



Published in final edited form as:

Obstet Gynecol Clin North Am. 2026 March ; 53(1): 23–36. doi:10.1016/j.ogc.2025.09.003.

Perinatal Quality Collaboratives and Patient Safety Bundles:

Key Contributors to Improving Maternal Health Care Quality across the United States

Jacqueline Wallace, MD, MPH^{a,*}, Yousra A. Mohamoud, PhD^a, Allison S. Guarino, MPH^b, Angela Rohan, PhD^a

^aMaternal and Infant Health Branch, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 4770 Buford Highway NE, Atlanta, GA 30341, USA;

^bDepartment of Non-infectious Disease, CDC Foundation, 600 Peachtree Street NW, #1000, Atlanta, GA 30308, USA

Keywords

Quality improvement; Maternal morbidity; Maternal mortality; Perinatal quality collaboratives; Patient safety bundles

INTRODUCTION

Maternal health outcomes are important measures of the health of a nation.¹ In the United States, these outcomes, including morbidity and mortality, are often negative, with significant differences by demographic, geographic, economic and social factors.^{2,3} In 2023, the US pregnancy-related mortality ratio was 18.7 deaths per 100,000 live births, continuing a general upward trend since 1987.³ Severe maternal morbidity (SMM) is also high, with approximately 50,000 cases of SMM per year.¹ Differences in SMM rates also exist by race/ethnicity, age, geography, income, insurance, disability, and hospital type.^{1,4} Although factors contributing to maternal morbidity and mortality are complex, evidence from Maternal Mortality Review Committees (MMRCs) indicates that more than 80% of pregnancy-related deaths are preventable, and almost half of pregnancy-related deaths could be prevented with improvements in care quality at the provider, hospital, and system level.^{5–8} This makes the quality of health care provided to pregnant women an overarching concern and an important lever for improving outcomes.^{5–7} This commentary will provide a broad overview of the quality improvement (QI) activities of Perinatal Quality Collaboratives (PQCs) and their use of patient safety bundles (PSBs) to improve maternal health care quality, with the goal of improving maternal health outcomes.

*Corresponding author. tsz6@cdc.gov.

DISCLAIMER

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention (CDC).

DISCLOSURE

The authors have no conflicts of interest to disclose.

Factors Impacting Maternal Outcomes

The increasing prevalence of chronic health conditions in reproductive aged women is an important factor impacting maternal morbidity and mortality.⁹ Many chronic diseases, such as chronic hypertension and diabetes, can increase the risk of pregnancy complications.⁹ Between 2005 and 2014, identification of a chronic medical condition at the time of delivery hospitalization increased from 67 per 1000 delivery hospitalizations to 92 per 1000.⁹ Additionally, in the same time period, substance use disorder in pregnancy, which is linked to poor maternal and neonatal outcomes, increased substantially, particularly among low-income women (from 15.7 to 23.5 per 1000 delivery hospitalizations) and women living in rural locations (from 11.1 to 25.3 per 1000 delivery hospitalizations).⁹

In addition to the impact of increased chronic health conditions and substance use among reproductive aged women, outcomes are also impacted by large variations in obstetric practice,^{10–12} such as a 10 fold difference in rates of low-risk primary cesarean section in hospitals across the nation.^{13,14} While the volume and complexity of patients account for some of the variations in obstetric practice and outcomes across hospitals, a nationwide evaluation of maternal outcomes found that less than 50% of the variation between hospitals could be explained by patient, provider or hospital characteristics.¹⁵ The unexplained variation in hospital practices and outcomes indicates other drivers of maternal outcomes may exist, such as variable provider and unit practice patterns.^{11,13} This suggests the need for dissemination and implementation of evidence-informed practices and standardized care to improve maternal health care quality and outcomes.^{12,13} PQCs are uniquely positioned to support states, hospitals, and their partners in improving the quality of maternal health care.

PERINATAL QUALITY COLLABORATIVES

PQCs are state or multistate multidisciplinary teams of nurses, midwives, physicians, QI experts, public health practitioners, patients, and families working to improve the quality of care for mothers and infants.¹⁶ PQCs support hospitals in implementing QI activities that increase adoption of evidence-informed practices and help to standardize care.¹⁷ Currently, there are maternal and/or infant QI activities occurring in every state in the United States, and a PQC in all 50 states, Washington, DC, and the Defense Health Agency.¹⁸ The Centers for Disease Control and Prevention (CDC) has provided funding and technical assistance to PQCs since 2011, growing from an initial cohort of 3 to 36 funded PQCs in 2025. The National Network of PQCs (NNPQC) was formed in 2016, with the support and partnership of March of Dimes, CDC, and perinatal QI experts.¹⁹ The NNPQC develops tools and trainings to increase the capacity of all PQCs and provides a national platform for PQCs to collaborate and share best practices, barriers, and successes. The NNPQC continues to receive CDC support and has been coordinated by the National Institute for Children's Health Quality since 2017.¹⁸

