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BLOOMBERG SCHOOL
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Women's and Children's Health Policy Center

Strengthen the Evidence for MCH Programs: Environmental Scan of Strategies

National Performance Measure (NPM) #2: Low Risk Cesarean Deliveries

Percent of cesarean deliveries among low-risk first births

Introduction

This environmental scan identifies collections of strategies to advance performance for NPM #2, Low Risk Cesarean Deliveries. The information provided in this document focuses on strategies to achieve the NPM, not on the content of care or specified health outcomes. Please note that the quality of the evidence in this compilation has not been evaluated, and that data sources describing a single strategy, rather than a collection of strategies, have been excluded.

This compilation includes the following sections:

- **Reviews and Compilations:** Identifies existing compilations for strategies that intend to improve performance for each measure
- **Frameworks and Landmark Initiatives:** Frameworks includes conceptual models underlying strategy implementation; Landmark Initiatives include seminal programs/policies related to the NPM
- **Data Sources:** Indicates sources, search criteria, links to search strategy and selected organizational websites
- **Inclusion and Exclusion Criteria**: Denotes types of studies, setting, populations of interest and exclusion criteria

Technical assistance for State Title V MCH programs related to using evidence to inform State Action Plans, selection of strategies, and development of evidence-based or evidence-informed Strategy Measures may be requested at http://www.semch.org/technical-assistance.html

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Strengthen the Evidence Base for MCH Programs is a collaborative initiative of the Women's and Children's Health Policy Center at Johns Hopkins University, AMCHP, and Welch Medical Library. This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number U02MC28257, MCH Advanced Education Policy, $1.65 M. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

Reviews and Compilations

Review/Compilation	Summary	Web Link
Akinsipe et al. (2012). A Systematic Review of Implementing an Elective Labor Induction Policy. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*. [Target[1]: A]	• Reviewed 6 retrospective and 3 prospective observational studies • Findings - Implementation of elective induction policies resulted in lower induction, cesarean, operative/instrumental vaginal delivery, and maternal/neonatal morbidity rates - Other potential strategies: reduced reimbursement for elective deliveries or adverse outcomes resulting from these births, general movement toward adoption of patient safety efforts throughout the health care system	http://dx.doi.org/10.1111/j.1552-6909.2011.01320.x
Branch & Silver. (2012). Managing the Primary Cesarean Delivery Rate. *Clinical Obstetrics & Gynecology*. [Target: A, G, H]	• Interventions to reduce primary cesarean rate (expert opinion) - Tort reform to limit frivolous lawsuits in cases such as non-reassuring fetal monitor tracings - Improved and accurate patient education regarding the risks and benefits of vaginal delivery and CD - More widespread use of nurse midwives - Equal physical compensation for vaginal delivery and CD - Reestablished training for breech vaginal deliveries and operative vaginal deliveries - A commitment from the obstetric profession, specifically at the department level, to "lowering the primary CD rate using every practical measure" • Potential targets for clinical interventions: active labor management, abnormal intrapartum fetal heart rate tracings, breech vaginal deliveries, elective labor induction • Potential targets for non-clinical interventions - Provider education may be more effective than patient education - Use of certified nurse midwives - Physician compensation • Effective strategies: audit and feedback, quality improvement, and multifaceted strategies focused on engaging health care workers and modifying their practice	http://dx.doi.org/10.1097/GRF.0b013e318263c547

