SMILE Data Report

Supporting Maternal mental health through Initiatives, Learning, and Engagement

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VNPC
Virginia Neonatal
Perinatal Collaborative

SMILE AIM: Screen 100% of individuals who present to deliver and identify, refer, and/or treat those who need treatment.

Introduction

This report outlines the significant strides made in addressing perinatal mental health conditions (PMHC) in Virginia. PMHC rates have seen a rise since 2019 with disparities demonstrated among different racial and payor groups. Through the SMILE project, VNPC has implemented the AIM patient safety bundle for Perinatal Mental Health Conditions. Key achievements thus far include a high referral rate for treatment and extensive provider education, emphasizing the importance of early identification, and intervention to improve maternal health outcomes. The report also details plans to expand and sustain these efforts, ensuring long-term success in mitigating the impact of PMHC.

5 "R"s of Alliance for Innovation on Maternal Health (AIM) Patient Safety Bundle

Readiness: Develop integrated workflows, provide trauma-informed training, and establish referral resources to enhance mental health care while addressing biases and social determinants of health.

Recognition & Prevention: Consistently screen for perinatal mental health conditions and social determinants of health, linking patients to appropriate resources as needed.

Response: Implement a culturally relevant, evidence-based response protocol and establish coordinated care pathways for mental health treatment during the perinatal period.

Reporting & Systems Learning: Integrate mental health into multidisciplinary rounds, foster collaboration between providers, and monitor data to address disparities.

Respectful, Equitable, and Supportive Care: Include pregnant and postpartum individuals and their support networks as active care team members.

Glossary of Data Terms

Outcome Measures: Indicators used to assess the effectiveness of health care interventions.

Process Measures: Indicators that track the implementation of specific actions or practices.

Structure Measures: Track the availability of resources, infrastructure, and organizational systems.

**State Surveillance Measures:** Indicators to track population-level data.

Severe Maternal Morbidity: Unexpected, life-threatening complications during delivery.

Perinatal Mental Health Conditions: Conditions that occur during pregnancy and effect a parent's emotional, psychological and social well-being.

Collaborative: Partnership of stakeholders working toward a common goal.

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Prevalence of perinatal mental health has increased in Virginia.
Prevalence rate shown per 1,000 hospital deliveries, 2019-2023.
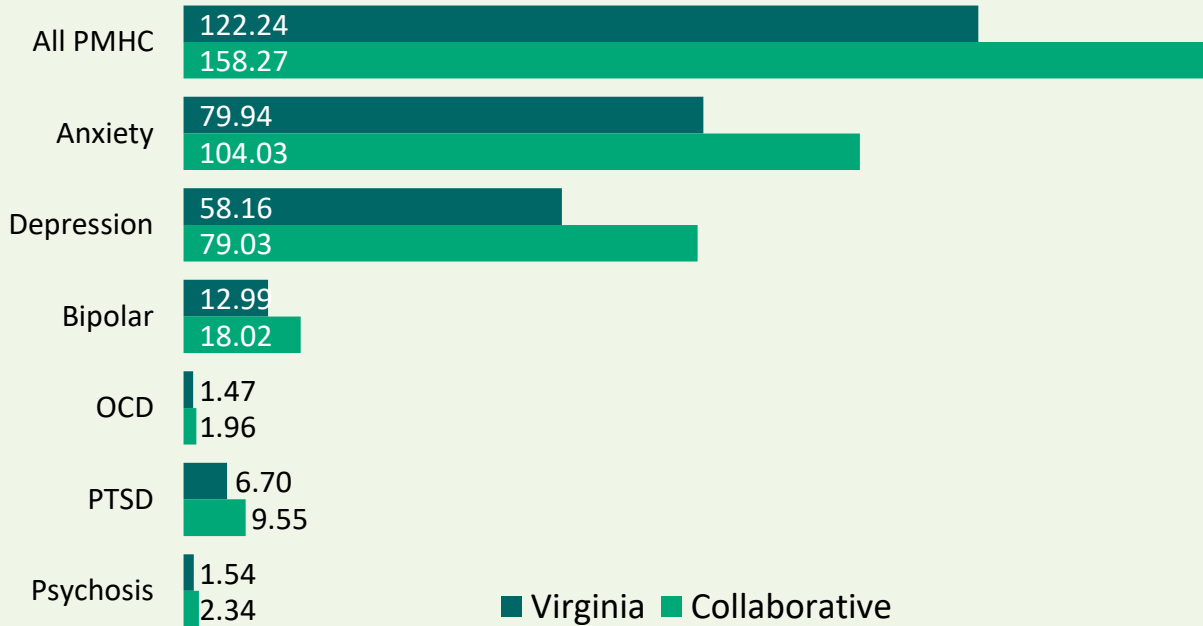

