

2021 Report to the General Assembly

Virginia Neonatal Perinatal Collaborative



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Executive Summary

The Virginia General Assembly enacted the 2022 Appropriation Act, which authorized \$124,470 from the general fund and \$82,980 from non-general funds for a fifth year, enabling the Virginia Department of Health (VDH) to establish a Memorandum of Understanding with Virginia Commonwealth University Children's Hospital, to administer a Perinatal Quality Collaborative (PQC). In 2019, the Virginia General Assembly appropriated an additional annual allocation of \$315,000 to address health disparities and inequities in maternal health across the Commonwealth. The Act mandated that the Perinatal Quality Collaborative shall work to improve pregnancy outcomes for women and newborns by advancing evidence-based clinical practices and processes through continuous quality improvement with an initial focus on pregnant women with substance use disorder and infants impacted by neonatal abstinence syndrome (Appendix A).

Since the establishment of the Virginia Neonatal Perinatal Collaborative (VNPC) in 2017, the statewide collaborative quickly attracted interest from hospital systems, health care professionals, professional organizations, state agencies, and community stakeholders and partners that have a mission to improve outcomes for mothers and babies across the Commonwealth. In FY21, the VNPC selected three initial quality improvement (QI) projects: (1) reduce the use of inpatient intravenous antibiotics at hospital nurseries/NICUs; (2) decrease the rate of severe maternal morbidity attributable to obstetric hemorrhage; and (3) care coordination from delivery to the post-partum visit and then transition to annual women's health, also known as the fourth trimester. The VNPC is committed to including each of the 52 birth hospitals across the Commonwealth in these quality improvement projects, which will be implemented throughout FY22.

The VNPC experienced a number of successes due to the commitment of community partners and stakeholders, healthcare professionals from various organizations, and state agencies coming together and working toward shared goals and visions, as well as continuous funding from the General Assembly to sustain ongoing efforts. Though not a legislative reporting requirement, this report summarizes VNPC current projects, ongoing efforts and fifth year accomplishments. Details regarding prior year activities, as well as the evolution of the VNPC, are outlined in previous VDH annual reports on the [General Assembly's Legislative Information System website](#).

Background

According to the Centers for Disease Control and Prevention (CDC), PQCs are state or multi-state networks of teams working to improve health outcomes for mothers and babies. PQC members identify health care processes that need to be improved and use the best available methods to make changes as quickly as possible. As of this report, all 50 states have formed PQCs, which consist of physicians, nurses, public health and other invested professionals, lay people, and families. PQCs have been able to impact system changes to decrease preterm birth rates and decrease maternal morbidity and mortality (CDC, 2018).

In 2017, the Virginia Neonatal Practice Collaborative partnered with the Virginia Hospital and Healthcare Association (VHHA), March of Dimes (MOD), VDH, and a maternal fetal medicine provider at the University of Virginia (UVA) and adopted the new name of Virginia Neonatal Perinatal Collaborative (VNPC) to better encompass the mission and goals of the new partnership. The collaborative rapidly grew to include additional health care providers and professionals, state agencies, and community organizations that all worked on shared goals related to improving maternal and infant health. That same year, the General Assembly committed to the formal development of a statewide collaborative by appropriating funds to establish and administer a PQC. Virginia was recognized as the 42nd state PQC by the CDC in 2017. The VNPC also became an Alliance for Innovation on Maternal Health (AIM) state this same year. As an AIM state, Virginia is able to work collectively with over 40+ states across the nation to implement AIM Patient Safety Bundles to improve maternal health.

Currently, the only authority that exists for the PQC is in the state budget. The 2018 Appropriation Act appropriated \$124,470 from the general fund and \$82,980 from non-general funds the second year for VDH to establish and administer a PQC. The Act mandated that the PQC shall work to improve pregnancy outcomes for women and newborns by advancing evidence-based clinical practices and processes through continuous quality improvement, with an initial focus on pregnant women with substance use disorder (SUD) and infants impacted by neonatal abstinence syndrome (NAS). An additional \$315,000 from the general fund was appropriated in the 2019 General Assembly session to support efforts by the VNPC to decrease maternal mortality and morbidity. Funding was to be used for a coordinator position for community engagement, training and education; the development of a pilot program of the Centers for Disease Control and Prevention's (CDC) levels of care assessment (LOCATe) tool in the Richmond metropolitan and Tidewater regions; and development of a Project ECHO model for education and training. Funding was also be used to assist the VNPC with expanding capacity to address these issues using software to advance data analytics.