Brown et al. (2013). Package of Care for Active Management Labor for Reducing Cesarean Section Rates in Low-Risk Women. *Cochrane Database of Systematic Reviews*. [Target: A]	• Reviewed 7 RCTs • Findings - Women who received active management were slightly less likely to have a caesarean section and were more likely to have shorter labors - Active management is associated with small reductions in the CS rate, but it is highly prescriptive and interventional	http://dx.doi.org/10.1002/14651858.CD004907.pub3
Caughey et al. (2014). Safe Prevention of the Primary Cesarean Delivery. *Obstetrics & Gynecology.* [Target: A,B,C,H]	• Listed the most common indications for primary CDs • Revisit the definition of labor dystocia, improved and standardized fetal heart rate interpretation and management, increasing women's access to non-medical interventions during labor (continuous labor and delivery support), external cephalic version for breech presentation and a trial of labor for women with twin gestations when the first twin is in cephalic presentation • Setting an agenda regarding safe prevention of primary CD at the level of practices, hospitals, health care systems, and patients and at the national and regional level • Systemic interventions (audit and feedback, second opinions, culture change) by changing the local culture and attitudes of obstetric care providers • Tort reform	http://dx.doi.org/10.1016/j.ajog.2014.01.026
Chaillet & Dumont. (2007). Evidence-Based Strategies for Reducing Cesarean Section Rates: A Meta-Analysis. *Birth*. [Target: A]	• Included 10 studies • Findings - Audit and feedback (pooled RR = 0.87), quality improvement (pooled RR = 0.74), and multifaceted strategies (pooled RR=0.73) were effective for reducing CS rate - Quality improvement based on active management of labor showed mixed effects - CS rate can be safely reduced by interventions that involve health workers in analyzing and modifying their practice - Multifaceted strategies, based on audit and detailed feedback, are advised to improve clinical practice and effectively reduce CS rates	http://dx.doi.org/10.1111/j.1523-536X.2006.00146.x

	- Identification of barriers to change is major key to success	
Horey et al. (2011). Information for Pregnant women about Cesarean Birth. *Cochrane Database of Systematic Reviews*. [Target: A,G]	• Reviewed 2 RCTs - A program of prenatal education and support - Cognitive therapy to reduce fear • Findings - Neither intervention made any difference to clinical outcomes - Trials of interventions to encourage women to attempt vaginal birth showed no effect, but shortcomings in study design mean that the evidence is inconclusive	http://dx.doi.org/10.1002/14651858.CD003858.pub2
Khunpradit et al. (2011). Non-Clinical Interventions for Reducing Unnecessary Cesarean Section. *Cochrane Database of Systematic Reviews*. [Target: A,B,G,H]	• Included 16 studies • Findings - 2 RCTs were shown to be effective in reducing cesarean section rates: a nurse-led training program for women with a fear or anxiety of childbirth and birth preparation sessions - There is insufficient evidence that prenatal education and support programs, computer patient decision-aids, decision-aid booklets, and intensive group therapy are effective - 3 of the 10 studies targeting health professionals were effective in reducing CS rates: mandatory second opinion, mandatory second opinion + peer review feedback at department meetings, guidelines implementation with support from local opinion leaders - There was insufficient evidence that audit and feedback, training of public health nurses, insurance reform, external peer review and legislative changes are effective - Implementation of guidelines with mandatory second opinion can lead to a small reduction in caesarean section rates, predominately in intrapartum sections - Peer review, including pre-caesarean consultation, mandatory secondary opinion and post-caesarean surveillance can lead to a reduction in repeat caesarean section rates - Guidelines disseminated with endorsement and support from local opinion leaders may increase the proportion of women with previous caesarean sections being offered a	http://dx.doi.org/10.1002/14651858.CD005528.pub2

