC/PPD screens using a combination of relative difference and χ^2. Demographic data, including race, ethnicity, language, and insurance type, were pulled directly from our electronic medical record (EMR) system. To determine if there was a disparity between these groups, we calculated the relative difference for each characteristic category utilizing a reference group as a comparator. The reference group was defined as the best performer (highest PPD screen) and made up at least 5% of the population. To understand the significance of the differences, we performed a χ^2 calculation using a P value of ≤ 0.10. We interpreted $P \leq 0.10$ and a relative difference of ±10% as similar performance, ±11%–40% as a moderate difference, and ±>40% as a large difference. All P values that were >0.10 were interpreted as similar performance.

Interventions

A driver diagram, as shown in Figure 1, was created to identify care gaps that may have contributed to incomplete screeners. The interventions implemented were designed

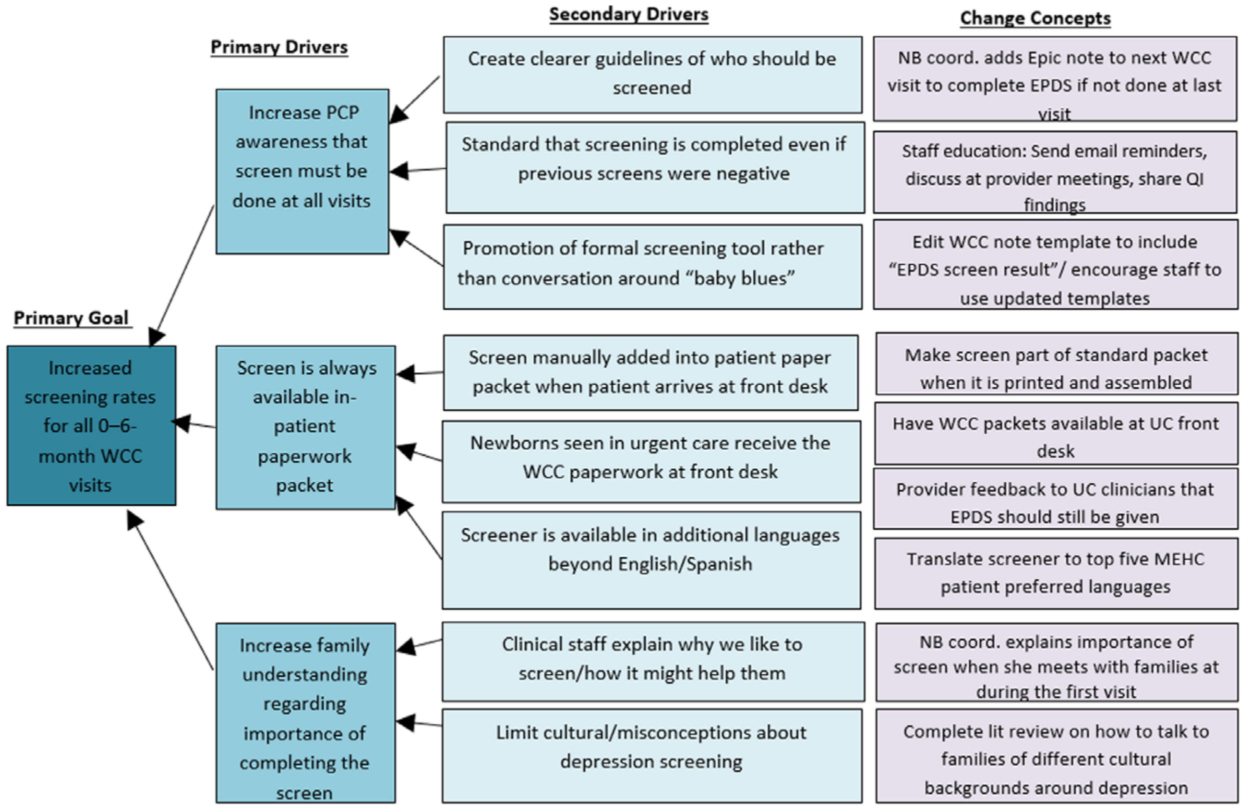

Fig. 1. Driver diagram from EPDS screener completion.

based on the change concepts derived from the 3 primary drivers described in Figure 1. We implemented several plan-do-study-act cycles to evaluate the interventions.

The team offered provider education to review the recommended type and frequency of PPD screenings, what constitutes a positive screen and the recommended process around referrals and follow-up for positive screens.

In addition, the WCC note template in the EMR was updated to include "EPDS screen results." A formal provider communication was done in July 2023 to inform providers of the change and encourage them to use the updated WCC note template. After this formal communication, we sent various email reminders and conducted discussions at provider meetings.

