



Impact Statements

Impact statements briefly describe the effects of an initiative on certain structures, processes, or outcomes. For AIM, impact statements showcase the effects of state and jurisdiction teams' AIM patient safety bundle implementation and targeted quality improvement activities on processes of care, patient health outcomes, and other measures of patient safety.

This document contains impact statements developed by or on behalf of AIM state teams for four 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 Disorder](#). AIM patient safety bundles are clinical condition- or event-specific collections of best practices that are intended to be used as tools to improve quality of care and patient outcomes.

AIM patient safety bundles are frequently implemented by hospital teams as part of state- or jurisdiction-based collaboratives, which are often facilitated by perinatal quality collaboratives. By using collaborative models to implement patient safety bundles, hospital teams can learn from peers and experts while testing changes and making improvements to make a cumulative impact on population health.

Obstetric Hemorrhage

Georgia

Between 2012 and 2015, obstetric hemorrhage was the third leading cause of pregnancy-related death in Georgia, with Black pregnant and postpartum people dying at double the frequency of White pregnant and postpartum people experiencing a hemorrhage. In April 2018, the Georgia Perinatal Quality Collaborative (GaPQC) recruited 43 of its 75 birthing hospitals to implement the AIM Obstetric Hemorrhage Patient Safety Bundle. Between April 2018 and September 2021, the proportion of hospitals that have OB hemorrhage carts readily available increased from 49.0% to 96.1%. The proportion of patients who had their blood loss measured from birth through the recovery period using quantitative and cumulative techniques also increased from 33.3% to 85.0%. The obstetric hemorrhage initiative moved to sustainability in September 2021 and the GaPQC continues to support those facilities by sharing resources on clinical best practices and providing other quality improvement support.

Louisiana

In 2018, hemorrhage accounted for one-third of all pregnancy-related deaths in Louisiana, and Black people were 3 times more likely to experience a pregnancy-related death compared to White people. In response, the Louisiana Perinatal Quality Collaborative (LaPQC) was established to address the state's leading causes of morbidity and mortality, and in August 2018 LaPQC began implementation of AIM's Obstetric Hemorrhage patient safety bundle, eventually recruiting 43 of the state's 49 birthing facilities. Between August 2018 and January 2022, the percentage of facilities with standard processes to measure patients' blood loss using quantitative and cumulative techniques from birth through the recovery period increased from 28.6% to 93.4%. During the same time, the percentage of facilities who established a standardized process to complete a hemorrhage risk assessment at the time of admission for birth increased from 85.2% to 100%. The LaPQC continues to work with participating AIM facilities to refine readiness and response structures through the provision of support focused on drills, staff education and competencies, and debriefs.

Indiana

The Indiana Department of Health (IDOH) joined the Alliance for Innovation on Maternal Health (AIM) in 2019 and collaborated with the state's Maternal Mortality Review Committee (MMRC), the Indiana Hospital Association (IHA), and the Indiana Perinatal Quality Improvement Collaborative (IPQIC) to implement the AIM Obstetric Hemorrhage patient safety bundle. As of February 2022, Indiana has engaged 80 of the state's 84 birthing facilities in implementation of the Obstetric Hemorrhage patient safety bundle. To support participating birthing facilities in quality improvement work, IDOH designed a

Maternal Hemorrhage Toolkit and facilitated webinars and in-person trainings. Between December 2019 and December 2020, the percentage of participating facilities with a hemorrhage cart increased from 93.8% to 96.3%. Additionally, during the same time, the percentage of obstetric physicians and midwives who received education on obstetric hemorrhage increased from 66.1.4% to 74.1% and the percentage of obstetric nurses who received education increased from 88.1% to 92.2%. IDOH continues to support bundle implementation at participating facilities and works to continuously recruit new facilities to engage in quality improvement work.

Michigan

In Michigan, hemorrhage is among the three leading causes of pregnancy-related death. Between November 2016 to December 2020, 56 of the state's 80 birthing facilities participated in implementation of AIM's Obstetric Hemorrhage patient safety bundle with Michigan AIM. As part of this collaborative, participating facilities received technical assistance, site visits, education, and data support. From 2011-2015 to 2016-2020, the statewide severe maternal morbidity (SMM) rate among birthing patients who experienced a hemorrhage, excluding those who only received blood transfusions, declined from 11% to 5%, an overall reduction of 55%. MI AIM continues to assist participating facilities in quality improvement efforts addressing drivers of severe maternal morbidity and mortality with the goal of engaging all birthing facilities in the state in their collaborative.

