ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

Impact Statements

Impact statements briefly describe the effects of an initiative on certain outcomes. For AIM, impact statements showcase the effects of state teams' AIM patient safety bundle implementation and targeted quality improvement activities on processes of care and patient health outcomes. This document contains impact statements developed by or on behalf of AIM state teams for each of AIM's core patient safety bundles: Obstetric Hemorrhage, Severe Hypertension in Pregnancy, Safe Reduction of Primary Cesarean Birth, and Obstetric Care for Women with Opioid Use Disorder.

Obstetric Hemorrhage

California

Obstetric hemorrhage accounts for nearly half of all instances of severe maternal morbidity (SMM) in the US. In California between January 2015 and December 2016, 99 of 251 birthing facilities participated in a California Maternal Quality Care Collaborative (CMQCC) initiative to implement the *AIM Obstetric Hemorrhage patient safety bundle*. Nearly 200,000 births were represented in this initiative. Between the baseline (2011-2014) and post-intervention (October 2015-December 2016) periods, the rate of SMM decreased among all groups of birthing patients with a hemorrhage: 13% among White patients, 17% among Hispanic patients, and 24% among Black patients. After excluding blood transfusions, the SMM rate decreased among Black birthing patients even further, by 38%.

Georgia

Between 2012 and 2015, obstetric hemorrhage was the third leading cause of pregnancy-related death in Georgia. In April 2018, the Georgia Perinatal Quality Collaborative (GaPQC) recruited 80% of the state's 83 birthing facilities to implement the *AIM Obstetric Hemorrhage patient safety bundle* in collaboration with many key stakeholders and maternal and child health partners. Between 2018 and 2019, the rate of severe maternal morbidity among birthing patients who experienced obstetric hemorrhage reflected an overall reduction of 38% (i.e., a decline from 8% to 5%), excluding those who only received blood transfusions. GaPQC continues to engage and support facilities in AIM patient safety bundle implementation by sharing resources on clinical best practices, facilitating maternal health learning series for clinical teams and providing other quality improvement support.

Louisiana

In Louisiana, hemorrhage was the leading cause of pregnancy-related death between 2011 and 2016., Black women were exponentially more likely to experience a pregnancy-related death than White women. In August 2016, the Louisiana Perinatal Quality Collaborative (LaPQC) launched the *Reducing Maternal Morbidity Initiative* (RMMI) in 42 of 52 birthing facilities. The RMMI addressed preventable maternal mortality and morbidity related to

hemorrhage, while focusing their work on reducing racial disparities. Through the LaPQC, participating facilities worked to implement the *AIM Obstetric Hemorrhage patient safety bundle* engaging in monthly collaborative calls, in-person Learning Sessions, and in-person site visits. At each stage of this work, the LaPQC sought to incorporate health equity throughout. Between 2016 and 2019, the severe maternal morbidity (SMM) rate among birthing persons with hemorrhage decreased 35% for non-Hispanic Black women and 40% for non-Hispanic White women, leading to an overall reduction of 39%. While reductions in SMM were seen among both non-Hispanic Black and non-Hispanic White women, the racial disparity did not decrease. The LaPQC continues to work on improving equity in care to address racial disparities in SMM.

Mississippi

In Mississippi, hemorrhage is the leading cause of severe maternal morbidity (SMM). A review of hospital practices revealed that only 15% of birthing facilities had established standardized emergency protocols for obstetric hemorrhage and less than 30% of birthing facilities had hemorrhage carts. In response, the Mississippi Perinatal Quality Collaborative (MSPQC) began implementing the *AIM Obstetric Hemorrhage patient safety bundle* in 2016, with 39 of the 42 birthing facilities in the state participating in the collaborative. With the support of AIM, the MSPQC team developed portable hemorrhage toolkits, assisted in hemorrhage cart development, and provided hands-on simulation training and emergency drills. As part of bundle implementation, the percentage of participating birthing facilities with a hemorrhage cart increased from 28% in 2016 to 95% in 2020. During the same time period, the percentage of birthing facilities with a unit policy and procedure for an obstetric hemorrhage emergency increased from 15% to 90%.

New Jersey

In response to increasing severe maternal morbidity (SMM) rates due to hemorrhage, the New Jersey Perinatal Safety Collaborative (NJPSC) recruited all 44 birthing facilities in the state to implement the *AIM Obstetric Hemorrhage patient safety bundle.* Between January 2018 and June 2020, the percentage of hospitals that had obstetric hemorrhage supplies readily available in a cart or mobile box increased from 63% to 88%. Additionally, the statewide SMM rate among birthing patients who experienced a hemorrhage, excluding those who only received blood transfusions, declined from 8% during the baseline period (2016-2017) to 7% in the intervention period (2018-2019), an overall reduction of 13%. NJPSC continues to assist facilities with quarterly reporting of data, on-demand learning opportunities and quality improvement support.