The newborn coordinator tracked the completion of EPDS screeners weekly by reviewing visit notes to ensure accurate documentation of a completed screener. If there is an absence of a screener, the newborn coordinator documented the missing screener in the EMR as a prompt to have it completed at the next visit. A process map outlining the newborn coordinator's system is shown in Figure 2.

All parents receive standardized paperwork packets at check-in for WCC visits at MEHC. We worked to ensure that EPDS questionnaires were a part of the 0- to 6-month WCC packets, including packets for patients who had to be seen in the urgent care clinic for their WCC due to provider availability. We also reminded urgent care providers of the need to complete the EPDS screener.

Another important aspect of providing universal EPDS screening was ensuring all parents received a questionnaire in their preferred language. MEHC serves a diverse population, with about 44% of parents identifying Spanish as their preferred language. The screener is available in English and Spanish; parents can receive it in their preferred language. To accommodate parents with a different language preference, interpreters assist the parents in completing the screener as often as possible.

Additionally, looking to expand the accessibility of the screener, in April 2024, we requested that Boston Children's Hospital Translation service translate the EPDS into Haitian Creole and Cape Verdean Creole, as we noticed an increase in parents speaking these languages.

The newborn coordinator meets with all new families before or after the provider meets with the family to go over a welcome package containing educational resources for parents. This meeting allowed the newborn coordinator to orient new parents to the screener, review its purpose and importance, and encourage parents to complete it.

RESULTS

Increasing PPD Screening

Throughout the intervention, we reviewed 1,823 patient records. Of those, 878 patients were screened for PPD.