Mississippi

In Mississippi, hemorrhage requiring blood transfusions is the leading cause of severe maternal morbidity (SMM). In response, the Mississippi Perinatal Quality Collaborative (MSPQC) began implementation of AIM's Obstetric Hemorrhage patient safety bundle in August 2016 and recruited 39 of the state's 41 birthing facilities to participate. To support implementation, MSPQC developed portable hemorrhage toolkits, assisted in hemorrhage cart development, and provided clinical team training on quantified blood loss. Between Q4 2016 and Q4 2020, the percentage of participating birthing facilities with a hemorrhage cart increased from 32% to 98%. During the same time, the percentage of patients whose blood loss from birth through the recovery period was measured using quantitative and cumulative techniques increased from 12% to 72%. The MSPQC will continue to provide technical assistance, training, and guidance to facilities to fully implement the Obstetric Hemorrhage patient safety bundle.

Washington

In Washington, hemorrhage is one of the leading causes of pregnancy-related death. In response, the Washington State Hospital Association (WSHA) began implementation of AIM's Obstetric Hemorrhage patient safety bundle with 48 of the state's 57 birthing facilities. Between Q1 2019 and Q2 2021, the percentage of obstetric physicians and

midwives receiving obstetric hemorrhage education increased from 39.8% to 57.4%, and the percentage of obstetric nurses receiving obstetric hemorrhage education increased from 74.2% to 80.9%. Hemorrhage risk assessment also increased from 57.6% to 89.6% during this time. Adapting to the evolving nature of the COVID-19 pandemic, WSHA plans to continue its partnership with birthing facilities to support implementation of elements outlined in the AIM Obstetric Hemorrhage patient safety bundle, focusing on timely data collection to identify progress and areas needing focused attention. Participating birthing facilities will be supported with on-site and virtual meetings incorporating educational webinars, sharing of best practices, assistance with hemorrhage simulation, and focus on site specific metrics.

Severe Hypertension in Pregnancy

Alaska

Hypertensive disorders in pregnancy are increasing in Alaska, and hypertensive disorders contributed to one third of the pregnancy-related deaths in Alaska between 2012 and 2016. Based on these data and feedback from key stakeholders, the Alaska Perinatal Quality Collaborative (AKPQC) launched its first initiative focused on hypertensive disorders in pregnancy in March 2019. This initiative engaged six hospitals, representing 63% of Alaska births, in implementation of the AIM Severe Hypertension in Pregnancy patient safety bundle. As a result of this initiative and efforts of participating hospitals, the AKPQC exceeded its primary goal and observed a reduction in the statewide percent of severe maternal morbidity (SMM) among people with preeclampsia, excluding blood transfusions alone, from 7.7% in 2018 to 4.1% in 2020, the lowest percentage in the most recent five years. During this period, statewide SMM among people with preeclampsia, excluding blood transfusions alone, decreased from 10.8% to 3.9% for Non-Hispanic White people and from 5.5% to 3.4% for American Indian and Alaska Native people. Additionally, between Q3 2019 and Q4 2020, the percentage of pregnant people with persistent severe hypertension who received treatment within 60 minutes of episode onset at participating birthing facilities increased from 58.0% to 70.8%. The AKPQC continued to support participating hospitals with sustainability planning and data reporting through September 2021. The AKPQC is working to support hospitals in addressing the strain of the COVID-19 pandemic on healthcare systems and overall population health, as well as direct clinical impacts on pregnant patients, in an ongoing manner.

Georgia

Between 2012 and 2015, preeclampsia was the fifth leading cause of pregnancy-related deaths in Georgia, and Black people died from preeclampsia at a frequency 10 times greater than their White counterparts. In response, in June 2019 the Georgia Perinatal Quality Collaborative (GaPQC) recruited 34 of the state's 75 birthing facilities to implement

AIM's Severe Hypertension in Pregnancy patient safety bundle. Between July 2019 and March 2022, the proportion of obstetric physicians and midwives at participating facilities who completed an education program on severe hypertension increased from 34.6% to 70.9%. From July 2019 to July 2021, the proportion of participating facilities that had established unit policies and procedures to respond to hypertensive emergencies increased from 32.7% to 81.6%. GaPQC continues to engage 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.

