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A Program of ZERO TO THREE

## Maternal Depression: HealthySteps Research Guidance

Maternal depression can negatively impact mothers, infants, and families—particularly if left untreated.<sup>1,2</sup> Maternal depression is thought to affect more than one-third of women of childbearing and childrearing age,<sup>3</sup> although there is no nationwide estimate of its prevalence.<sup>4</sup> Symptoms may include chronically depressed mood, irritability, withdrawal and social isolation, irregular sleep patterns and low energy levels, feelings of hopelessness, and loss of motivation and interest in normal activities.<sup>5-7</sup> Maternal depression can disrupt caregiver–child attachment and interaction, breastfeeding initiation and duration, and engagement in caregiver activities that promote child health and safety (e.g., attending scheduled well-child visits, seeking recommended treatment for children).<sup>8-11</sup>

HealthySteps sites are well positioned to work with families to identify caregivers more susceptible to maternal depression and provide support and referrals for mental health services. HealthySteps sites can give families tailored supports and information as well as successfully connect them with mental health services. For more information on HealthySteps activities that can support caregivers at risk for maternal depression, see “Maternal Depression: HealthySteps Theory of Change.”



### Previous Research on HealthySteps and Maternal Depression

Previous HealthySteps research has shown promise of a connection between the model, identification of maternal depression, and referral to services:

- In the HealthySteps program national evaluation, a randomized controlled trial (RCT), mothers who were at risk for depression and participated in HealthySteps were more likely than mothers who did not participate in HealthySteps to discuss their feelings of sadness with a staff member at the practice. HealthySteps mothers also were more likely to receive a referral for maternal depression services.<sup>12</sup>

- In a pilot project of two military pediatrics clinics that implemented HealthySteps, the rates of postpartum depression screenings were significantly higher for mothers enrolled in HealthySteps compared with those of mothers in the control group (96% and 73.1%, respectively).<sup>13</sup>
- In a quasi-experimental study that compared families receiving HealthySteps or HealthySteps that included a prenatal component with families who received pediatric primary care as usual, mothers enrolled in HealthySteps reported fewer depressive symptoms at three months than did mothers in the comparison group.<sup>14</sup>
- In a study comparing the Edinburgh Postnatal Depression Scale (EPDS) scores of HealthySteps mothers with those of non-HealthySteps mothers, symptoms of maternal depression decreased at a faster rate for mothers enrolled in HealthySteps.<sup>15</sup>

**Additional research is warranted to better understand how HealthySteps mitigates risk for maternal depression.** The following section presents sample research questions and approaches sites can use to examine how HealthySteps activities can support caregivers more susceptible to depression.

## How Your Site Can Build Evidence Related to Maternal Depression

Your HealthySteps site can conduct its own research to help learn what strategies work best to identify and support caregivers with greater risk of depression and demonstrate the value of HealthySteps; there are a variety of factors to consider when determining which questions you would like to address. First, consider where your site is with respect to implementing HealthySteps with fidelity to the model. Greater fidelity to implementation is associated with achieving better outcomes.<sup>16</sup> Thus, you may want to ensure that your site is meeting at least basic fidelity requirements before evaluating questions that require more intensive methods (e.g., quasi-experimental studies).

Also consider the resources available to conduct your study. Some research approaches generally take more effort because they require a certain study design or level of data collection. Your site's resources (e.g., data already collected, access to an evaluator or statistician) can help offset or amplify the typical level of intensity.

Your site can decide which families you want to include in your research based on what you set out to study (e.g., the rate of maternal depression for all caregivers of children ages 0-3 seen at the practice). However, we expect that studying maternal depression among Tier 3 families will provide the greatest opportunity to see HealthySteps' impact and recommend that more rigorous research focuses on that population.



Note that HealthySteps research may require review and approval from an Institutional Review Board (IRB). You may also want to identify a researcher and/or external evaluator to help you plan and conduct a research study. Also, consider how to involve families in the selection of research questions, development of measure development, and/or interpretation of findings. Family participation in shaping the research process is a key step in embedding equity into your research and helping to ensure the findings are accurate and useful for participants. Finally, you should reach out to the HealthySteps National Office at ZERO TO THREE to learn more about available support related to your evidence-building efforts.

Exhibit 1 on the following page provides an overview of potential research topics, recommended study designs, and level of intensity. Each research topic also links to a comprehensive profile with information on related:

- **Research questions** to answer
- **Methods**, including study designs,<sup>a</sup> data sources, and anticipated level of intensity
- **Potential measures** to better understand maternal depression
- **Target population** on which to focus data collection
- **Potential actions** to help answer questions of interest

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<sup>a</sup> We do not recommend that sites conduct a RCT to answer the research questions in this document. Please contact the National Office to discuss RCT design considerations for HealthySteps (e.g., a cluster RCT involving multiple sites).