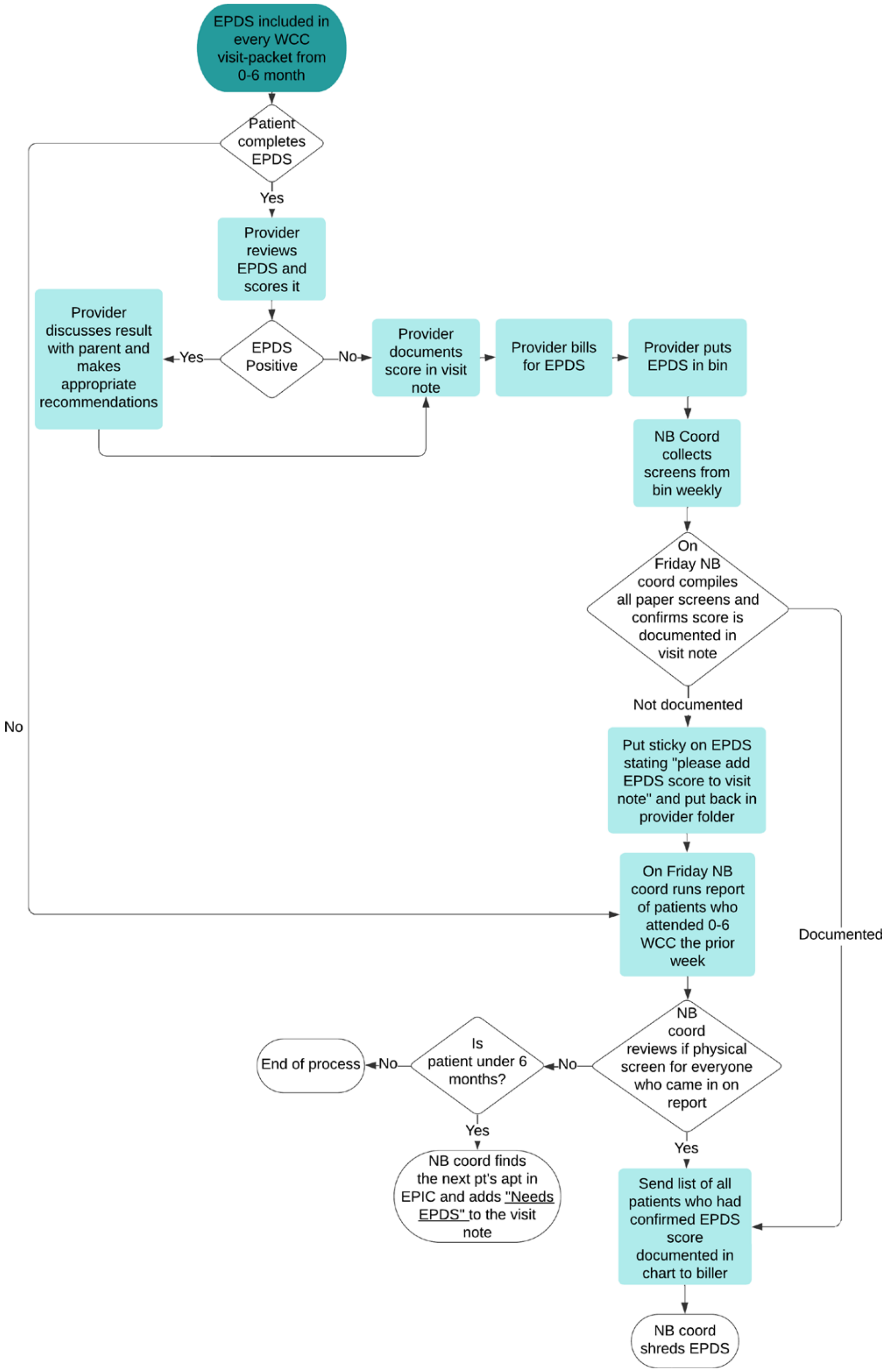

Fig. 2. Process map of newborn coordinator role in EPDS screener completion.

Figure 3 displays the monthly EPDS screening completions during this study. At the start of the intervention in June 2022, the rate of completed PDD screening was 4% (n = 25). This rate rose to 72% (n = 80) by May 2024. There were three mean shifts during this project. The first mean shift occurred in August 2022, with the mean increasing from 16% to 35%. The second mean shift occurred in February 2023, with the mean increasing from 35% to 51%. The last mean shift occurred in October 2023, with the mean increasing to 65%

Referrals for Positive EPDS

There were inconsistencies in the intervention rate until provider education took place in July 2023 (Fig. 4).