The vision of the VNPC is to ensure that every mother has the best possible perinatal care, and that every infant cared for in Virginia has the best possible start to life. The mission of the VNPC is to ensure an evidence-based, data-driven collaborative process that involves care providers for women, infants and families, as well as state and local leaders. The VNPC believes that working together now will create a stronger, healthier Virginia in the future. The VNPC has established the following goals:

1. To provide assistance to hospitals and obstetric providers in performing quality improvement initiatives designed to improve pregnancy outcomes, including decreasing the preterm birth rate to Healthy People 2030 goals and decreasing maternal mortality by 50%;
2. To enhance the quality of statewide perinatal data and provide hospital-specific data back to participating hospitals promptly to accomplish quality improvement goals;

3. To provide assistance to hospitals and newborn care providers in performing quality improvement initiatives related to neonatal outcomes, including decreasing morbidity and mortality, as well as decreasing length of stay;
4. To inform and involve the community, including health care providers, nurses, ancillary medical staff, payers, hospital administrators, and, most importantly, patients in efforts to make Virginia the safest state to deliver babies; and
5. To narrow racial and ethnic disparities by achieving health equity in pregnancy and neonatal outcomes.

Infrastructure

The VNPC has developed a formalized organizational structure, which is comprised of a steering committee, executive committee, maternal quality care alliance (MQCA), birth equity network (BEN), stakeholder advisory panel and three project workgroups (Appendix B).

The steering committee consists of the VNPC executive director, an obstetric co-chair, a pediatric co-chair, and a representative from each of these organizations: VDH, VHHA, Virginia Hospital and Healthcare Foundation (VHHF), and an advanced practitioner who represents the National Association of Neonatal Nurse Practitioners (NANNP). The steering committee meets weekly to ensure projects and committees are moving forward; discuss new business, challenges and/or barriers; and maintain ongoing operations for the VNPC.

The executive committee includes a representative that has been appointed by the steering committee from the following organizations or groups involved in the care of pregnant women and infants:

- American Academy of Family Physicians (AAFP)
- American College of Obstetricians and Gynecologist (ACOG);
- American Academy of Pediatricians (AAP);
- American College of Nurse Midwives (ACNM);
- Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN);
- Virginia Midwives Alliance (VMA);
- Non-Profit Organization that represents paraprofessionals and the community voice;
- Office of Chief Medical Examiner (OCME);
- Office of the Secretary of Health and Human Resources (OSHHR);
- Individual with lived experience;
- International Board Certified Lactation Consultant (IBCLC);
- Quality Improvement Subject Matter Expert; and
- Title V representative from Virginia Department of Health

The executive committee holds monthly meetings via Zoom conference calls to review updates from each of the committees and workgroups, identify challenges to getting the work

accomplished, and discuss new business. Meeting minutes are maintained and disseminated to all members. These meetings remain essential to the executive committee for networking and to maintain momentum of the work. Due to the COVID-19 pandemic, the VNPC was unable to hold quarterly in-person meetings during SFY21.

Advisory Committees

As a result of the ongoing pandemic, the VNPC executive director has assumed the work of the data management committee for the VNPC. As a member of AIM, Virginia has access to a dashboard to input structure, process, and outcome measures by hospital. This dashboard also contains maternal mortality and morbidity data from 2015-2019 for Virginia. The VNPC has continued entering quarterly structure and process data along with annual outcome data. This dashboard allows hospitals to make comparisons on shared measures across the Commonwealth. All hospital measures are viewed by the VNPC executive director and the co-chairs of each AIM project. Hospitals can view other de-identified hospitals grouped by level, number of births, and/or region. The VNPC is undergoing a strategic planning process and the future of this team and structure is being analyzed to identify the best path forward for data entry, dissemination and ability to inform future projects, based on the needs and gaps across the Commonwealth.

The VNPC, in partnership with VHHA, established a maternal health dashboard. The dashboard was developed in Tableau and contains data from the all-payer claims database (APCD), hospital discharge data, and vital records. The dashboard allows users to run queries with real-time data (updated quarterly) related to patient population by zip code. The information and data assessed from the dashboard will allow health care systems to understand gaps and challenges, areas of opportunity and how to tailor projects to improve maternal health outcomes. The VNPC has purchased a license for every birth hospital that would like access to the data. VHHA provides IT support regarding data access, along with quarterly technical assistance calls.