	trial of labor in certain settings - Nurse-led relaxation classes and birth preparation classes may reduce caesarean section rates in low-risk pregnancies	
Main et al. (2012). Creating a Public Agenda for Maternity Safety and Quality in Cesarean Delivery. *Obstetrics & Gynecology*. [Target: A,G,H]	• To reduce the rising CD rate, a multi-strategy approach is required • Most promising mix: clinical quality improvement strategies with careful examination of labor management practices to reduce those that lead to the development of indications for CDs, payment reform to eliminate negative or perverse incentives, health care provider and consumer education to recognize the value of normal vaginal birth, full transparency through public reporting and continued public engagement	N/A
Queenan. (2012). How to Stop the Relentless Rise in Cesarean Deliveries. *Obstetrics & Gynecology*. [Target: A,G,H]	• Suggestions for reducing CS rate: achieve obstetric departmental commitment to lowering CD rates, achieve better patient education using evidence-based information, achieve tort reform at the federal or state level, use more nurse midwives, provide equal compensation for vaginal and cesarean deliveries, reestablish teaching and training for breech and operative vaginal deliveries	http://dx.doi.org/10.1097/AOG.0b013e3182266682
Ruth et al. (2002). Strategies to Address Global Cesarean Section Rates: A Review of the Evidence. *Birth*. [Target: A]	• Reviewed 2 psychosocial interventions, 9 non-clinical interventions, and 9 structural strategies aimed at decreasing CS rates • Findings - 2 clinical interventions (external cephalic version, vaginal birth after a previous cesarean) and 1 psychosocial intervention (one-to-one trained support during labor) demonstrated Level 1 (systematic reviews) evidence for reducing CS rates	http://dx.doi.org/10.1046/j.1523-536X.2002.00153.x
Sakala. (1993). Midwifery Care and Out-of-Hospital Birth Settings: How Do They Reduce Unnecessary Cesarean Section Births? *Social Science & Medicine*.	• Addressed the strategy by expanding the availability and use of midwives and out-of-hospital birth settings • 6 studies reporting CS rates for matched or adjusted usual care and primary care cohorts: primary CS rate is much lower for the midwifery/maternity center group (4.3%) than the usual care group (13.7%) • Described the Utah Independent Midwifery Study in detail • Described the difference in medical approach between physicians and midwives	http://dx.doi.org/10.1016/0277-9536(93)90335-2

[Target: C]		
Spong et al. (2012). 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. *Obstetrics & Gynecology.* [Target: A]	• Listed factors that contribute to primary cesarean rate: induction of labor, labor management style, diagnosis of arrest disorders, labor analgesia, operative vaginal delivery, evaluation of fetal status before and during labor, non-medical factors (patient perception and education, societal attitudes, social media), institutional factors (time constraints for scheduling, varying operating room staff availability, inability to support prolonged inductions with resources and space), physician factors (fatigue, work load, anticipated sleep deprivations, financial incentives) • Clinician's ability to modify/mitigate these factors is the first step toward lowering the primary cesarean rate	N/A

Agency for Healthcare Research and Quality. (2012). Strategies to Reduce Cesarean Birth in Low-Risk Women. [Target: A,B,G]	• Reviewed 97 publications (95 distinct study populations): 68 RCTs, 29 pre-post studies of health system changes • Listed the strength of evidence for various strategies to reduce cesarean birth including those used during pregnancy, during labor, and system-level strategies (Table B): most had insufficient evidence • Conclusion: no approach dominated as a strategy appropriate to reduce use of cesarean in low-risk women	http://effectivehealthcare.ahrq.gov/ehc/products/263/1291/CER80_C-Section_ExecutiveSummary_20121018.pdf
Association of Maternal & Child Health Programs (AMCHP). (2014). State Title V Approaches to Improving Birth Outcomes: Lowering	• Voluntary provider, hospital reforms, and quality improvement - California o California Department of Public Health Maternal, Child and Adolescent Health Program developed a toolkit to reduce non-medically indicated deliveries before 39 weeks gestation o Educating clinicians, pregnant women, and community members on the risks of non-medically	http://www.amchp.org/Policy-Advocacy/health-reform/Documents/AMCHP_Kellogg_NMI%2039%20week%20Issue_Brief%20FINAL.pdf