PQCs are uniquely positioned to implement QI activities based on state priorities, emerging maternal and infant health issues, recommendations of MMRCs, and changes in best practices identified by clinical membership organizations.¹⁷ Despite differing organizational characteristics, PQCs apply similar methods to identify priority issues and engage hospitals in QI activities. Fig. 1 provides a framework to understand the PQC approach to

PATIENT SAFETY BUNDLES

The concept of a PSB was first introduced by IHI in 2001 and is defined as “a small set of evidence-based interventions for a defined patient segment/population and care setting that, when implemented together, will result in significantly better outcomes than when implemented individually.”²⁹ PSBs organize recommended clinical practices into a readily implemented package, creating a roadmap that hospitals can follow to redesign care processes and improve care quality. PSBs are an effective approach to improving health care quality and outcomes.²⁹ Maternal PSBs originated in 2012 through the grassroots efforts of 22 obstetric care leaders who recognized the need to improve maternal outcomes in the United States.³⁰ This multidisciplinary effort grew through partnerships with professional and advocacy organizations. Subsequently, with the collaboration of clinical experts, the initial maternal PSBs were developed and published in 2014.³⁰ These efforts were formalized with the creation of the Alliance for Innovation on Maternal Health (AIM), which was founded and is fully funded by the Health Resources and Services Administration (HRSA).³¹

AIM bundles play an important role as population-specific PSBs and offer an evidence-informed, structured way to improve patient care and outcomes.³² AIM PSBs are commonly used by PQCs as the foundation of their QI activities. The AIM Technical Assistance Center, overseen by the American College of Obstetricians and Gynecologists through a cooperative agreement with HRSA, also provides PQCs with PSB support and PSB data collection tools.³³ There are currently 8 core PSBs released by AIM, each addressing a specific clinical condition. The AIM PSBs follow a consistent structure, with activities grouped into 5 categories (1) readiness, (2) recognition and prevention, (3) response, (4) reporting and systems learning, and (5) respectful, equitable and supportive care.³² Fig. 1 highlights the role of AIM PSBs within the PQC QI implementation approach.

PQCs provide vital infrastructure that brings hospitals across a state together to implement relevant AIM bundles and other PSBs to improve the quality of care. PQCs support collaboration between hospitals and communities, helping to create clinical-community linkages, which support improved care and outcomes.³⁴ Additionally, while the focus of this article is maternal QI activities, PQCs also work to improve neonatal care through QI activities in both neonatal intensive care units and well-baby nurseries. Due to the intersectionality of maternal and neonatal well-being and shared factors affecting the quality of their care,³⁵ PQCs are increasingly implementing QI activities to improve care for the maternal/neonatal dyad.¹⁸ In their role as conveners, collaborators and QI experts, PQCs are essential to maternal and infant health improvement efforts and have demonstrated success in improving management and outcomes of priority conditions.

PERINATAL QUALITY COLLABORATIVES' IMPACT ON OUTCOMES

Highlighted below are some recent examples of how PQCs have improved the quality of maternity care and positively impacted health outcomes using PSBs.

Obstetric Hemorrhage

Hemorrhage was the leading cause of pregnancy-related death in 2023,³ and many PQCs have leveraged the *AIM Obstetric Hemorrhage PSB* to improve the management of obstetric hemorrhage.³⁶ PQCs work to improve labor and delivery (L&D) unit structure by supporting deployment of hemorrhage carts, which provide ready access to medications and supplies in the event of an obstetric hemorrhage. PQCs also support improved care processes by providing education on hemorrhage risk assessment and measuring quantitative blood loss. The Perinatal-Neonatal Quality Improvement Network of Massachusetts (PNQIN) implemented an obstetric hemorrhage QI initiative from June through November 2021 in 21 of the state's 40 birthing facilities. At the end of the initiative, PNQIN noted the proportion of birthing women who had quantitative blood loss recorded increased from 60% to 80%, and statewide, SMM due to hemorrhage (excluding transfusions) decreased from 618 per 10,000 births to 566 per 10,000 births.³⁷ The West Virginia PQC (West Virginia Perinatal Partnership) implemented an obstetric hemorrhage QI initiative in 2018. At the completion of the initiative, 98% of hospitals had implemented a hemorrhage risk assessment process, 89% of hospitals used quantitative blood loss for blood loss measurement, and SMM due to hemorrhage (excluding transfusions) fell 20% (from 750 per 10,000 births to 600 per 10,000 births).³⁸

Severe Hypertension in Pregnancy

Severe hypertension in pregnancy is a leading cause of maternal morbidity and mortality, and early treatment has been shown to reduce SMM for pregnant women with severe hypertension.^{3,39} In 2016, the Illinois PQC (ILPQC) began a QI initiative to improve hypertension care across the state, leveraging the *AIM Severe Maternal Hypertension PSB*.⁴⁰ At the end of the initiative, ILPQC found that the percentage of maternal patients with severe hypertension who received timely treatment (treatment within 1 hour of diagnosis) increased from 56% to 87% across participating hospitals. These gains were seen across the state, and did not differ significantly based on hospital characteristics, suggesting that improvement in outcomes is possible in all hospitals, even those with low volumes or fewer resources.⁴¹