The community engagement committee has undergone changes in FY21, The committee's name changed to the Maternal Quality Care Alliance (MQCA) to better reflect the work and vision of the committee. The MQCA held a meeting in late July 2021, and in August 2021, committee members participated in the VNPC strategic planning process to understand the needs of grassroots organizations and non-profit partners within communities across the Commonwealth. The MQCA will engage hospitals and healthcare providers to participate in community-based projects; gather data to establish a better understanding of common clinical challenges; and determine best-practice models for engaging communities and families to work with health systems and providers to collectively improve maternal and infant health outcomes. The composition of the MQCA is being constructed, and the strategic planning process will inform its development, as well as the vision and goals of this committee. The COVID-19 pandemic has delayed this work, but the goal is to have a completed roster, vision and goals by the end of calendar year 2021. Once these tasks are complete, the MQCA committee will begin to establish a Birth Equity Network (BEN) to address the inequities experienced by women of color throughout the prenatal and postpartum pregnancy periods. The BEN will also have an established roster, vision, goals and work plan by the end of FY22.

The advocacy and sustainability committee is no longer intact. The VNPC executive director is responsible for sustainability activities and continues to actively seek out grants, funding opportunities and other streams to ensure the sustainability of the work underway. Advocacy activities remain geared toward educating members of the General Assembly before and during session each year.

Project Workgroups

Neonatal Abstinence Syndrome (NAS) and Maternal Opioid Use Disorder (OUD)

Neonatal abstinence syndrome (also called NAS) is a group of conditions caused when a baby withdraws from certain drugs that the baby is exposed to in the womb before birth. NAS is most often caused when a woman takes opioid drugs during pregnancy. The combined ongoing opioid crisis and corresponding increase in cases of NAS is a prime example of how pregnancy and neonatal conditions can be addressed collectively by the VNPC.

The VNPC launched the Vermont Oxford Network's (VON) NAS Universal Training Program in early 2018 to standardize care and improve outcomes for infants and families affected by substance use. Activities completed through the partnership with VON include statewide training webinars and a VON NAS quality improvement project, as well as lessons learned, have been outlined in prior annual reports.

Numerous changes have occurred since the VNPC was established in 2017 to include shifts in terminology, data collection, approach to treatment and connection to resources. The workgroups for the NAS and maternal OUD projects have been merged into one and are collectively working with the VNPC executive director, the Alliance for Innovation in Maternal Health (AIM) and other states to better understand what is currently happening on a national level in response to these changes and to identify opportunities for improvement in the Commonwealth. This project will now encompass a dyad approach to care and will include a pediatrician instead of a neonatologist and redefine definitions to reflect national trends.

In June 2021, the VNPC offered a medical waiver training with a focus on maternal health through the American Society of Addiction Management (ASAM). The training included four hours of virtual presentation and four hours of self-paced learning, and it was provided at no cost to 28 healthcare providers. In early FY22, an additional ASAM waiver course with a focus on women's health will be offered at no cost to any healthcare provider who works with patients and/or families impacted by substance use disorder.

Antibiotic Stewardship

Antibiotic stewardship across all disciplines of medicine has become a focal point for the CDC, with wide variation in antibiotics usage reported in newborn intensive care units (NICUs). Neonatal medicine certainly has benefitted from the use of antibiotics in treating infectious processes. However, it is now realized that the overuse of antibiotics can lead to development of resistant strains of organisms, along with additional effects of antibiotic courses that make these

vulnerable infants at risk for other complications of prematurity, including necrotizing enterocolitis, a devastating disease that affects the intestines of premature infants.

Several single NICUs and a few state perinatal collaboratives have made antibiotic stewardship a quality improvement initiative aimed at reducing the use of inappropriate antibiotic courses. By utilizing evidence-based guidelines, these NICUs are able to implement changes in practice that will lead to a reduction in overall antibiotic exposure while also continuing to address and treat neonatal infections in a safe manner.

The VNPC executive director and co-chairs of the antibiotic stewardship project will launch the project on November 30, 2021 via a webinar. The webinar will provide information on the project, how to enroll, data collection and allow time for questions and answers. Data collection will be conducted in January 2022, and monthly webinars will be held with a scheduled topics available to all participants. The project will run for 15-18 months.