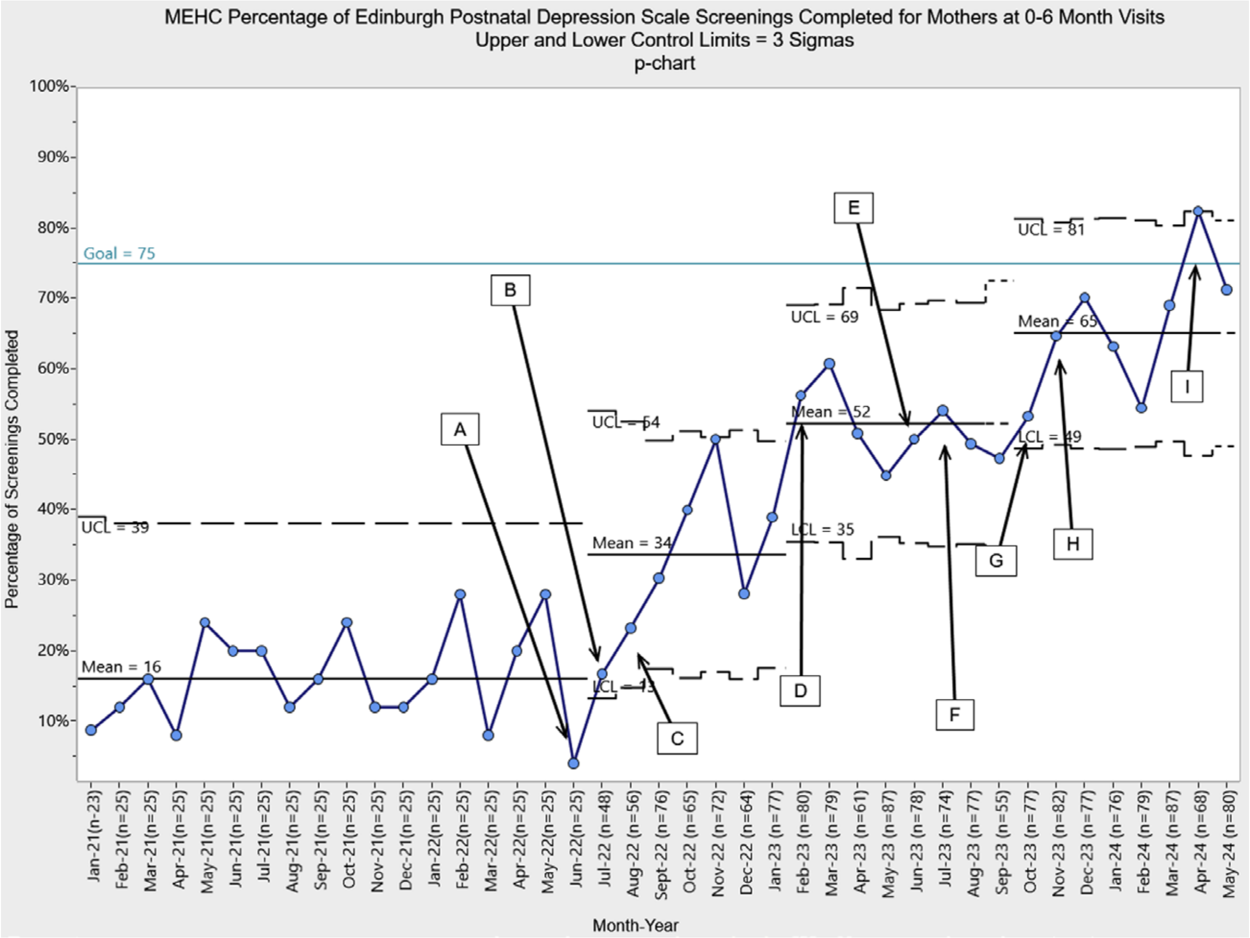

Fig. 3. EPDS screening completion rates from January 2021 to May 2024.

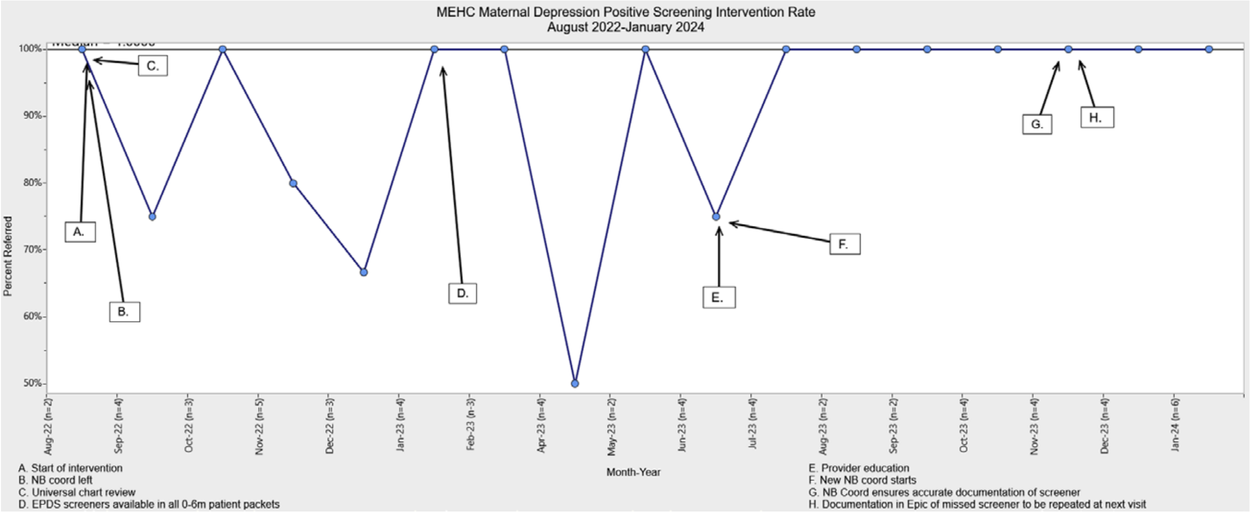

Fig. 4. Positive maternal depression screening intervention rates.

Following provider education, the intervention rate rose from 75% to 100% and remained at 100% for the remainder of the project.

Health Equity Analysis

We conducted a health equity analysis using a standard disparity stratification calculation by the Boston Children's Hospital Patient Safety and Quality Program. In this analysis, when comparing performance between intervention groups, the patient group who performs the best and makes up at least 5% of the denominator (entire patient population) is used as a reference group to compare performance within categories. A χ^2 calculator derives the *P* value by comparing the reference group to