Oklahoma

Obstetric hemorrhage is a leading cause of pregnancy-related death, and death from hemorrhage has been shown to be largely preventable with appropriate care. In 2015, the Oklahoma Perinatal Quality Improvement Collaborative (OPQIC) launched its Every Mother Counts collaborative and implemented the *AIM Obstetric Hemorrhage patient safety bundle* in 34 of the state's 47 birthing facilities. By 2016, the percentage of participating facilities with a hemorrhage cart increased from 72% to 100%. Between 2015 and 2020, the percentage of birthing patients who received a formal risk assessment for hemorrhage increased from 66%

to 93%. OPQIC is continuing its Every Mother Counts collaborative, providing individualized support and collaborative learning opportunities to participating facilities.

West Virginia

In response to high rates of severe maternal morbidity (SMM) due to hemorrhage, in 2018, the West Virginia Perinatal Partnership began implementation of the *AIM Obstetric Hemorrhage patient safety bundle* in 22 of the State's 23 birthing facilities. Between January 2018 and June 2020, the percentage of participating facilities who reported having a hemorrhage cart increased from 76% to 95%. Additionally, the statewide rate of SMM among birthing patients who experienced obstetric hemorrhage, excluding those who only received blood transfusions, decreased from 7% during the baseline period (2016-2017) to 6% in 2018, a reduction of 14%. The West Virginia Perinatal Partnership continues to work with participating facilities to fully implement the patient safety bundle checklist and has expanded obstetric hemorrhage education to rural emergency departments in facilities without labor and delivery units.

Severe Hypertension in Pregnancy

Illinois

In response to rising rates of severe pregnancy complications associated with hypertension, the Illinois Perinatal Quality Collaborative (ILPQC) began the Severe Maternal Hypertension Initiative based on the *AIM Severe Hypertension in Pregnancy patient safety bundle*. Between January 2016 and December 2017, ILPQC engaged clinical teams and public health leaders from 108 of 120 birthing facilities that were operational as of January 2016. The goal was to improve care for pregnant and postpartum patients with hypertensive conditions. During the time period, the percentage of patients with sustained, new-onset severe hypertension who received treatment within 60 minutes of an elevated reading increased from 41% to 89%, and the statewide rate of severe maternal morbidity among patients with hypertension at delivery decreased by 40%. Since completing this initiative, ILPQC continues to assist birthing facilities with sustainability planning, monthly review and reporting of data, quarterly webinars, and quality improvement support.

Louisiana

In Louisiana, hypertension was a leading cause, or underlying cause, of death in pregnancy-related deaths, between 2011 and 2016. During this same time period, racial disparities were noted, with Black women more likely than White women to experience a pregnancy-related death. In response to these findings, the LaPQC implemented the *AIM Severe Hypertension in Pregnancy patient safety bundle* in 42 of its 52 birthing facilities, engaging in monthly collaborative calls, in-person learning sessions, and in-person site visits. At each stage of this work, the LaPQC sought to incorporate health equity throughout bundle implementation. Between 2016 and 2019, the severe maternal morbidity rate among birthing persons with hypertension decreased by 8% among non-Hispanic Black women and 45% among non-Hispanic White women, leading to an overall reduction of 23%. The LaPQC continues to work on improving equity in care to close the increasing Black-White disparity gap in SMM.

Michigan

In Michigan, complications from sepsis, hemorrhage and hypertension are the leading causes of maternal mortality and severe maternal morbidity (SMM). Between November 2015 and September 2020, more than 60% of birthing facilities in the state participated in Michigan's Alliance for Innovation on Maternal Health (MI AIM) collaborative to reduce SMM due to hypertension, which included receiving technical assistance, site visits, education and data support to implement the *AIM Severe Hypertension in Pregnancy patient safety bundle*. Between the baseline period (2011-2015) and the post-intervention period (2016-2018), the statewide SMM rate among patients with hypertensive disorders declined from 12% to 10%, an overall reduction of 17%.

Safe Reduction of Primary Cesarean Birth

Colorado

In Colorado, the Nulliparous, Term, Singleton, Vertex (NTSV) cesarean birth rate is below the national average, but it is above the national Healthy People 2020 target in many birthing facilities. In response, the Colorado Perinatal Care Quality Collaborative recruited five specific birthing facilities with high NTSV cesarean birth rates to implement the *AIM Safe Reduction of Primary Cesarean Birth patient safety bundle*. Comparing quarterly NTSV cesarean birth rates from April – June 2018 to April – June 2020, the quarterly NTSV cesarean birth rate among participating facilities declined from 25.3% to 22.9%, representing an 11% decrease. The NTSV cesarean birth rate for participating hospitals is now lower than the national Healthy People 2020 target of 23.6%.