Legend: **Virginia** — **Collaborative**
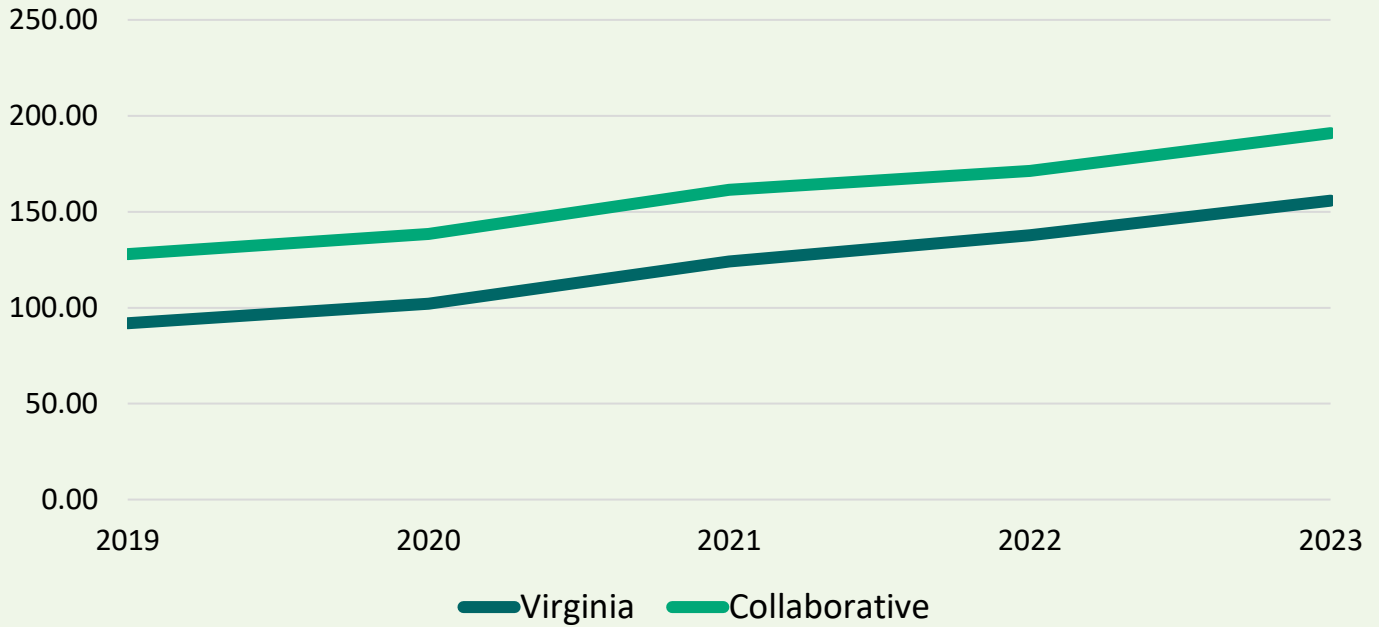
In Virginia, the incidence of PMHC has risen by 69.27% since 2019, from 91.99 to 155.71 per 1,000 deliveries. Similarly, collaborative hospitals have seen an increase of 49.34% in PMHC rates, from 127.90 to 191.01 per 1,000 deliveries. When disaggregating the data by race and payor categories, distinct