In Ohio, a coalition of partner organizations, including the Ohio PQC, implemented a QI initiative to improve the management of hypertension in pregnancy in October 2020, adapting the *AIM Severe Maternal Hypertension PSB*⁴⁰ for the Ohio context. The initiative employed typical PQC QI methods, such as monthly calls with all participating hospitals and individual QI coaching. Despite disruptions caused by the coronavirus disease 2019 (COVID-19) pandemic, results indicated an increase in timely treatment of severe hypertension from 56.5% to 67.4% after only 1 year. Participating hospitals spanned all levels of maternal care, and improvement in treatment was seen across all levels, again supporting that all hospitals, regardless of volume, resources or rurality, can improve maternal outcomes through QI activities.⁴²

Safe Reduction of Primary Cesarean Birth

The overall rate of cesarean sections has risen substantially in recent decades, increasing from 20.7% in 1996 to 32.1% in 2022.⁴³ While a cesarean section is often a lifesaving

procedure, it is also associated with an increased risk of maternal and neonatal morbidity and mortality compared to vaginal birth, and evidence indicates that some cesarean births may not be medically indicated.^{44,45} In addition, for those women who undergo a cesarean birth, more than 90% will have subsequent repeat cesarean births, which further increases the risk of morbidity and mortality.⁴⁴

The Maryland PQC implemented an initiative from 2016 to 2018 to reduce cesarean births, utilizing a format based on the IHI model and the *AIM Safe Reduction of Primary Cesarean Births PSB*.⁴⁶ At the end of the initiative, the rate of nulliparous, term, singleton, vertex (NTSV) cesarean births was reduced from 28.5% to 26.9% across participating hospitals. Notably, greater strength of implementation (measured by the number of practice changes implemented in each individual hospital) was associated with a greater reduction in cesarean births.²³

The Colorado PQC implemented the Supporting Vaginal Delivery for Low-Risk Mothers initiative in 2019, which aimed to reduce NTSV cesarean births through implementation of a labor dystocia checklist. The initiative included education, regular check-ins, collaborative learning both virtually and in-person, and submitting data to track progress.⁴⁷ One suburban, medium-volume facility, the site of a family medicine training program, noted that for every 10% increase in labor dystocia checklist completion, there was a 2.1% decrease in the NTSV cesarean rate. An unexpected benefit of the initiative was improved team communication, and the labor dystocia checklist proved to be a valuable teaching tool.⁴⁷

Substance Use Disorders

Mental health conditions are a leading underlying cause of pregnancy-related death in the United States, including deaths by suicide and overdose/poisoning related to substance use disorders (SUDs).⁴⁸ Between 2010 and 2017, the number of women with opioid-related diagnoses at delivery increased by 131% and Neonatal Abstinence Syndrome increased by 82%.⁴⁹ Although recommended, SUD screening is often not performed during perinatal health care visits, and when it is, providers may lack knowledge and/or skills to manage SUDs and refer patients to appropriate services.⁵⁰

The Illinois PQC used a learning collaborative approach and the *AIM PSB on Obstetric Care for Women with Opioid Use Disorder*⁵¹ to implement universal screening for opioid use disorder (OUD) among pregnant women and link those who screened positive for OUD to medication-assisted treatment (MAT), recovery treatment services, and naloxone counseling.⁵² Linkage to MAT during pregnancy or before delivery discharge increased from 41% to 78% and referral to recovery treatment services was associated with 51% lower odds of preterm birth.⁵² In addition, the initiative reported reduced differences in linkage to MAT between population subgroups.⁵² Of note, the current preferred clinical term for medication to treat OUD is medication for opioid use disorder (MOUD).⁴⁹

Through a national learning collaborative, 15 CDC-supported PQCs developed an action plan to address the rise in OUD among pregnant women, identifying the need for provider training to reduce care variation and gaps in comprehensive care and coordination with MOUD.⁵³ Supported by the NNPQC, 12 PQCs in the collaborative worked across

their states to increase the number of providers with waivers to prescribe or dispense buprenorphine to treat pregnant and postpartum women, including hosting waiver trainings and encouraging participation in national OUD treatment trainings.⁵³

DISCUSSION

PQCs are important statewide networks of teams working across multiple levels (health care systems, hospitals, and providers) to reduce variation in care, increase the adoption of evidence-informed practices, and improve the quality of care for all mothers and infants across the United States. PSBs are essential tools that provide a structured implementation approach to evidence-informed practices and health care quality improvement. PQCs have demonstrated success using PSBs in improving maternal and infant care and outcomes across a wide range of hospitals, including rural and urban, all levels of maternal care, and low- and high-volume hospitals.^{41,42} PQCs also demonstrated their resilience by continuing successful QI implementation during the COVID-19 pandemic.⁴²

There is a PQC in every state, Washington, DC, and the Defense Health Agency.¹⁸ As PQCs mature, they are beginning to expand their activities outside of the hospital, engaging outpatient clinical practices, community health centers, and women with lived experience.^{54,55} These growing networks of partners, along with key strategies like collaborative learning and rapid-cycle data processes, make PQCs well positioned to address emerging perinatal health issues. PQCs serve as conveners, able to leverage their networks to bring together a range of partners and act as force multipliers to improve maternal and infant health. Care coordination is an important means to improving outcomes,^{34,56,57} and increased attention is being given nationally to the creation of clinical-community partnerships; for example, new models of care that focus on whole-person care,⁵⁸ recent QI PSBs created for outpatient settings,^{32,59} and a new program that links community-based organizations and hospitals.⁶⁰ Like these national efforts, PQCs are also supporting the creation of strong clinical-community linkages through collaborations with a wide range of partners.