Non-Medically Indicated Deliveries: Highlights states with Title V involvement in reducing non-medically indicated deliveries. [Target: A,C,G,H]	indicated induction o Developed the "Labor Induction Toolkit" o Across California, the CDPH-MCAH Regional Perinatal Programs of California, the CA Hospital Association, and March of Dimes developed an environmental scan to assist each organization in assessing hospital progress on multiple points leading to the implementation and use of the toolkit o The toolkit was the basis for a project in which 25 hospitals in CA, FL, IL, NY, and TX representing 40% of the births in the nation demonstrated a reduction in elective singleton early term deliveries from 17.8 percent to 4.8 percent - Payment reform o Payments made to hospitals and providers are another lever that some states are using to lower the rate of non-medically indicated deliveries before 39 weeks o 9 state Medicaid programs have implemented payment reforms (pay the same rate for a cesarean delivery as a vaginal birth, lower the payment for non-emergency cesarean sections to a level below that of vaginal birth, non-payment for deliveries before 39 weeks that are not medically indicated) - North Carolina o Quality improvement strategies linked to payment reforms o Statewide program of community stakeholders collaborate to create a system of care through the use of a medical home concept for obstetric care o Pregnancy care management system with performance expectations (avoidance of non-medically indicated deliveries before 39 weeks of gestation) for Medicaid recipients with risk factors for poor health outcomes ▪ Higher reimbursement rate for vaginal	

	deliveries, reductions in paperwork - Texas o Provider training and education to reduce non-medically indicated preterm deliveries o Change in Medicaid policy (2011): requiring delivering clinicians to add a modifier to claims indicating medical necessity for pre-39-week deliveries, failure in doing so results in denied payment o Provider-level education through webinar and online learning module for clinicians and accompanying video demonstrating effective negotiation between clinicians and patients who desire a non-medically indicated delivery before 39 weeks (continuing education credits) o In-person, multi-site training for nurses, midwives, social workers, community health workers, and other stakeholders on the importance of a 39 week gestation in healthy pregnancies and information about the change in Medicaid policy o Brochures and posters to WIC clinics - Compilation of strategies o Statewide plan for improving birth outcomes at the state and community level o Funding strategies and opportunities with ACA to improve funding of work to reduce non-medically indicated deliveries before 39 weeks o Sustain services, resources, and supports for improving maternity care and lowering non-medically indicated deliveries before 39 weeks through Title V MCH Block Grant o Public health and Medicaid data for informing policy and program development, and measure the impact of efforts o Core set of Medicaid quality measures focused on the continuum of perinatal care and risk	

	o State option to finance Medicaid "pregnancy medical homes" that include quality measures and incentives that aim to reduce non-medically indicated deliveries before 39 weeks	
Association of State and Territorial Health Officials (ASTHO). (2014). Early Elective Delivery Issue Brief. [Target: A,G,H]	• Policy - "Hard-stop" policy: prohibits or denies payment for elective inductions and C-sections before 39 weeks [most effective] - "Soft-stop" policy: elective deliveries before 39 weeks are allowed if ordered by the attending physician after a peer review evaluation - "Education-only" policy: education and recommendation against early elective delivery but no formal policy adopted by medical staff • Data: accurate data collection and reporting - State health departments should obtain real-time data from hospitals, information about medical indications and gestational age • State stories - Louisiana o Hospital sign on for 39 weeks and participate in trainings to receive premium reductions in their malpractice insurance o "Elimination of Non-Medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age" toolkit to implement policies - Massachusetts: hard-stop approach in hospitals → 15% in 2010 to 1% in 2013 - Oklahoma: implementation of hard-stop policies → 81% decrease in total scheduled deliveries between 1st quarter of 2011 and 1st quarter of 2013 - South Carolina: hard-stop approach in hospitals → 50% reduction in EED in one year - Tennessee: public awareness campaigns, hospital policies, real-time data reporting, education for expecting parents - Texas: prohibition of Medicaid reimbursements to hospitals	http://www.astho.org/Early-Elective-Delivery-Issue-Brief/