trends emerge. Unlike many other maternal health outcomes, PMHC rates are higher among White deliveries and Commercial payors compared to other groups. Despite these disparities, the rising rates of PMHC across all demographic groups underscore the need for comprehensive efforts to improve outcomes for the entire population.
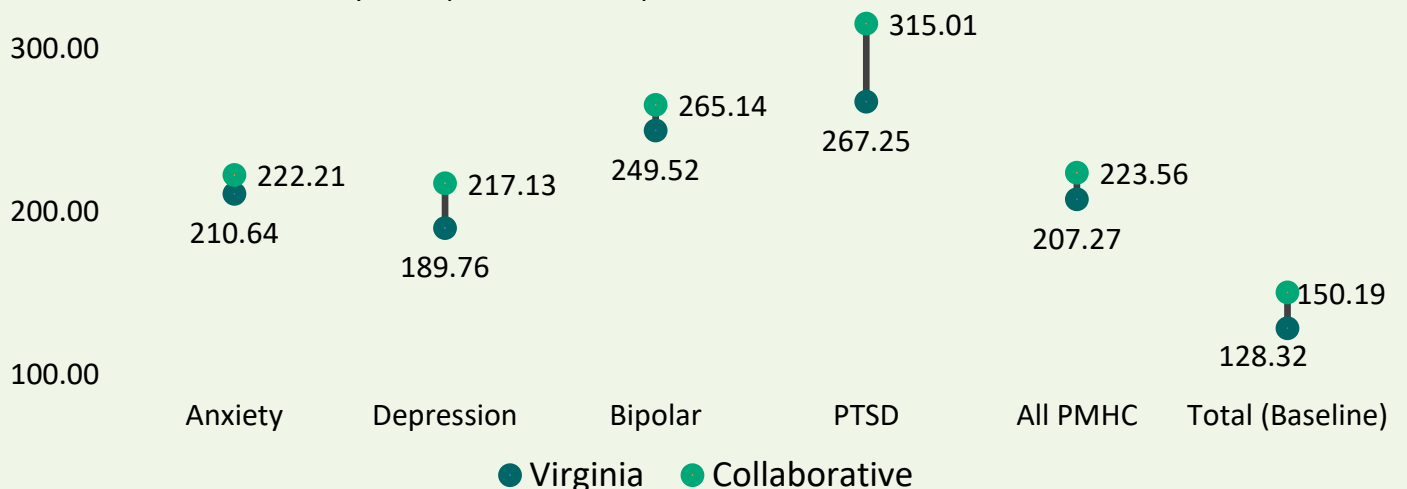