Indiana

The Indiana Department of Health (IDOH) joined the Alliance for Innovation on Maternal Health (AIM) in 2019 and collaborated with the state's Maternal Mortality Review Committee, the Indiana Hospital Association and the Indiana Perinatal Quality Improvement Collaborative to implement AIM's Severe Hypertension in Pregnancy patient safety bundle. As of February 2022, Indiana has engaged 77 of the state's 84 birthing facilities in implementation of the Severe Hypertension in Pregnancy patient safety bundle. To support participating birthing facilities in quality improvement work, IDOH designed a Maternal Hypertension Toolkit and facilitated webinars and trainings. Between Q1 2021 and Q4 2021, the percentage of participating facilities with unit policies and procedures to respond to hypertensive emergencies increased from 74.4% to 91.0%. During the same period, the percentage of obstetric physicians and midwives who received education on severe hypertension and preeclampsia increased from 55.7% to 69.2% and the percentage of obstetric nurses who received education on severe hypertension and preeclampsia increased from 79.7% to 90.6%. IDOH continues to support bundle implementation at participating facilities and works to continuously recruit new facilities to engage in quality improvement work.

Louisiana

In 2018, cardiovascular concerns and conditions related to hypertension accounted for one-fourth of pregnancy-related deaths in Louisiana, and Black people were three times more likely to experience a pregnancy-related death compared to White people. In response, the Louisiana Perinatal Quality Collaborative (LaPQC) was established to address the state's leading causes of morbidity and mortality, and in August 2018 LaPQC began implementation of AIM's Severe Hypertension in Pregnancy patient safety bundle, eventually recruiting 43 of the state's 49 birthing facilities. Between August 2018 and January 2022, the percentage of participating birthing facilities that had established unit policies and procedures to respond to hypertensive emergencies increased from 21% to 100%. The LaPQC continues to work with facilities to refine and improve identification of and response to severe hypertension, including assuring appropriate integration of treatment algorithms into emergency department settings.

Maryland

In Maryland, hypertensive disorders of pregnancy are the third leading cause of severe maternal morbidity and account for over 8% of pregnancy-related deaths. In January 2021, the Maryland Perinatal-Neonatal Quality Collaborative (MDPQC) began implementing AIM's Severe Hypertension in Pregnancy patient safety bundle in all 32 of the state's birthing hospitals. Since implementation, the percentage of clinicians receiving education on severe hypertension and preeclampsia increased from 61% to 77% in obstetric physicians and midwives and 79% to 85% in obstetric nurses from Q1 2021 to Q4 2021. Treatment of persistent severe hypertension within 60 minutes of episode onset increased from 41% to 54% during this same period. The MDPQC continues to work with birthing hospitals to fully implement the AIM Severe Hypertension in Pregnancy patient safety bundle with an additional focus on improving the rates of severe maternal morbidity (SMM) among patients with preeclampsia and reducing racial and ethnic disparities within SMM.

Mississippi

Between 2013 and 2015, complications related to hypertension and cardiovascular disease were the leading causes of pregnancy-related death in Mississippi. In response, the Mississippi Perinatal Quality Collaborative (MSPQC) began implementation of AIM's Severe Hypertension in Pregnancy patient safety bundle in October 2019 and recruited 37 of the state's 41 birthing facilities to participate. Between Q4 2019 and Q1 2022, the percentage of obstetric physicians and midwives who received education on severe hypertension and preeclampsia increased from 48% to 89%, and the percentage of obstetric nurses who received similar education increased from 62% to 93%. During the same time, the percentage of participating birthing facilities that had established unit policies and procedures to respond to hypertensive emergencies increased from 24% to 88%. The MSPQC continues to work with participating facilities on patient safety bundle implementation through quarterly leadership calls and other educational opportunities.

Missouri

In 2017, preeclampsia/eclampsia was the most common cause of death during pregnancy and up to 42 days postpartum in Missouri. Missouri AIM began implementation of AIM's Severe Hypertension in Pregnancy patient safety bundle in 36 of the state's 62 birthing facilities in November 2019. Among the 29 birthing facilities who reported data, treatment of persistent severe hypertension within 60 minutes of episode onset increased from a median of 62% at baseline (November 2019 through January 2020) to a median of 87% post-intervention (July 2020 through December 2021). During the same period, the percentage of participating facilities who established processes for scheduling postpartum follow-up appointments for people with diagnoses of hypertension, preeclampsia, or eclampsia increased from 0% to 31%. Missouri AIM continues to support birthing facilities

whose implementation of the Severe Hypertension in Pregnancy patient safety bundle was halted or stalled during the COVID-19 pandemic and provides technical assistance to address health disparities related to hypertension in pregnancy and postpartum.