	for early non-medically necessary deliveries → early-term birth rate decreased from 31% to 28% between 2010 and 2012, full-term deliveries increased from 43% to 48% during the same time - Washington: safety net assessment law which gives hospitals incentives to change their practice → EED rate dropped from 15.3% in 2010 to 7.2% in 2012	
March of Dimes. Quality Improvement and Reducing Early Elective Deliveries Grant Program. [Target: A]	• Washington: 65 hospitals involved in initiative to reduce early elective deliveries → 86.5% reduction in early elective deliveries from 15.3% in 2011 to 1.85% • Iowa: hospitals educated on the importance of instituting a hard stop policy on scheduling elective delivers before 39 weeks, 6 hospitals tracking and reporting rates on a monthly basis → decrease from 7.55% in May 2012 to 0.9% in June 2013 • Mississippi: 43 birthing hospitals signed a pledge, committing to adopting a hard stop policy to prevent scheduling of elective deliveries before 39 weeks and to submitting scheduling and delivery data to document their progress	http://www.marchofdimes.org/mission/quality-improvement-and-reducing-early-elective-deliveries.aspx
National Association of Medicaid Directors (NAMD)/Association of Maternal & Child Health Programs (AMCHP). (2015). Low Risk, Primary Cesarean Births in Medicaid. [Target: A,C,G,H]	• Payment: incentivize the use of vaginal deliveries for low risk, primary births and discourage the excessive use of non-medically indicated C-sections - Lists potential payment approaches • Data: linkage of vital records and Medicaid administrative data to establish benchmark for low-risk primary C-section rates expected to achieve • Quality/value measurement: parity, gestational age, plurality, presentation • Stakeholder engagement (hospitals, ob/gyns and nurse midwives, labor and delivery teams, pregnant women, consumer and professional organizations, MCOs): policy solution implementation, education on birthing methods through written resources or direct supervision of evidence-based training, evidence-based guidelines implementation, consumer education on vaginal delivery and risks of non-medically indicated C-sections	http://medicaiddirectors.org/sites/medicaiddirectors.org/files/public/ntsv_issue_brief_final.pdf
National Governors	• Bundled payments for episodes of care (for decreasing cesarean	http://www.nga.org/files/live/sites/

Association (NGA). (2013). Effect of Provider Payment Reforms on Maternal and Child Health Services. [Target: A,H]	deliveries and labor inductions that are not medically necessary) - A single blended payment rate for professional services related to labor and delivery regardless of delivery method (with the consolidated rate prorated to reflect actual or desired prevalence of cesarean sections relative to vaginal deliveries) - Bundling the hospital and professional services payment to facilitate coordination between hospitals and health care providers - A single bundled rate for hospital services for both mother and newborn with outlier payments for infants born prematurely or with congenital abnormalities - Bundling professional services under a single payment rate to include prenatal care, ultrasound, laboratory services, labor and delivery, and postpartum care	NGA/files/pdf/2013/1305_Effect_of_Provider_Payment_Reforms_Paper.pdf
National Partnership for Women and Families. (2013). Listening to Mothers Reports and Surveys. [Target: G]	• Valuable resources for understanding and improving women's childbearing experiences • Surveys cover the time from planning pregnancy through the postpartum period, and shed light on women's attitudes, beliefs, preferences and knowledge, as well as maternity care practices and family and employment life	http://childbirthconnection.org/article.asp?ck=10068
National Partnership for Women and Families. (2014). New Cesarean Prevention Recommendations. [Target: G]	• Guide for women with recommendations on reducing their chances of a cesarean birth • Information on labor induction, labor before the pushing phase, labor during the pushing phase, etc.	http://www.childbirthconnection.org/pdfs/new-cesarean-prevention.pdf
National Quality Forum Maternity Action Team. (2014). Playbook for the Successful Elimination of Early Elective Deliveries. [Target: A,H]	• Listed potential challenges/barriers in reducing early elective delivery and strategies to overcome them • Key strategies - Strategies to engage and activate senior leadership - Policy and payment strategies: state-wide hospital collaborative focused on hard-stop implementation, modest bonuses that meet quality targets, collaborations + legislation, payment legislation	https://www.qualityforum.org/Publications/2014/08/Early_Elective_Delivery_Playbook_-_Maternity_Action_Team.aspx