In addition to varied partners, the multidisciplinary nature of most PQC teams is also key to their success. Made up of nurses, midwives, physicians, QI experts, public health practitioners, patients and families, PQCs benefit from the knowledge, skills, and perspectives of these various groups. Support from hospital-level providers is also essential for PQCs' success. There are multiple ways providers can contribute to PQC efforts (Box 2), with the first step being to identify their state PQC on the NNPQC interactive map of PQCs.¹⁸ Second, providers can learn about ongoing statewide QI efforts by visiting their state PQC Web site and reviewing the data reports and resources available. Third, providers can actively engage with their state PQC. Attending PQC sponsored education events is one simple way to participate and often comes with the benefit of continuing education credit. Obstetric clinician champions are essential to successful QI implementation by encouraging the interest of their peers and supporting changes in the culture of the L&D unit.¹⁷ Difficulties in recruiting clinical champions is the most common barrier reported by hospital teams striving to implement QI activities.¹⁷ In addition to clinical champions, PQCs often rely on obstetric clinicians to fill leadership positions, helping to bridge the gap

among QI specialists, public health practitioners, and clinical boots on the ground.¹⁷ Finally, endorsing QI efforts to hospital leadership and educating providers in their networks are other important ways obstetric clinicians can support their state PQC.¹⁷

SUMMARY

PQCs are composed of implementation experts working to reduce variation in care and increase the adoption of evidence-informed practices through implementation of PSBs and other QI activities. PQCs serve as conveners, bringing broad partners together and moving data on maternal and infant health outcomes to action. By standardizing clinical care, streamlining workflows, and developing and measuring improved processes and protocols for care, PQCs are reducing errors and improving health outcomes.⁶¹ Many PQCs have demonstrated measurable improvements to maternal health outcomes through quality improvement initiatives.^{23,37,38,41,42,47,52,53}

The expansion of PQC activities to settings outside of the hospital may help address the complex social factors that impact maternal morbidity and mortality. For example, care coordination is an important strategy to improve outcomes.^{34,56,57} Many PQCs are working to improve care coordination, such as connecting pregnant and postpartum women to needed social services.^{62,63} Through partnerships with clinicians, public health advocates, communities and women with lived experience, PQCs are uniquely positioned to connect broad partners to work together to improve maternal and infant health outcomes across the United States, improving outcomes for all mothers and their babies.

ACKNOWLEDGMENTS

The authors are thankful for the support of Tiffany Colarusso, MD, MPH and Charlan Kroelinger, PhD of the Maternal and Infant Health Branch, Division of Reproductive Health, within the National Center for Chronic Disease Prevention and Health Promotion of the CDC. The authors recognize and appreciate the work of all state PQC teams and providers and staff in facilities participating with their state PQC.

Abbreviations

AIM	Alliance for Innovation on Maternal Health
CDC	Centers for Disease Control and Prevention
COVID-19	coronavirus disease 2019
HRSA	Health Resources and Services Administration
IHI	Institute for Healthcare Improvement
ILPQC	Illinois PQC
L&D	labor and delivery
MAT	medication-assisted treatment
MMRCs	Maternal Mortality Review Committees

MOUD	medication for opioid use disorder
NNPQC	National Network of PQCs
NTSV	nulliparous, term, singleton, vertex
OUD	opioid use disorder
PNQIN	Perinatal-Neonatal Quality Improvement Network of Massachusetts
PQCs	Perinatal Quality Collaboratives
PSB	patient safety bundle
QI	quality improvement
SMM	severe maternal morbidity
SUDs	substance use disorders
TA	technical assistance