Overall | White | Black | Other Race

Commercial | Medicaid | Other Payer
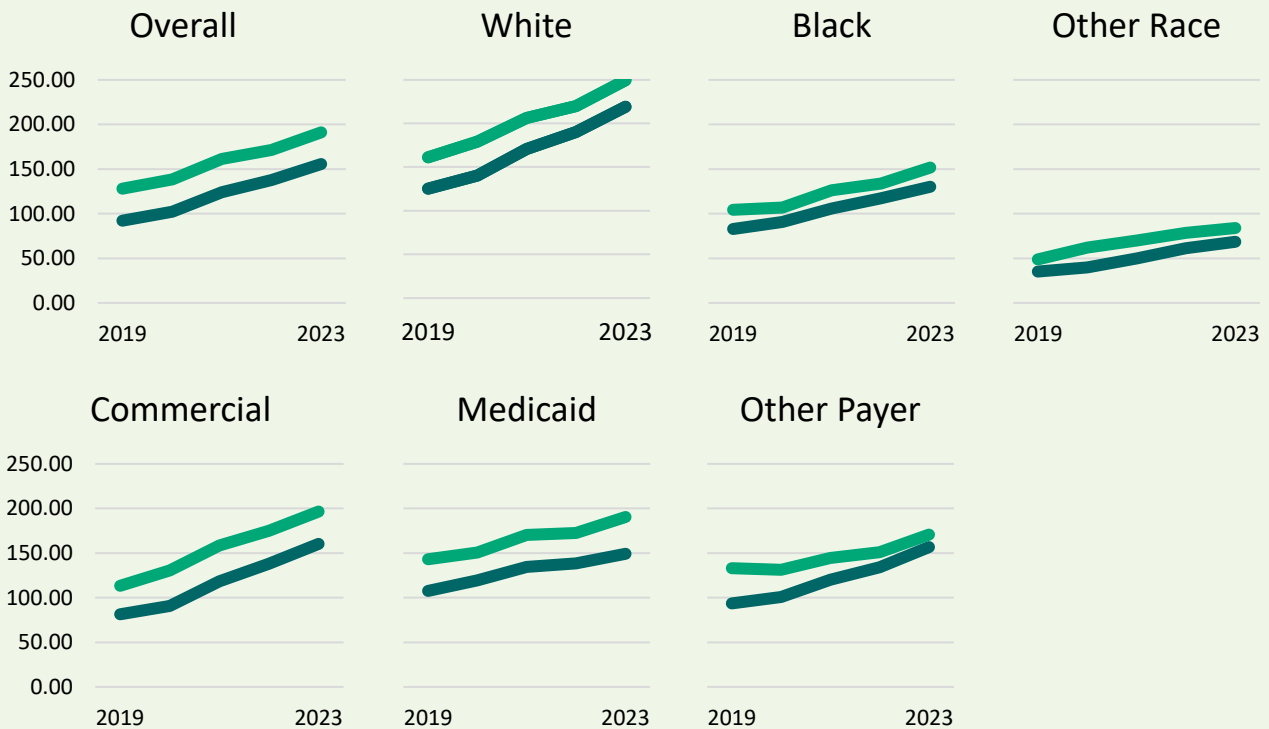
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PMHC most commonly from anxiety and depression disorders.
Prevalence rates shown per 1,000 hospital deliveries, 2019-2023.

Category	Virginia	Collaborative
All PMHC	122.24	158.27
Anxiety	79.94	104.03
Depression	58.16	79.03
Bipolar	12.99	18.02
OCD	1.47	1.96
PTSD	6.70	9.55
Psychosis	1.54	2.34

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AIM defines PMHC as the identification of one or more mental health conditions during a perinatal healthcare visit including anxiety, depression, bipolar disorder, OCD, PTSD, or psychosis. Analyzing the prevalence rates for each condition reveals that anxiety and depression are more common than other diagnoses. Consistent with the overall trends, collaborative hospitals show higher average rates of these conditions compared to statewide data. Notably, anxiety affects over 10% of deliveries at collaborative hospitals, while depression impacts nearly 8%.

The risks associated with these conditions are evident, as Severe Maternal Morbidity (SMM) occurs more frequently when PMHC are present. Within the collaborative, SMM is observed in 150.19 out of every 10,000 deliveries, with a 48.87% increase in frequency when PMHC is identified. This underscores the critical need for early identification and intervention to mitigate the impact of PMHC on maternal health outcomes.

SMM occurs more frequently in patients with PMHC.
Severe Maternal Morbidity rates per 10,000 hospital deliveries, 2019-2023.

Category	Virginia	Collaborative
Anxiety	210.64	222.21
Depression	189.76	217.13
Bipolar	249.52	265.14
PTSD	267.25	315.01
All PMHC	207.27	223.56
Total (Baseline)	128.32	150.19

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With the analysis highlighting perinatal mental health conditions as an increasing problem in Virginia, the Virginia Neonatal Perinatal Collaborative launched project SMILE (Supporting Maternal mental health through Initiatives, Learning, and Engagement) in the spring of 2024. Project SMILE is a quality improvement collaborative project focused on the implementation of the AIM PMHC bundle. In the first cohort, cohort Bravo, 19 hospitals are actively engaged and submitting monthly data to the VNPC. Data collection began in May 2024 for baseline measures at the beginning of this project. Baseline averages for the collaborative are shown in the following tables for structure, outcome, and process measures. These measures are posted online for the collaborative hospitals to monitor their own progress and identify areas for further improvement.