[1] Target specifies Target Audience for the strategies mentioned in each Review/Compilation: A = Hospital Inpatient (includes physical, mental, and oral health); B = Hospital Outpatient (includes physical, mental, and oral health); C = Non-Hospital Outpatient Providers (e.g. community health centers, private medical groups, health maintenance organizations); D = Community Organizations (e.g. WIC, advocacy organizations, child care providers, home visiting services); E = Social Service Organizations (e.g. Head Start, child welfare); F = Schools and School Systems; G = Consumers/Families; H = Other

Frameworks and Landmark Initiatives

Framework/Initiative	Summary	Web Link
Agency for Healthcare Research and Quality (2012). Strategies to Reduce Cesarean Birth in Low-Risk Women.	Analytic framework for strategies to reduce cesarean birth in low-risk women • Health system factors: quality assurance, audit and feedback, medical/legal environment, financial incentives • Target population: women with singleton pregnancy intending vaginal birth- no prior cesarean, term, vertex - Strategies to reduce cesarean during pregnancy- adverse effects - Stage of labor at presentation - Strategies to reduce cesarean during labor- adverse effects - Intermediate outcomes: labor progression, augmentation, new maternal morbidity, fetal monitoring, failed forceps/vacuum, maternal coping, pain management, amnioinfusion - Health outcomes: route of birth, maternal morbidity & mortality, neonatal morbidity & mortality, Apgar score, NICU observation, NICU admission, maternal-infant bonding, breastfeeding success, maternal satisfaction	http://effectivehealthcare.ahrq.gov/ehc/products/263/1291/CER80_C-Section_ExecutiveSummary_20121018.pdf

Data Sources

Data Source*	Search Criteria	Web Link
Cochrane Library	Search Term: low risk cesarean delivery Search Limits: all databases, all years Sort by relevance: high to low	N/A
	Search Term: first birth cesarean delivery Search Limits: all databases, all years Sort by relevance: high to low	
	Search Term: intervention decrease cesarean delivery Search Limits: all databases, all years Sort by relevance: high to low	
	Search Term: elective cesarean delivery intervention Search Limits: all databases, all years Sort by relevance: high to low	
	Search Term: reduce unnecessary cesarean delivery Search Limits: all databases, all years Sort by relevance: high to low	
Campbell Systematic Reviews	Search Term: low risk cesarean delivery	http://www.campbellcollaboration.org/lib/?go=monograph&search=low+risk+cesarean+delivery+&search_criteria=title
	Search Term: first birth cesarean delivery	http://www.campbellcollaboration.org/lib/?go=monograph&search=first+birth+cesarean+delivery&search_criteria=title
	Search Term: intervention decrease cesarean delivery	http://www.campbellcollaboration.org/lib/?go=monograph&search=intervention+decrease+cesarean+delivery&search_criteria=title
	Search Term: elective cesarean delivery intervention	http://www.campbellcollaboration.org/lib/?go=monograph&search=elective+cesarean+delivery+intervention&search_criteria=title

	Search Term: reduce unnecessary cesarean delivery	http://www.campbellcollaboration.org/lib/?go=monograph&search=reduce+unnecessary+cesarean+delivery&search_criteria=title
PubMed	Search Term: low risk cesarean delivery Article Types: Meta-analysis/Review/Systematic Reviews Species: Humans Languages: English Sort by relevance	http://www.ncbi.nlm.nih.gov/pubmed/?term=low+risk+cesarean+delivery
	Search Term: first birth cesarean delivery Article Types: Meta-analysis/Review/Systematic Reviews Species: Humans Languages: English Sort by relevance	http://www.ncbi.nlm.nih.gov/pubmed/?term=first+birth+cesarean+delivery
	Search Term: intervention decrease cesarean delivery Article Types: Meta-analysis/Review/Systematic Reviews Species: Humans Languages: English Sort by relevance	http://www.ncbi.nlm.nih.gov/pubmed/?term=intervention+decrease+cesarean+delivery
	Search Term: elective cesarean delivery intervention Article Types: Meta-analysis/Review/Systematic Reviews Species: Humans Languages: English Sort by relevance	http://www.ncbi.nlm.nih.gov/pubmed/?term=elective+cesarean+delivery+intervention
	Search Term: reduce unnecessary cesarean delivery Article Types: Meta-analysis/Review/Systematic Reviews Species: Humans Languages: English Sort by relevance	http://www.ncbi.nlm.nih.gov/pubmed/?term=reduce+unnecessary+cesarean+delivery
Google Scholar	Search Term: low risk cesarean delivery Sort by relevance	https://scholar.google.com/scholar?hl=en&q=low+risk+cesarean+delivery+&bt