REFERENCES

1. Declercq EZL. Severe maternal morbidity in the United States: a primer. The commonwealth fund. 2021. Available at: https://www.commonwealthfund.org/sites/default/files/2021-10/Declercq_severe_maternal_morbidity_in_US_primer_db.pdf. Accessed March 10, 2025.
2. Madden N, Kanugula S, Yee LM, et al. Area poverty and adverse birth outcomes: an opportunity for quality improvement. *Obstet Gynecol* 2025;145(2):231–40. [PubMed: 39666974]
3. Data from the pregnancy mortality surveillance system. Centers for disease control and prevention. 2025. Available at: <https://www.cdc.gov/maternal-mortality/php/pregnancy-mortality-surveillance-data/index.html>. Accessed May 27, 2025.
4. Tarasoff L, Ravindran S, Malik H, et al. Maternal disability and risk for pregnancy, delivery, and postpartum complications: a systematic review and meta-analysis. *Am J Obstet Gynecol* 2020;222(1):27.e1–32.
5. Berg CJ, Harper MA, Atkinson SM, et al. Preventability of pregnancy-related deaths: results of a state-wide review. *Obstet Gynecol* 2005;106(6):1228–34. [PubMed: 16319245]
6. New York State report on pregnancy-associated deaths in 2018. New York State dept of health. 2022. Available at: https://www.health.ny.gov/community/adults/women/docs/maternal_mortality_review_2018.pdf. Accessed April 14, 2025.
7. Texas maternal mortality and morbidity review committee and department of state health services joint biennial report 2022. Texas health and human services. 2023. Available at: <https://www.dshs.texas.gov/sites/default/files/legislative/2022-Reports/2022-MMMRC-DSHS-Joint-Biennial-Report.pdf>. Accessed April 14, 2025.
8. Preventing pregnancy-related deaths. Centers for disease control and prevention. 2024. Available at: <https://www.cdc.gov/maternal-mortality/preventing-pregnancy-related-deaths/index.html>. Accessed May 28, 2025.
9. Admon LK, Winkelman TNA, Moniz MH, et al. Disparities in chronic conditions among women hospitalized for delivery in the United States, 2005–2014. *Obstet Gynecol* 2017;130(6):1319–26. [PubMed: 29112666]
10. Lundsberg LS, Main EK, Lee HC, et al. Low-interventional approaches to intrapartum care: hospital variation in practice and associated factors. *J Midwifery Womens Health* 2020;65(1):33–44. [PubMed: 31502407]
11. Clark RRS, Lake ET. Spontaneous vaginal birth varies significantly across US hospitals. *Birth* 2021;48(1):44–51. [PubMed: 33174241]

12. Xu X, Lee HC, Lin H, et al. Hospital variation in utilization and success of trial of labor after a prior cesarean. *Am J Obstet Gynecol* 2019;220(1):98.e1–14.
13. Main EK, Chang SC, Cheng YW, et al. Hospital-level variation in the frequency of cesarean delivery among nulliparous women who undergo labor induction. *Obstet Gynecol* 2020;136(6):1179–89. [PubMed: 33156193]
14. Kozhimannil KB, Law MR, Virnig BA. Cesarean delivery rates vary tenfold among US hospitals; reducing variation may address quality and cost issues. *Health Aff* 2013;32(3):527–35.
15. Grobman WA, Bailit JL, Rice MM, et al. Can differences in obstetric outcomes be explained by differences in the care provided? The MFMU network APEX study. *Am J Obstet Gynecol* 2014;211(2):147.e1–16.
16. Perinatal quality collaboratives. Centers for disease control and prevention. 2024. Available at: <https://www.cdc.gov/maternal-infant-health/pqc/index.html>. Accessed June 18, 2024.
17. Lee King PA, Henderson ZT, Borders AEB. Advances in maternal fetal medicine: perinatal quality collaboratives working together to improve maternal outcomes. *Clin Perinatol* 2020;47(4):779–97. [PubMed: 33153662]
18. Map of State PQC Activities. National network of perinatal quality collaboratives. Available at: <https://nnpqc.org/>. Accessed April 9, 2025.
19. Henderson ZT, Ernst K, Simpson KR, et al. The national network of state perinatal quality collaboratives: a growing movement to improve maternal and infant health. *J Wom Health* 2018;27(3). 10.1089/jwh.2018.6941.
20. Goodman D, Zagaria AB, Flanagan V, et al. Feasibility and acceptability of a checklist and learning collaborative to promote quality and safety in the perinatal care of women with opioid use disorders. *J Midwifery Womens Health* 2019;64(1): 104–11. [PubMed: 30695159]
21. Gutman CE, Scott PA, Morad A, et al. Safe to sleep in Tennessee: a statewide quality improvement initiative. *Am J Perinatol* 2024;41(S 01):e1747–55. [PubMed: 37168012]
22. Palm HC, Degnan JH, Biefeld SD, et al. An initiative to implement immediate postpartum long-acting reversible contraception in rural New Mexico. *Am J Obstet Gynecol* 2020;222(4):S911.e1–7.
23. Callaghan-Koru JA, DiPietro B, Wahid I, et al. Reduction in cesarean delivery rates associated with a State quality collaborative in Maryland. *Obstet Gynecol* 2021;138(4):583–92. [PubMed: 34623072]
24. Gentle SJ, Moore M, Blackmon R, et al. Improving birth certificate data accuracy in Alabama. *Health Sci Rep* 2022;5(3):e607. [PubMed: 35509413]
25. Vamos CA, Thompson EL, Cantor A, et al. Contextual factors influencing the implementation of the obstetrics hemorrhage initiative in Florida. *J Perinatol* 2017; 37(2):150–6. [PubMed: 27853321]
26. Callaghan-Koru JA, Creanga AA, DiPietro B, et al. Implementation of the safe reduction of primary cesarean births safety bundle during the first year of a statewide collaborative in Maryland. *Obstet Gynecol* 2019;134(1):109–19. [PubMed: 31188309]
27. Henderson ZT, Suchdev DB, Abe K, et al. Perinatal quality collaboratives: improving care for mothers and infants. *J Womens Health (Larchmt)* 2014;23(5): 368–72. [PubMed: 24655150]
28. How to improve: model for improvement. Institute for healthcare improvement. Available at: <https://www.ihl.org/resources/how-improve-model-improvement>. Accessed April 8, 2025.
29. Resar RGF, Haraden C, Nolan TW. Using care bundles to improve health care quality. 2012. IHI innovation series 2012 white paper. Available at: <https://www.ihl.org/resources/white-papers/using-care-bundles-improve-health-care-quality>.
30. Mahoney J The alliance for innovation in maternal health care: a way forward. *Clin Obstet Gynecol* 2018;61(2):400–10. [PubMed: 29481369]
31. Alliance for innovation on maternal health (AIM). Health resources and services administration. 2025. Available at: <https://mchb.hrsa.gov/programs-impact/programs/alliance-innovation-maternal-health>. Accessed May 28, 2025.
32. Allen C, Taylor I, Ushry A. Alliance for innovation on maternal health: evolution of a program to address maternal morbidity and mortality. *Semin Perinatol* 2024;48(3): 151903. 10.1016/j.semperi.2024.151903. [PubMed: 38688743]