New Jersey

Between 2014 and 2016, hypertensive disorders of pregnancy were among the leading causes of severe maternal morbidity and mortality in New Jersey. In January 2017, the New Jersey Perinatal Quality Collaborative (NJPQC) began implementing AIM's Severe Hypertension in Pregnancy patient safety bundle in 36 of the state's 48 birthing facilities. Between Q1 2018 and Q1 2019, treatment of persistent severe hypertension within 60 minutes of episode onset increased from 53.4% to 64.3% among the participating birthing facilities. During the same time, the percentage of participating facilities who reported having established unit policies and procedures to respond to hypertensive emergencies increased from 51.0% to 63.3%. The New Jersey Perinatal Quality Collaborative continues to work with its birthing facilities to fully implement the AIM Severe Hypertension in Pregnancy patient safety bundle through expanded education opportunities and other technical assistance opportunities.

Tennessee

Between 2017 and 2020, hypertensive disorders contributed to half of all pregnancy-related deaths due to cardiovascular disease, which is the leading cause of maternal mortality in Tennessee. In response, the Tennessee Initiative for Perinatal Care (TIPQC) recruited 15 of the state's 59 birthing facilities to implement AIM's Severe Hypertension in Pregnancy patient safety bundle. Five birthing facilities began a pilot project in November 2020, and 10 additional facilities began participating in March 2021. Between Q3 2020 and Q4 2021, the percentage of patients with persistent severe hypertension who were treated within 60 minutes of episode onset at the five pilot facilities increased from 43% to 67%, a 56% increase. Between Q1 2021 and Q4 2021, the percentage of patients with persistent severe hypertension who were treated within 60 minutes of episode onset at the 10 additional participating facilities increased from 32% to 57%, a 78% increase. The TIPQC continues to support participating facilities by hosting huddles focused on project sustainability as well as data check-ins to further improve timely treatment of persistent severe hypertension.

West Virginia

In 2017, West Virginia's rate of severe maternal morbidity (SMM) among people with preeclampsia, excluding blood transfusions alone, was 7.6%. In response, the West Virginia Perinatal Partnership recruited all 21 birthing facilities in the state to implement AIM's Severe Hypertension in Pregnancy patient safety bundle in Q2 of 2020. To support implementation, the West Virginia Perinatal Partnership provided patient education

materials to birthing facilities and implemented a home blood pressure monitoring program to encourage early recognition of severe hypertension during pregnancy and postpartum. Between Q4 2020 and Q1 2022, the percentage of facilities that had established unit policies and procedures to respond to hypertensive emergencies increased from 23.8% to 71.4%. Additionally, the statewide rate of SMM among people with preeclampsia decreased from 7.6% in 2017 to 5.4% in 2021, a reduction of 28.9%. The West Virginia Perinatal Partnership continues to support facilities in the state by providing education to rural Emergency Departments and facilitating opportunities for collaborative learning.

Safe Reduction of Primary Cesarean Birth

Florida

In 2017, Florida's nulliparous, term, singleton, vertex (NTSV) cesarean birth rate was the highest in the nation at 31%. In 2018, the Florida Perinatal Quality Collaborative (FPQC) began implementing AIM's Safe Reduction of Primary Cesarean Birth patient safety bundle in 46 of the state's 113 birthing facilities receiving monthly education, labor support workshops, data reports, and technical assistance. Between January 2018 and June 2019, the NTSV cesarean birth rate decreased from 31% to 29% among participating facilities, while the rate among non-participating facilities did not change. In 2020, FPQC expanded implementation to include 76 birthing facilities representing 80% of births in the state. From Q1 of 2017 to Q3 of 2020, Florida's statewide NTSV cesarean birth rate decreased from 31% to 29%, a reduction of 6%. Participating facilities will continue to track and benchmark their NTSV cesarean birth rates with support from FPQC.

Iowa

Due to Iowa's nulliparous, term, singleton, vertex (NTSV) cesarean birth rate exceeding the Healthy People 2030 target rate of 23.6%, the Iowa Maternal Quality Care Collaborative (IMQCC) began implementation of AIM's Safe Reduction of Primary Cesarean Birth patient safety bundle in 43 of the state's 56 birthing facilities. Since the start of implementation in May 2021, participating facilities have received monthly education on evidence-based practices, quality improvement, and family-centered care. Provisional data show a 16% reduction in the statewide rate of NTSV cesarean births from 25.0% in Q1 2021 to 21.1% in Q1 2022. During the same time, non-participating facilities experienced an increased rate of low-risk (NTSV) cesarean births. IMQCC continues to sponsor labor support workshops, provide one-on-one and small group coaching, and support birthing facilities in collecting and interpreting institutional data to advance AIM patient safety bundle implementation work.