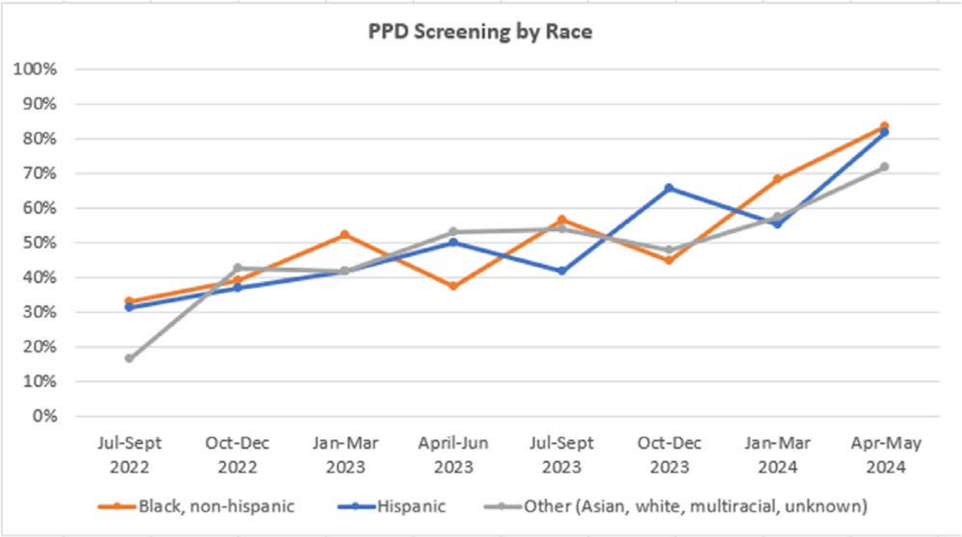

Fig. 5. PPD screening by race.

the other groups. An equity disparity is inferred if the *P* value is significant, and there is a 10% greater relative difference in performance between groups.

In our project, the screening rates increased for all groups throughout this intervention, with no statistical difference found comparing race/ethnicity (Fig. 5). The group of Spanish-speaking parents had the highest completion rate, and as a result, this group was used as a statistical reference in our health equity analysis. We found no statistical difference in screener completion based on language. Private insurance was used as the reference group; no statistical difference was found when comparing private and public insurance. Specifically, a χ^2 test of independence was conducted to examine the relationship between family characteristics and the completion of the PDD screening. The test revealed no significant association between completion and families' race ($\chi^2 = 2.1455$, df = 6, $P = 0.9058$), families' insurance type ($\chi^2 = 5.7084$, df = 2, $P = 0.0576$), and families' language ($\chi^2 = 0.7303$, df = 2, $P = 0.6941$).

DISCUSSION

Following the AAP recommendations to screen for PDD, we implemented a QI project aiming to (1) increase our screening rates for PPD at WCCs for parents of patients' ages newborn to 6 months, (2) increase our rates of referral for positive PDD screenings, and (3) do so uniformly for families of all demographic characteristics. Our interventions covered several domains, including provider and family education and change in administrative processes and were spearheaded by our newborn coordinator. We successfully increased our rates of PDD screening, increased and maintained universal referral of positive screens, and did so for all families without any detectable disparities by race/ethnicity, language, or insurance.

Throughout this study, we implemented various plan-do-study-act cycles to increase EPDS completion. Each study intervention led to a rise in screener completion and highlighted gaps in care that led to new interventions. Ensuring that EPDS screeners were universally available in the previsit packages led to the first and largest percent increase in screener completions. Enhanced care coordination by the newborn population manager, including creating a process highlighting missed screening opportunities, successfully increased screener completion from a plateau of 51% to 65%. Increased provider education resulted in increased detection of positive screenings and a 100% referral system to support caregivers positive for PPD. The positive effects of provider education throughout the QI initiative were consistent with data from other studies. This education resulted in increased detection of positive screenings and an increase to 100% positive referral dates.[15]

Previous work on disparities in PPD diagnosis suggests women on public health insurance have higher positive screening rates for PPD yet are screened later, experience delayed access to treatment, and more limited treatment options than women with private insurance.[14] Our QI intervention allowed for universal PPD screening of caregivers at all WCC visits from birth to age 6 months. This intervention ensured that all parents screened positively, regardless of insurance, were referred to our social work team earlier, thus allowing for faster connection to treatment and it is hoped for better outcomes.

To build on our results, our future work could include addressing other barriers in care that may contribute to missed screeners, including better-preparing providers to address the stigma associated with mental illness diagnosis, leading to patients resisting screening. Maximizing provider education to ensure culturally informed conversations around PDD could lead to even greater screening rates.

Potential limitations in our project include lapses in staffing the newborn coordinator role and changes in administrative staffing at the front desk (leading to inconsistent paperwork package composition). This project was also very time-consuming, requiring a significant amount of chart review for the research assistant. Additionally, the newborn coordinator contributed much time to chart review and EMR documentation to ensure screener completion.

However, we have been able to shift our focus to project maintenance. Our significant improvement has led us to rely on billing data to track screening completions moving forward. The newborn coordinator also no longer monitors and messages providers regarding missed screeners, as the initial efforts were to support providers in incorporating EPDS screenings into their visit routine. Additionally, Boston Children's primary care clinic has recently adopted a new EMR that requires the electronic completion of screeners. In the future, it will be important to understand and document the impact, if any, these changes will have on screening rates.

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