## Using HealthySteps Administrative Data for Program Improvement

HealthySteps sites are required to collect and report data on screening rates for maternal depression and the rate of maternal depression concerns for all mothers receiving [Tier 1](#) services. Sites also collect and report data on referrals made and referral outcomes for [Tier 3](#) families.

You may be interested in using administrative data for program monitoring and improvement even if your site is not ready to conduct a research study. For instance, you may assess your screening rate before you begin HealthySteps (baseline) and compare with your screening rates going forward.

To see how maternal depression and screening rates at your site compare with national averages, you could compare your data with publicly available data sources. Examples include Measure 24: Postpartum Depression from the [National Outcome Measures data](#) released by the Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau and the [Depression Screening Rate](#) from the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program National Threshold Values, also through HRSA.

**Exhibit 1. Sample Research Approaches for HealthySteps Sites**

Research topic	Study design	Intensity
<i>Maternal depression screening</i>		
<ul style="list-style-type: none"> <li><u>Percentage of mothers screened, change in screening rates, and demographics associated with screening rates</u></li> </ul>	Descriptive	
<ul style="list-style-type: none"> <li><u>Impact of HealthySteps on screening rates</u></li> </ul>	Quasi-experimental	
<i>Maternal depression concerns</i>		
<ul style="list-style-type: none"> <li><u>Rate of maternal depression</u></li> </ul>	Descriptive	
<ul style="list-style-type: none"> <li><u>Demographics associated with maternal depression</u></li> </ul>	Correlational	
<i>Maternal depression referrals</i>		
<ul style="list-style-type: none"> <li><u>Barriers to accessing services and needed resources</u></li> </ul>	Descriptive	
<ul style="list-style-type: none"> <li><u>Rate of referrals and demographics associated with referrals</u></li> </ul>	Correlational	
<i>Maternal depression outcomes</i>		
<ul style="list-style-type: none"> <li><u>Rate of service receipt and demographics associated with service receipt</u></li> </ul>	Correlational	
<ul style="list-style-type: none"> <li><u>Relationship between mental health service receipt and maternal mental health</u></li> </ul>	Longitudinal	
<ul style="list-style-type: none"> <li><u>Relationship between community services receipt and maternal mental health</u></li> </ul>	Longitudinal	
<ul style="list-style-type: none"> <li><u>Impact of HealthySteps on maternal mental health service receipt</u></li> </ul>	Quasi-experimental	
<ul style="list-style-type: none"> <li><u>Impact of HealthySteps on depressive symptoms</u></li> </ul>	Quasi-experimental	

# Maternal Depression Screening: Percentage of Mothers Screened, Change in Screening Rates, and Demographics Associated With Screening Rates

## Research questions

- What percentage of mothers of infants ages 0-6 months are screened for maternal depression at least once in the first six months postpartum?
- Which demographic characteristics (e.g., race, ethnicity, insurance status) are related to maternal depression screening rates among mothers of infants ages 0-6 months? If there are differences, why?
- Are screening rates of mothers of infants ages 0-6 months increasing with each year of HealthySteps implementation?

## Methods

- Descriptive study using administrative data or payer claims data (e.g., Medicaid, private insurance)

## Potential actions

- Extract data on the number of mothers with at least one completed maternal depression screening in the first six months postpartum
- Consider a root cause analysis to understand why there are differences (if applicable)

## Intensity

Low intensity



## Potential measures

Screening tools:<sup>a</sup>

- Edinburgh Postnatal Depression Scale (EPDS)
- Patient Health Questionnaire-2/9 (PHQ-2/9)

## Target population

Mothers of infants ages 0-6 months in Tiers 1, 2, and/or 3

<sup>a</sup> The EPDS and PHQ-2/9 have been used in previous HealthySteps research or innovation projects.

# Maternal Depression Screening: Impact of HealthySteps on Screening Rates

## Research questions

- Compared with receipt of pediatric primary care as usual, does participation in HealthySteps increase the likelihood of mothers having a completed screening for maternal depression in the first six months postpartum?
- If yes, does the likelihood of screening for maternal depression differ by race or ethnicity? If so, why?

## Methods

- Quasi-experimental (e.g., matched comparison group) study using administrative data or payer claims data (e.g., Medicaid, private insurance)

## Potential actions

- Consider data available for comparison families<sup>a</sup>
- Determine if you need an external evaluator and/or data analyst to compare HealthySteps sites' maternal depression screening rates with screening rates of comparison sites within the health system
- Consider a root cause analysis to understand why there are differences (if applicable)

## Intensity

High intensity



## Potential measures

Screening tools:<sup>b</sup>

- Edinburgh Postnatal Depression Scale (EPDS)
- Patient Health Questionnaire-2/9 (PHQ-2/9)

## Target population

Mothers of infants ages 0-6 months in Tiers 1, 2, and/or 3

<sup>a</sup> For example, a matched comparison study is an option only if other non-HealthySteps sites in your health system collect the same measures as does your HealthySteps sites. A multiple baseline/staggered start design is an option if you are expanding to new sites.