Obstetric Hemorrhage

The Alliance for Innovation in Maternal Health (AIM) is a national, data-driven maternal safety and quality improvement initiative based on proven implementation approaches to improving maternal safety and outcomes in the U.S. AIM works through state quality improvement teams and health systems to align national, state, and hospital level quality improvement efforts to improve overall maternal health outcomes. AIM is funded through a cooperative agreement with the Maternal and Child Health Bureau (MCHB) of the Health Resource Services Administration (HRSA). Virginia is one of eighteen AIM member states nationwide. Virginia was formally recognized as an AIM state in October 2017. The first AIM patient safety bundle that the VNPC began instituting was *Obstetric Hemorrhage*.

Obstetric hemorrhage has been defined as the loss of more than 1000 mL of blood in the first 24 hours after delivery. Obstetric hemorrhage is a major cause of maternal morbidity worldwide and is one of the top three causes of maternal mortality in both high and low per capita income countries. Obstetric hemorrhage is the cause of approximately 11% of maternal deaths in the U.S. However, with timely diagnosis, appropriate resources, and appropriate management, obstetric hemorrhage may be the most preventable cause of maternal mortality. The Joint Commission has defined the transfusion of four or more units of blood in the first 24 hours after delivery as a sentinel event, drawing additional attention to the preventable nature of at least some episodes of obstetric hemorrhage. (Baker, 2018)

Recognizing the critical need to address the problem of obstetric hemorrhage, AIM produced an *Obstetric Hemorrhage* patient safety bundle that provides resources to streamline and standardize the approach to obstetric hemorrhage (Appendix D). The AIM obstetric hemorrhage patient safety bundle provides guidance to hospital systems related to their readiness, recognition and prevention, response and reporting/systems learning related to obstetric hemorrhage. By adopting best clinical practices, hospitals may be able to decrease maternal morbidity and mortality related to obstetric hemorrhage. Through the standardization

of health care processes and reduced variations, the bundle has been shown to improve outcomes and quality of care. (AIM, 2017)

The first data collection for the obstetric hemorrhage project was conducted in June 2020, and 34 participating hospitals uploaded their results to the Virginia AIM dashboard for all hospitals to view and compare results to de-identified hospitals of similar size, location, and/or other filter criteria. Data was then collected quarterly and uploaded to the AIM dashboard. Final data collection occurred in March 2021, and 21 participating hospitals submitted data at the completion of the project. Of those 21 hospitals, 94.5% have implemented and continue conducting a hemorrhage risk assessment; 77.4% have a process in place to measure blood loss and are conducting on average seven unit drills per quarter.

Fourth Trimester

The VNPC will be rolling out the fourth trimester AIM patient safety bundle in November 2021, making Virginia the first state in the AIM program to roll this project out. The VNPC is recruiting 8-10 hospitals (1-2 by region) to participate in the first round of the project. The focus of the project will be on care coordination, connection to resources within the community, and adherence to ACOG's fourth trimester guidance (Committee Opinion #736, May 2018). The fourth trimester patient safety project involves a paradigm shift that will result in the following:

- changing the main postpartum visit from six weeks to three weeks post-partum;
- increased perinatal mental health screenings and referrals;
- increased discussions between patient and provider about reproductive health;
- increased discussions about and access to breastfeeding education, tools and resources for better informed decision making; and
- increased dialog about other maternal health conditions that are exposed in pregnancy.

The aim of the project is to cover the pregnancy periods from prenatal, delivery, and post-partum with a transition to the well-women exam. Monthly data collection will begin in November 2021. The first round of the project is estimated to occur over a period of 12-15 months.

VNPC Operations

Staff

The VNPC executive director is employed by Virginia Commonwealth University and continues to provide daily oversight of the VNPC. In June 2021, the VNPC secured a paid summer intern supported through the University of Richmond. The intern was instrumental in developing a communications plan for the VNPC, creating a social media presence on three platforms. The internship provided the intern with the opportunity to learn about approaches to improve maternal and infant health outcomes through community partnership development,

providing support for hospital systems, and enhancing state and local partnerships with organizations working collectively to improve maternal and infant health outcomes across the Commonwealth.