5 structure measures are collected, seen below, where facilities rate their progress on a scale of 1 (not started) to 5 (fully in place). Though not the primary AIM for the collaborative, facilities are working to reach 5 for each structure measure. Baseline data are showing PMHC S1 for the development of perinatal mental health assessment and response protocol is the best performing structure measure in the baseline period with an average score of 4.24.

Structure Measures (May 2024 – July 2024)	Collaborative Average
All S4: Patient Education Materials on Urgent Postpartum Warning Signs	3.64
ALL S6: Inpatient-Outpatient Care Coordination Workgroup	3.67
ALL S7: Resource Mapping/ Identification of Community Resources	3.71
PMHC S1: Perinatal Mental Health Assessment and Response Protocol	4.24
PMHC S2: Validated PMHC Screening Tools Shared with Prenatal Care Sites	3.86
Outcome Measure	**Collaborative Average**
PMHC O1: Percent of Pregnant and Postpartum People with PMHC Who Received or Were Referred to Treatment	84.00%

The primary outcome measure for SMILE is the percentage of pregnant and postpartum individuals with PMHC who receive or are referred for treatment. This aligns with the project's aim statement: "screen 100% of individuals who present to deliver and identify, refer, and/or treat those who need treatment." By ensuring that all patients presenting with PMHC at the time of delivery are treated or referred for treatment, the goal is to provide timely and appropriate care to more individuals. During the baseline period the data indicate 84% of patients with PMHC are being referred for appropriate care. However, it is important to note that not all facilities were able to report data during this period, primarily due to challenges in extracting information from electronic health record systems. Overcoming these data extraction challenges is essential, as accurate tracking of this metric is key to ensuring that timely interventions are provided. By focusing on this measure, we can promote better outcomes and reduce the long-term impact of PMHC on maternal health into the postpartum period and beyond.

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The baseline analysis of the process measures highlights the significant efforts already underway to address PMHC in Virginia. Over half of collaborative providers and nurses have received education on respectful and equitable care in the past two years, and nearly half have also been trained specifically on PMHC. Process Measure PMHC P2 indicates that nearly all patients are receiving education on PMHC; however, this measure is still not widely reported due to the need for updates in electronic health record systems to better capture these patient interactions. Optional process measures, PMHC OP3 and OP4, focus on prenatal and postpartum PMHC screenings, revealing that patients are currently more likely to be screened in the postpartum period. This indicates that further changes are necessary to enhance prenatal screenings. Continued efforts to educate healthcare providers and improve data reporting are vital to advancing PMHC care and ensuring comprehensive care.

Process Measures	Collaborative Average
ALL P1: Provider and Nursing Education on Respectful and Equitable Care	59.15%
PMHC P1: Provider and Nursing Education on Perinatal Mental Health Conditions	45.98%
PMHC P2: Percent of Patients Educated on Perinatal Mental Health Conditions	96.89%
PMHC OP3a: Percent of Prenatal Patients Screened for Depression	40.07%
PMHC OP3b: Percent of Prenatal Patients Screened for Anxiety	35.73%
PMHC OP4a: Percent of Postpartum Patients Screened for Depression	97.79%
PMHC OP4b: Percent of Postpartum Patients Screened for Anxiety	59.53%

The VNPC is facilitating Project SMILE through monthly technical analysis meetings and office hours. These efforts are crucial in assisting facilities with data collection, dissemination, and implementing improvement processes using the Plan-Do-Study-Act (PDSA) cycles. Participating personnel can access facility-level data privately through the AIM dashboard, and the VNPC plans to release future data reports for each facility to support continuous improvement.

Currently, 19 facilities are part of the first cohort (Bravo). Beginning in November 2024, the VNPC will introduce a second cohort (Charlie) to expand the project's reach. In 2025, SMILE will shift its focus toward sustainability, with data collection and technical analysis transitioning to a less frequent schedule. These steps aim to ensure long-term success and integration of PMHC practices within participating facilities.

For more information see AIM PMHC Bundle Materials