33. Alliance for innovation on maternal health. Alliance for innovation on maternal health. Available at: <https://saferbirth.org/>. Accessed May 28, 2025.
34. Raffo JE, Titcombe C, Henning S, et al. Clinical–community linkages: the impact of standard care processes that engage medicaid-eligible pregnant women in home visiting. *Womens Health Issues* 2021;31(6):532–9. [PubMed: 34301450]
35. Glazer KB, Zeitlin J, Howell EA. Intertwined disparities: applying the maternal-infant dyad lens to advance perinatal health equity. *Semin Perinatol* 2021;45(4): 151410. 10.1016/j.semperi.2021.151410. [PubMed: 33865629]
36. Obstetric hemorrhage patient safety bundle. Alliance for innovation on maternal health. 2022. Available at: <https://saferbirth.org/psbs/obstetric-hemorrhage/>. Accessed April 3, 2025.
37. Obstetric Hemorrhage- impact statement. perinatal-neonatal quality improvement network of Massachusetts. Available at: <https://pnqinma.org/massachusetts-aim-initiative/>. Accessed April 2, 2025.
38. Alliance for innovation on maternal health hemorrhage bundle. West Virginia perinatal partnership. Available at: <https://wvperinatal.org/alliance-for-innovation-on-maternal-health-hemorrhage-bundle/>. Accessed April 2, 2025.
39. Shields LE, Wiesner S, Klein C, et al. Early standardized treatment of critical blood pressure elevations is associated with a reduction in eclampsia and severe maternal morbidity. *Am J Obstet Gynecol* 2017;216(4):415.e1–5.
40. Severe hypertension in pregnancy patient safety bundle. Alliance for innovation on maternal health. 2022. Available at: <https://saferbirth.org/psbs/severe-hypertension-in-pregnancy/>. Accessed April 25, 2025.
41. Borders A, Keenan-Devlin L, Oh EH, et al. Reducing severe maternal morbidity for birthing persons with severe hypertension through a statewide quality improvement initiative. *Am J Obstet Gynecol* 2025;232(1):128.e1–9.
42. Schneider P, Lorenz A, Menegay MC, et al. The Ohio maternal safety quality improvement project: initial results of a statewide perinatal hypertension quality improvement initiative implemented during the COVID-19 pandemic. *Am J Obstet Gynecol MFM* 2023;5(6):100912. 10.1016/j.ajogmf.2023.100912. [PubMed: 37003568]
43. Osterman M, Hamilton B, Martin J, et al. Births: final data for 2022 national vital statistics report. Vol. 73, no 2. Hyattsville MD: National Center for Health Statistics 2024. Accessed April 4, 2025. Available at: <https://www.cdc.gov/nchs/data/nvsr/nvsr73/nvsr73-02.pdf>
44. Spong CY, Berghella V, Wenstrom KD, et al. Preventing the first cesarean delivery: summary of a joint Eunice Kennedy Shriver National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, and American College of Obstetricians and Gynecologists Workshop. *Obstet Gynecol* 2012; 120(5):1181–93. [PubMed: 23090537]
45. Caughey AB, Cahill AG, Guise JM, et al. Safe prevention of the primary cesarean delivery. *Am J Obstet Gynecol* 2014;210(3):179–93. [PubMed: 24565430]
46. Safe reduction of cesarean birth patient safety bundle. Alliance for innovation on maternal health. 2023. Available at: <https://saferbirth.org/psbs/safe-reduction-of-cesarean-birth/>. Accessed April 25, 2025.
47. Swenson K, Bradfield M, Czmowski A, et al. Implementation of a labor dystocia checklist to reduce NTSV C-Section rates. *Fam Med* 2024;56(10):663–7. [PubMed: 39383518]
48. Pregnancy-related deaths: data from maternal mortality review committees in 38 U. S. States, 2020. Centers for disease control and prevention. 2024. Available at: <https://www.cdc.gov/maternal-mortality/php/data-research/index.html>. Accessed April 14, 2025.
49. About opioid use during pregnancy. Centers for disease control and prevention. 2024. Available at: <https://www.cdc.gov/opioid-use-during-pregnancy/about/>. Accessed April 14, 2025.
50. Wright TE, Terplan M, Ondersma SJ, et al. The role of screening, brief intervention, and referral to treatment in the perinatal period. *Am J Obstet Gynecol* 2016;215(5): 539–47. [PubMed: 27373599]
51. Obstetric care for women with opioid use disorder patient safety bundle. Alliance for innovation on maternal health. 2020. Available at: <https://saferbirth.org/psbs/archive-obstetric-care-for-women-with-opioid-use-disorder/>. Accessed April 25, 2025.