<sup>b</sup> The EPDS and PHQ-2/9 have been used in previous HealthySteps research or innovation projects.

# Maternal Depression Concerns: Rate of Maternal Depression

## Research questions

- What percentage of mothers have an elevated score for maternal depressive symptoms at least once in the first six months postpartum? Is the rate of elevated scores higher at certain points?

## Methods

- Descriptive study using administrative data

## Potential actions

- Extract data on the number of mothers with at least one elevated score for maternal depression screen in the first six months postpartum
- If your site conducts screening at multiple time points, extract screening scores for each administration

## Intensity

Low intensity



## Potential measures

Screening tools:<sup>a</sup>

- Edinburgh Postnatal Depression Scale (EPDS)
- Patient Health Questionnaire-2/9 (PHQ-2/9)

## Target population

Mothers of infants ages 0-6 months in Tiers 1, 2, and/or 3

<sup>a</sup> The EPDS and PHQ-2/9 have been used in previous HealthySteps research or innovation projects.

# Maternal Depression Concerns: Demographics Associated With Maternal Depression

## Research questions

- Among HealthySteps mothers, which demographic characteristics are associated with an elevated score for maternal depression? If there is a difference, why?

## Methods

- Correlational study using administrative data

## Potential actions

- Determine if demographic data are captured for most families at your site
- Extract data on demographic characteristics of mothers with an elevated score for maternal depression and compare with demographic characteristics of mothers without an elevated score
- Determine if you need an external evaluator and/or data analyst to examine the relationship between demographic characteristics and positive maternal depression screens
- Consider a root cause analysis to understand why there are differences (if applicable)

## Intensity

Medium intensity



## Potential measures

Screening tools:<sup>a</sup>

- Edinburgh Postnatal Depression Scale (EPDS)
- Patient Health Questionnaire-2/9 (PHQ-2/9)

## Target population

Mothers of infants ages 0-6 months in Tiers 1, 2, and/or 3

<sup>a</sup> The EPDS and PHQ-2/9 have been used in previous HealthySteps research or innovation projects.

# Maternal Depression Referrals: Barriers to Accessing Services and Needed Resources

## **Research questions**

- What structural barriers to accessing mental health services do HealthySteps caregivers experience?
- What resources or supports do HealthySteps mothers need most to promote mental health?

## **Methods**

- Descriptive study using qualitative methods (e.g., interviews, focus groups, open-ended survey questions)

## **Potential actions**

- Develop measures that are culturally appropriate and sensitive to caregivers' literacy levels
- Pilot test questions with selected families to ensure questions are easy to understand
- Collect data in multiple languages
- Provide participant incentives to reimburse families for their time

## **Intensity**

Medium intensity



## **Potential measures**

Locally specific questions to better understand the needs of caregivers in the community and the potential role of stigma

## **Target population**

Mothers in Tiers 1, 2, and/or 3

# Maternal Depression Referrals: Rate of Referrals and Demographics Associated With Referrals

## Research questions

- Among mothers with positive depression screenings, what percentage were referred for maternal depression services?
- Which demographic characteristics are associated with referral for maternal depression services? If there are differences, why?

## Methods

- Correlational study using administrative data

## Potential actions

- Determine if demographic data are captured for most families at your site
- Document and track referrals made
- Determine if you need an external evaluator and/or data analyst to examine the relationship between demographic characteristics and positive maternal depression screenings
- Consider a root cause analysis to understand why there are differences (if applicable)

## Intensity

Medium intensity



## Potential measures

Screening tools:<sup>a</sup>

- Edinburgh Postnatal Depression Scale (EPDS)
- Patient Health Questionnaire-2/9 (PHQ-2/9)

Receipt of referral

## Target population

Mothers in Tier 3

<sup>a</sup> The EPDS and PHQ-2/9 have been used in previous HealthySteps research or innovation projects.

# Maternal Depression Outcomes: Rate of Service Receipt and Demographics Associated With Service Receipt

## Research questions

- Among mothers referred for maternal depression services, what percentage received at least one service?
- Among mothers referred to mental health services, which demographic characteristics are associated with receipt of services? If there are differences, why?