		nG=&as_sdt=1%2C21&as_sdtp=
	Search Term: first birth cesarean delivery Sort by relevance	https://scholar.google.com/scholar?q=first+birth+cesarean+delivery&btnG=&hl=en&as_sdt=0%2C21
	Search Term: intervention decrease cesarean delivery Sort by relevance	https://scholar.google.com/scholar?q=intervention+decrease+cesarean+delivery&btnG=&hl=en&as_sdt=0%2C21
	Search Term: elective cesarean delivery intervention Sort by relevance	https://scholar.google.com/scholar?q=elective+cesarean+delivery+intervention&btnG=&hl=en&as_sdt=0%2C21
	Search Term: reduce unnecessary cesarean delivery Sort by relevance	https://scholar.google.com/scholar?q=reduce+unnecessary+cesarean+delivery&btnG=&hl=en&as_sdt=0%2C21
CINAHL Plus	Search Term: low risk cesarean delivery Source Types: all results Sort by Relevance	N/A
	Search Term: first birth cesarean delivery Source Types: all results Sort by Relevance	N/A
	Search Term: intervention decrease cesarean delivery Source Types: all results Sort by Relevance	N/A
	Search Term: elective cesarean delivery intervention Source Types: all results Sort by Relevance	N/A
	Search Term: reduce unnecessary cesarean delivery Source Types: all results Sort by Relevance	N/A
AMCHP Innovation Station	State: all Region: all Practice Category: all Primary Topic: all National Performance Measures: all Year: N/A Keywords: N/A	http://www.amchp.org/programsandtopics/BestPractices/InnovationStation/Pages/default.aspx

Georgetown Knowledge Base	MCH Knowledge Base and Library Collection → Professional Resource Guides and Briefs → Low-Risk Cesarean Deliveries	http://ncemch.org/evidence/NPM-2-cesarean.php
Healthy People 2020 Structured Evidence Queries	Search by Topic Area → Maternal, Infant, and Child Health → PubMed Search MICH-7	http://phpartners.org/hp2020/
Council on Patient Safety in Women's Health Care/Alliance for Innovation on Maternal Health	N/A	http://www.safehealthcareforeverywoman.org/aim.html
National Association of Medicaid Directors	Search Term: low risk cesarean delivery	http://medicaiddirectors.org/
American College of Nurse Midwives	Search Term: low risk cesarean delivery	www.midwife.org
National Partnership for Women and Families	Search Term: low risk cesarean delivery	http://www.childbirthconnection.org
Association of Women's Health, Obstetric and Neonatal Nurses	N/A	https://www.awhonn.org
California Maternal Quality Care Cooperative	Search Term: low risk cesarean delivery	https://www.cmqcc.org
National Quality Forum (NFQ)/Patient Safety Collaboration	Search Term: low risk cesarean delivery	http://www.qualityforum.org/Patient_Safety_Collaboration.aspx

***The Strengthen the Evidence Team of Experts and selected HRSA discretionary grantees contributed to the identification of data sources*

Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
• Reviews of studies, websites, compilations on interventions/strategies aimed at promoting low risk cesarean deliveries • Language: English • Populations of interest: pregnant women without a prior cesarean birth	• Articles describing single strategies that are not part of a larger review • Studies performed or primarily focused on international populations (included reviews of studies if US studies were included)