52. Lee King PA, Lee S, Weiss D, et al. Implementation of perinatal quality collaborative statewide initiative improves obstetrical opioid use disorder care and outcomes. *Am J Obstet Gynecol* 2025;232(1):130.e1–10.
53. Ellick KL, Kroelinger CD, Chang K, et al. Increasing access to quality care for pregnant and postpartum people with opioid use disorder: coordination of services, provider awareness and training, extended postpartum coverage, and perinatal quality collaboratives. *J Subst Use Addict Treat* 2024;156:209208. [PubMed: 37939904]
54. Rouse TB, DeJoseph J, Ollendorff AT. Bringing depth and meaning to perinatal quality improvement by partnering with patients. *Clin Obstet Gynecol* 2019;62(3): 528–38. [PubMed: 31180914]
55. Schneider PD, Sabol BA, Lee KPA, et al. The hard work of improving outcomes for mothers and babies: Obstetric and perinatal quality improvement initiatives make a difference at the Hospital, State, and national levels. *Clin Perinatol* 2017;44(3): 511–28. [PubMed: 28802336]
56. Hillemeier MM, Domino ME, Wells R, et al. Effects of maternity care coordination on pregnancy outcomes: propensity-weighted analyses. *Matern Child Health J* 2015;19(1):121–7. [PubMed: 24770956]
57. Mallinson DC, Gillespie KH. Racial and geographic variation of prenatal care coordination receipt in the State of Wisconsin, 2010–2019. *J Community Health* 2024;49(4):732–47. [PubMed: 38407757]
58. Transforming maternal health (TMAH) model. Centers for medicare & Medicaid services. Available at: <https://www.cms.gov/priorities/innovation/innovation-models/transforming-maternal-health-tmah-model>. Accessed May 1, 2025.
59. Maternal safety bundles. Alliance for innovation on maternal health community care initiative. Available at: <https://www.aimcci.org/bundles/>. Accessed May 1, 2025.
60. Community-Centered Hospital initiative (CCHI). National Institute of Children’s health quality. Available at: <https://nichq.org/projects/community-centered-hospital-initiative-cchi/>. Accessed May 1, 2025.
61. Clinical guidelines and standardization of practice to improve outcomes: ACOG Committee Opinion, number 792. *Obstet Gynecol* 2019;134(4):e122–5. [PubMed: 31568368]
62. Maternal resource guide. Utah women and newborns quality collaborative. Office of maternal and child health, Utah dept of health and human services. Available at: <https://mihp.utah.gov/maternal-resource-guide-utah>. Accessed June 5, 2025.
63. ALPQC perinatal resources directory. Alabama perinatal quality collaborative. Available at: <https://uabsoph.maps.arcgis.com/apps/MapJournal/index.html?appid=d6fca1b6b56f44f4be7924761893af45>. Accessed June 5, 2025.

Box 1**Key Perinatal Quality Collaborative strategies to implement quality improvement****Collaborative Learning**

PQCs provide opportunities for hospital teams to learn collaboratively by hosting regular virtual meetings, providing mechanisms for ad hoc information sharing, such as state-specific online portals, and through periodic in-person meetings. These sessions are a critical point of support for hospital teams, providing opportunities for teams to discuss common barriers and brainstorm solutions, allowing for widespread dissemination of best practices and strategies to improve QI implementation. Many PQCs develop and conduct webinar series on clinical topics, such as harm reduction, hepatitis C screening and treatment, and perinatal mental health conditions.²⁰ Some PQCs offer training opportunities that are less topic specific and more implementation specific, such as example clinical protocols and education on QI methods.^{21,22} Regularly scheduled webinars over a series of months ensure continuous learning and multiple opportunities to reinforce concepts, test for understanding, and maintain an engaged network of providers and partners. Conference calls and in-person meetings with facilitated discussions allow for information sharing and useful instruction.^{23,24}

Rapid-cycle Data Reporting

Another integral element of PQCs is providing rapid-cycle data reports to hospital teams. Regardless of the QI methodology used, QI entails implementation of small tests of change, ongoing data collection to monitor those changes and reporting of data to track results. PQCs provide much needed assistance to hospital teams by supporting data collection and analysis, compiling the data and then sharing back timely, accurate data with the hospital teams to track results.