Louisiana

Louisiana's nulliparous, term, singleton, vertex (NTSV) cesarean birth rate was 33.2% in Q3 of 2020, and some individual facilities had NTSV cesarean birth rates exceeding 50% during that time. In January 2021, the Louisiana Perinatal Quality Collaborative (LaPQC) began implementing AIM's Safe Reduction of Primary Cesarean Birth patient safety bundle in 42 of the state's 49 birthing facilities. The LaPQC completed the Labor Culture Survey with all participating facilities and is now working to implement and stabilize processes to make labor cultures more supportive of vaginal birth. Between January 2021 and January 2022, the NTSV cesarean birth rate declined from 30.3% to 27.5% among participating facilities. The LaPQC continues to host regular data reviews and QI planning sessions with the now 44 participating facilities and host clinical trainings to support the safe reduction of low-risk cesarean births.

Obstetric Care for Women with Opioid Use Disorder

Illinois

In 2016 and 2017, mental health conditions, including substance use disorder, were the leading causes of pregnancy-related deaths in the state. The Illinois Perinatal Quality Collaborative (ILPQC) launched the Mothers and Newborns affected by Opioids - Obstetric (MNO-OB) Initiative in May 2018 based on AIM's Obstetric Care for Women with Opioid Use Disorder (OUD) patient safety bundle with all 101 of the state's birthing facilities. Over the course of the initiative, the percentage of sampled pregnant patient records with documentation of a validated screening tool used on Labor & Delivery increased from 3% in Q4 of 2017 to 85% in Q4 of 2020. During the same period, the percentage of patients with OUD who were connected to medication for opioid use disorder by delivery discharge and linked to recovery treatment services increased from 41% to 76% and 48% to 70%, respectively, and the percentage of patients with OUD who received Narcan counseling increased from 2% to 63%. The MNO-OB sustainability phase began in January 2021, where participating facilities worked to track compliance and develop plans for missed quality improvement opportunities. ILPQC continues to support the implementation of strategies for continuing quality improvement, new hire education, and the maintenance of up-to-date maps of community resources.

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) implemented the New York State (NYS) Opioid Use Disorder (OUD) in Pregnancy & Neonatal Abstinence Syndrome (NAS) Project based on the AIM Obstetric Care for Women with OUD patient safety bundle. The project began as a pilot in September 2018 with 14 birthing facilities participating and submitting data. The project has since expanded to

include a total of 39 birthing facilities. The percentage of facilities that implemented a universal screening protocol for OUD increased from 21% in January 2019 to 73% in December 2021 among the 14 facilities participating in the pilot phase and from 33% in December 2020 to 86% in December 2021 among the 25 facilities participating in the expansion phase. The percentage of birthing people with OUD who received medication for opioid use disorder or behavioral health treatment during pregnancy increased from 72% to 93%, as reported by pilot phase facilities, and increased from 85% to 94%, as reported by expansion phase facilities. The NYSPQC continues to lead the NYS OUD in Pregnancy & NAS Project with webinars, educational opportunities, data collection and analysis, resource distribution, and clinical and quality improvement support.

California

Between July 2019 and September 2020, the California Maternal Quality Care Collaborative engaged 27 birthing facilities located in counties with high rates of neonatal abstinence syndrome to participate in its mother & Baby Substance Exposure Initiative (MBSEI) Collaborative based on AIM's Opioid Use Disorder (OUD) patient safety bundle. These facilities represented 14% of live births in the state. Participating facilities identified and implemented best practices in areas including screening, treatment, transitions in care, and education for OUD. Among the MBSEI Collaborative hospitals, the proportion of pregnant people with OUD who received medication for opioid use disorder or behavioral health treatment increased from 45% in January 2019 to 58% in December 2020, representing a 29% increase. During the same period, the proportion of opioid-exposed newborns ≥ 35 weeks' gestation who received any of their parent's milk at discharge increased from 56% to 65%, representing a 16% increase. Long-term outcomes for birth parents and infants will continue to be assessed through other programs.