Communications

The VNPC website was updated in August 2021, and the new address is: www.vnpc.chrichmond.org. The VNPC is developing a communications plan to ensure a social media presence and frequent communication about upcoming webinars, summits and projects. The VNPC will maintain a social media presence on Facebook, YouTube, Instagram and Twitter. The communications plan will establish policy related to content, branding and consistency when corresponding to inquiries. The plan will be finalized in FY22.

The VNPC Fifth Annual Summit is scheduled for October 25-26, 2021. Due to the COVID-19 pandemic, the Summit will be held virtually. The Summit will be recorded and available to view on demand via the VNPC YouTube Channel. Continuing education units will also be available. The topic for the Summit is centered on fostering community relationships to improve maternal and infant health outcomes.

Strategic Plan

In June 2021, the VNPC began a strategic planning process. The process includes the following four phases and will take an estimated 12-14 months to complete.

1. Phase One: Definition of Problem and Areas of Desired Impact
 - a. Activity: Facilitation of group conversations
 - b. Output: Theory of Change emerging framework
2. Phase Two: Data Gathering
 - a. Activities: Co-design stakeholder and family involvement information gathering; environmental scan and analysis
 - b. Output: Preliminary findings report
3. Phase Three: Approval of Joint Agreement and Plan Framework
 - a. Activity: Facilitated retreats
 - b. Output: Strategic Plan
4. Phase Four: Implementation and Organizational Structure
 - a. Activity: Facilitation of group and leadership conversations
 - b. Output: Implementation plan and organizational chart matched to the strategic plan

Upon completion of the strategic planning process, the VNPC will have an updated vision and goals that align with the Governor's Maternal Health Strategic Plan initiatives, Title V performance metrics for maternal and infant health, the Maternal Mortality Review Team report recommendations, and AIM measures. VNPC's infrastructure is also being restructured to

ensure that diversity, equity and inclusion are visible across all workgroups, committees and projects aimed at improving maternal and infant health outcomes across the Commonwealth.

Partnerships

The VNPC continues to maintain partnerships with key stakeholder entities. A representative from the Office of the Chief Medical Examiner (OCME), the VNPC executive director, and the VDH Title V Maternal Child Health Director attended the virtual annual Maternal Mortality Review Information (MMRIA) User Meeting, which was sponsored by CDC. The VNPC held the third Maternal, Perinatal and Infant Mortality Summit via virtual format on March 1, 2021. There were over 425 healthcare providers, stakeholders and paraprofessionals in attendance virtually on March 1, 2021. The work of the VNPC has been made possible through maintaining key partnerships and with the support and appropriation provided through the General Assembly. (Appendix B, FY22 budget).

Conclusion

Based on the accomplishments of the VNPC to date, it is evident that support is present throughout Virginia and there is momentum to achieve even more in the coming years. The creation of multidisciplinary partnerships across government agencies, healthcare providers, hospital systems, communities and families have been instrumental to the VNPC's success. As these partnerships continue to grow, data collection is improved across systems, and evidence-based clinical practices and processes are implemented, the VNPC will contribute to improving the health of mothers, infants, and families in the Commonwealth.

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Appendix A – Budget Bill – HB1700

2019 Session

Budget Bill-HB1700 (Chapter 854)

Bill Order » Office of Health and Human Resources » Item 291

F.1. Out of this appropriation, \$124,470 the first year and \$124,470 the second year from the general fund and \$82,980 the first year and \$82,980 the second year from nongeneral funds shall be provided for the Virginia Department of Health to establish and administer a Perinatal Quality Collaborative. The Perinatal Quality Collaborative shall work to improve pregnancy outcomes for women and newborns by advancing evidence-based clinical practices and processes through continuous quality improvement with an initial focus on pregnant women with substance use disorder and infants impacted by neonatal abstinence syndrome.

2. Out of this appropriation, \$315,000 the second year from the general fund shall be provided to support efforts by the Virginia Neonatal Perinatal Collaborative (VNPC) to decrease maternal mortality and morbidity. Funding shall be used for a coordinator position for community engagement, training and education; the development of a pilot program of the Centers for Disease Control's levels of care assessment (LOCATe) tool in the Richmond metropolitan region and Tidewater region; and development of a Project ECHO tele-education model for education and training. Funding shall also be used to assist the VNPC with expanding capacity to address these issues through the use of software to advance data analytics