QI Methods Support

Hospitals have differing capacities to implement QI, and PQCs provide individualized QI technical assistance (TA) and resources to support implementation of QI activities. Most PQCs have dedicated QI coaches that meet regularly with hospital teams to provide ongoing education and hospital-specific TA. Through guidance from advisory groups and TA calls, PQCs provide support, keeping implementation consistent and of high quality.^{20,23} Site visits to PQC-supported hospitals provide opportunities to review site procedures and data collection processes.²⁴

A common and successful way that PQCs support hospitals is through developing and disseminating resources such as checklists and toolkits. These tools are provided by PQCs to assist hospital teams in implementing evidence-informed practices.²⁰ Toolkits may involve protocols or step by step lists that allow hospitals to ensure their work is done in a complete and thorough manner.²⁵ A commonly used resource for PQCs are *PSBs*.²⁶

Box 2**Ways for providers to engage with their state perinatal quality collaborative**

1. Identify your statewide PQC: the NNPQC provides a map of every state PQC ([PQC US map](#)).¹⁸
2. Learn about the quality improvement efforts in your state: visit your state PQC Web site and review the resources and data reports available.
3. Actively engage with your statewide PQC in one or more of several roles¹⁷:
 - PQC leadership
 - QI initiative leadership
 - Advisory workgroup member
 - Grand rounds speaker bureau
 - In-person meeting
4. Be a champion for quality improvement: Improvement in maternal and infant care and outcomes needs strong provider engagement in quality improvement leadership at the hospital level.¹⁷
5. Educate others: As you learn and get involved in quality improvement efforts share what you learn with other providers in your network.

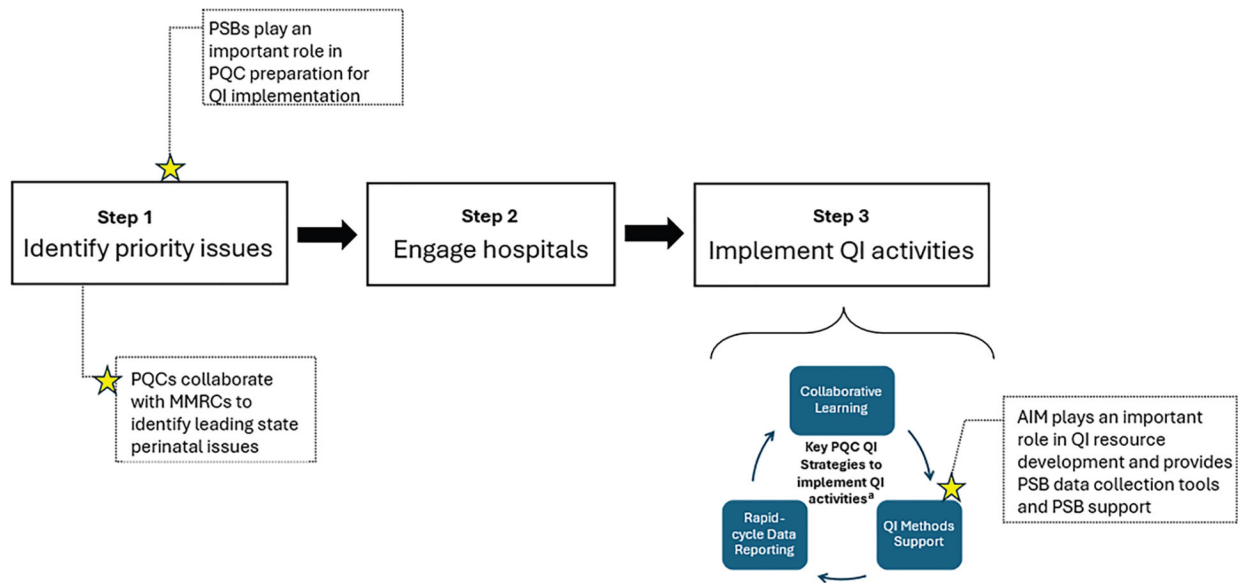
Map lines delineate study areas and do not necessarily depict accepted national boundaries

KEY POINTS

- Quality improvement is an important, proven strategy to improve maternal and infant care and outcomes.
- Patient safety bundles are evidence-informed tools used to improve hospital processes and outcomes.
- Perinatal Quality Collaboratives comprehensively support quality improvement activities (eg, implementing patient safety bundles) in a variety of settings, leading to improved care and outcomes.

CLINICS CARE POINTS

- Quality improvement is an important, proven strategy to improve maternal and infant care and outcomes.
- PSBs are evidence-informed tools to improve hospital processes and outcomes.
- PQC's comprehensively support quality improvement activities (eg, implementing PSBs) in a variety of settings to improve care and outcomes.
- There are many examples of PQC's using PSBs to successfully improve care processes and outcomes.
- Multidisciplinary hospital teams are key for the success of PQC's and their quality improvement initiatives.

**Fig. 1.**

Perinatal Quality Collaboratives' (PQC) Approach to Quality Improvement (QI) implementation and the role of Patient Safety Bundles (PSBs). PQCs, Perinatal Quality Collaboratives; MMRC, Maternal Mortality Review Committees; PSB(s), Patient Safety Bundles(s); QI, quality improvement; AIM, Alliance for Innovation on Maternal Health.

^aDetails of key PQC strategies to implement QI can be found in Box 1.