## Methods

- Correlational study using administrative data or payer claims data (e.g., Medicaid, private insurance)

## Potential actions

- Document and track referrals made and referral outcomes or access claims data
- Determine if demographic data are captured for most families at your site
- Determine if you need an external evaluator and/or data analyst to examine the relationship between demographic characteristics and positive maternal depression screenings
- Consider a root cause analysis to understand why there are differences (if applicable)

## Intensity

Medium intensity



## Potential measures

Screening tools:<sup>a</sup>

- Edinburgh Postnatal Depression Scale (EPDS)
- Patient Health Questionnaire-2/9 (PHQ-2/9)

Referral outcomes

## Target population

Mothers in Tier 3

<sup>a</sup> The EPDS and PHQ-2/9 have been used in previous HealthySteps research or innovation projects.

# Maternal Depression Outcomes: Relationship Between Mental Health Service Receipt and Maternal Mental Health

## Research questions

- Is the receipt of mental health referral and services associated with reduced symptoms of maternal depression?
- Is the type of mental health service received associated with reduced symptoms of maternal depression?

## Methods

- Longitudinal study using administrative data

## Potential actions

- Conduct maternal depression screening using EPDS or PHQ-9 at multiple time points (before/after referral, assessment, service initiation)
- Document and track referrals made, service type, and service receipt

## Intensity

Medium intensity



## Potential measures

Screening tools:<sup>a</sup>

- Edinburgh Postnatal Depression Scale (EPDS) scores at several time points
- Patient Health Questionnaire-2/9 (PHQ-2/9) scores at several time points

## Target population

Mothers in Tier 3

<sup>a</sup> The EPDS and PHQ-2/9 have been used in previous HealthySteps research or innovation projects.

# Maternal Depression Outcomes: Relationship Between Community Services Receipt and Maternal Mental Health

## Research question

- Among mothers who screen positive for depression, are completed referrals for other services or needs (e.g., substance abuse, interpersonal violence, food assistance, housing assistance) associated with reduced symptoms of maternal depression?

## Methods

- Longitudinal study using administrative data or payer claims data (e.g., Medicaid, private insurance) for health-related services

## Potential actions

- Conduct maternal depression screening using EPDS or PHQ-2/9 at multiple time points (before/after referral, assessment, service initiation)
- Document and track referrals made, service type, and service receipt or access claims data

## Intensity

Medium intensity



## Potential measures

Screening tools:<sup>a</sup>

- Edinburgh Postnatal Depression Scale (EPDS)
- Patient Health Questionnaire-2/9 (PHQ-2/9)

Receipt of referral

Referral outcomes

## Target population

Mothers in Tier 3

<sup>a</sup> The EPDS and PHQ-2/9 have been used in previous HealthySteps research or innovation projects.

# Maternal Depression Outcomes: Impact of HealthySteps on Maternal Mental Health Service Receipt

## Research questions

- Compared with receipt of pediatric primary care as usual, does participation in HealthySteps increase the likelihood that mothers referred to services for maternal depression receive them?
- Does the likelihood of receipt of services differ by race, ethnicity, or insurance status? If so, why?

## Methods

- Quasi-experimental (e.g., matched comparison group) study using administrative data or payer claims data (e.g., Medicaid, private insurance)

## Potential actions

- Consider data available for comparison families<sup>a</sup>
- Document and track referrals made and service receipt
- Recruit an external evaluator to plan and implement the study
- Consider a root cause analysis to understand why there are differences (if applicable)

### Intensity

High intensity



### Potential measures

Referral outcomes

### Target population

Mothers in Tier 3

<sup>a</sup> For example, a matched comparison study is an option only if other non-HealthySteps sites in your health system collect the same measures as does your HealthySteps sites. A multiple baseline/staggered start design is an option if you are expanding to new sites.

# Maternal Depression Outcomes: Impact of HealthySteps on Depressive Symptoms

## Research question

- Compared with receipt of pediatric primary care as usual, does participation in HealthySteps services result in lower rates of depressive symptoms for mothers of children ages 0-3?

## Methods

- Quasi-experimental (e.g., matched comparison group) study using administrative data

## Potential actions

- Consider data available for comparison families<sup>a</sup>
- Conduct maternal depression screening using EPDS or PHQ-2/9 at multiple time points (infant ages 0-6 months, 18 months, 3 years)
- Recruit an external evaluator to plan and implement the study

## Intensity

High intensity



## Potential measures

Screening tools:<sup>b</sup>

- Edinburgh Postnatal Depression Scale (EPDS) scores at several time points
- Patient Health Questionnaire-2/9 (PHQ-2/9) scores at several time points

## Target population

Mothers in Tier 3

<sup>a</sup> For example, a matched comparison study is an option only if other non-HealthySteps sites in your health system collect the same measures as does your HealthySteps sites. A multiple baseline/staggered start design is an option if you are expanding to new sites.

<sup>b</sup> The EPDS and PHQ-2/9 have been used in previous HealthySteps research or innovation projects.

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