Florida

Florida has the second highest cesarean birth rate in the nation. To address this, the Florida Perinatal Quality Collaborative (FPQC) began the PROVIDE initiative in January 2018 to promote safe vaginal births and reduce unnecessary cesarean births. Participating facilities worked to implement the *AIM Safe Reduction of Primary Cesarean Birth patient safety bundle* and received monthly education, labor support workshops, data reports, and technical assistance. Between January 2018 and June 2019, 46 birthing facilities participated in the initial phase of this initiative to address the Nulliparous, Term, Singleton, Vertex (NTSV) cesarean births. The participating facilities experienced a rate decreased of 8%, while rates for non-participating facilities did not change during this period. In January 2020, FPQC expanded its initiative and commenced PROVIDE 2.0 to include 76 of the 113 birthing hospitals, which accounts for 80% of births in the state.

California

Many states, including California, have low-risk cesarean birth rates well above the national Healthy People 2020 target of 23.6%. In California between July 2016 and June 2018, 91 birthing facilities with high cesarean birth rates participated in a California Maternal Quality Care Collaborative (CMQCC) initiative to implement the *AIM Safe Reduction of Primary Cesarean Birth patient safety bundle*. During the same time period, all 251 birthing facilities in California participated in at least one cesarean reduction initiative. The statewide rate of low-risk cesarean births declined from 26.0% in June 2016 to 22.7% by the end of 2019, an overall reduction of 14%. Analyses of the reductions have attributed this change to both statewide efforts and participation in the collaborative.

Maryland

In response to Maryland's rising overall cesarean birth rate, the Perinatal/Neonatal Quality Collaborative (PNQC) initiated a two-year collaborative to reduce the Nulliparous, Term, Singleton, Vertex (NTSV) cesarean birth rate. Beginning in 2016, Maryland's PNQC recruited 31 of its 32 birthing facilities to participate in the collaborative and implement elements of the *AIM Safe Reduction of Primary Cesarean Birth patient safety bundle.* Between 2016 and 2018, the NTSV cesarean birth rate decreased by 5.3% from 30.1% to 28.5%. Maryland's PNQC continued to monitor the effects of its collaborative once it ended in 2018. By the end of 2019 the NTSV cesarean birth rate had further declined to 27.8%, demonstrating a total reduction of 7.6% from the 2016 baseline period.

Obstetric Care for Women with Opioid Use Disorder

Illinois

In Illinois, opioid overdose is the leading cause of pregnancy-associated deaths. In response, the Illinois Perinatal Quality Collaborative (ILPQC) initiated the Mothers and Newborns affected by Opioids (MNO)-Obstetric Initiative based on the *AIM Obstetric Care for Women with Opioid Use Disorder patient safety bundle*. Between October 2017 and June 2020, the percentage of birthing patients, on a labor and delivery unit, who received a validated screening for opioid use disorder (OUD) increased from 3% to 85%, based on a representative sample of birthing patients in the 43 targeted birthing facilities. During the same time period, the percentage of birthing patients with OUD who were connected to medication-assisted treatment by the time of delivery discharge increased from 41% to 67%. Those who were linked to recovery treatment services increased from 48% to 71%. ILPQC continues to assist facilities with sustainability planning, monthly review and reporting of data, quarterly webinars, and quality improvement support.

New York

In New York, the rate of opioid overdose deaths for women aged 18-44 tripled between 2010 and 2016. In response, the New York State Perinatal Quality Collaborative (NYSPQC) piloted its New York State Opioid Use Disorder (NYS OUD) in Pregnancy & NAS Project among 17 birthing facilities. This initiative is based on the *AIM Obstetric Care for Women with Opioid Use Disorder patient safety bundle.* Between January 2019 and June 2020, the percentage of participating facilities that implemented a universal screening protocol for OUD increased from 21% to 64%. The percentage of women with OUD who received medication-assisted treatment (MAT) or behavioral health treatment during pregnancy increased from 72% to 81%. NYSPQC continues to assist the NYS OUD in Pregnancy & NAS Project with increased birthing facility enrollment, webinars, podcasts and quality improvement support.

Tennessee

The prevalence of opioid use disorder among birthing patients in Tennessee is among the highest in the United States. To address this issue, in 2019, the Tennessee Initiative for Perinatal Quality Care (TIPQC) launched the Tennessee AIM project with 15 birthing facilities implementing the *AIM Obstetric Care for Women with Opioid Use Disorder patient safety bundle*. Between 2019 and September 2020, the percentage of birthing patients with opioid use disorder (OUD) who received medication-assisted treatment (MAT) at discharge increased from 45% to 72% in the participating facilities. Additionally, by September 2020, 46% of participating facilities had implemented a universal screening protocol for OUD, and 23% had implemented post-delivery and discharge pain management prescribing practices to safely limit opioid prescriptions. At baseline, there were no facilities implementing the prescribing practices. TIPQC continues to work with participating facilities to establish evidence-based best practices and monitor processes and outcomes via toolkits, podcasts and individualized support.