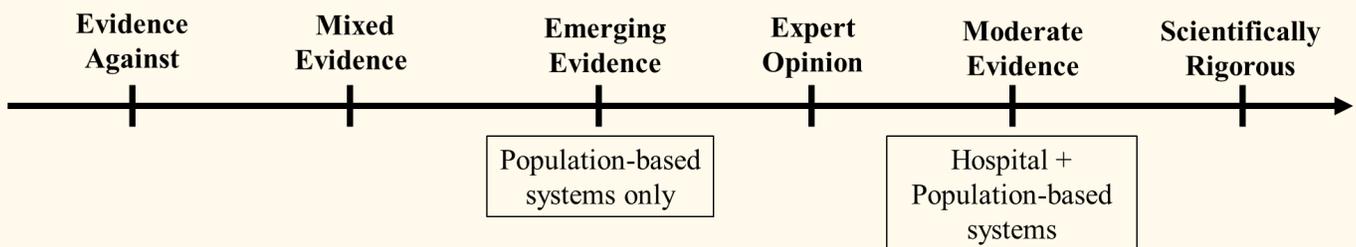


Strengthen the Evidence Base for Maternal and Child Health Programs

NPM 3: Risk-Appropriate Perinatal Care

Risk-Appropriate Perinatal Care is one of fifteen MCH National Performance Measures (NPMs) selected for the Title V Block Grant program. The goal of the NPM is to increase the percentage of very low birth weight (VLBW; <1500 gm) infants born in hospitals with a level III or higher neonatal intensive care unit (NICU). Risk-appropriate perinatal care is an important public health issue because it has implications for maternal and neonatal health outcomes.^{1,2} This brief identifies evidence-informed strategies that State Title V programs may consider implementing to address NPM 3.

The evidence review categorized risk-appropriate perinatal care interventions along an evidence continuum from *Evidence Against* (least favorable) to *Scientifically Rigorous* (most favorable). Strategies that are characterized by *Emerging Evidence* or more favorable ratings are considered evidence-informed. Interventions implemented at both the hospital and population-based systems levels were considered to have *Moderate Evidence*. Interventions implemented at only the population-based systems level had *Emerging Evidence*.



This review was conducted as part of Strengthen the Evidence Base for Maternal and Child Health Programs, a Health Resources and Services Administration-funded initiative that aims to support states in their development and implementation of strategies to promote the health and well-being of MCH populations in the United States. The remainder of the brief summarizes the approach to the review. The full review may be found at <http://semch.org/evidence-reviews.html>.

Provision of risk-appropriate levels of care to mothers and infants was first discussed in the 1976 landmark report, *Towards Improving the Outcome of Pregnancy*.³ More recently, the American Academy of Pediatrics⁴ and the American College of Obstetrics and Gynecology and Society for Maternal-Fetal Medicine⁵ released hospital level classification criteria to guide provision of risk-appropriate care. Recent estimates show 74.5% of VLBW births occurred in level III or higher hospitals.⁶ Five states had greater than 90% of VLBW infants born in risk-appropriate settings, a goal that may not be achievable in all states.⁷

METHODS & RESULTS

Peer-reviewed studies were identified by searching three online databases. Nineteen studies which evaluated the effectiveness of interventions aimed at increasing the percentage of VLBW deliveries in risk-appropriate settings were included. Studies were categorized into four groups: “Hospital only,” “Population-based systems only,” “Hospital + Population-based systems,” and “Patient + Hospital + Population-based systems.” The population-based systems studies included interventions implemented at the inter-hospital (multiple hospitals) system, state, or national levels. Examples of each type of intervention and its evidence rating are shown below.

Intervention Category	Example	Evidence Rating
Hospital only	Continuing education of hospital providers	—
Population-based systems only	State policy/ guidelines	Emerging Evidence
Hospital + Population-based systems	Continuing education of hospital providers + State policy/ guidelines	Moderate Evidence
Patient + Hospital + Population-based systems	Access to provider through hotline + Continuing education of hospital providers + State policy/ guidelines	—

— indicates insufficient number of studies to assign evidence rating

Interventions identified from peer-reviewed literature were placed along an evidence continuum to reflect whether they were: *Evidence Against*, *Mixed Evidence*, *Emerging Evidence*, *Expert Opinion*, *Moderate Evidence*, or *Scientifically Rigorous*. Specific criteria for both study type and study results informed the designation of the level of evidence for each intervention. Intervention categories with fewer than four studies were not placed on the continuum.

KEY FINDINGS

- Interventions implemented at both the hospital and population-based systems levels (e.g., Continuing education of hospital providers + State policy/ guidelines) appeared most effective in increasing risk-appropriate perinatal care.
- Population-based systems interventions alone appeared less effective.
- Adding a hospital component to population-based systems interventions appears to support the effectiveness of those interventions, as compared to interventions implemented in population-based systems alone.
- The evidence of effectiveness for interventions with a patient component is less clear.

IMPLICATIONS

- Most interventions with a hospital component included continuing education of hospital providers, suggesting that on-going education of hospital staff and providers may promote increases in risk-appropriate perinatal care.
- Rigorous data collection and more standardized classification systems are needed to better monitor the current status of regionalized systems of risk-appropriate perinatal care and to understand how implementation of specific interventions affects the percentage of VLBW infants born in level III or higher hospitals.

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References

1. Lasswell SM, Barfield WD, Rochat RW, Blackmon L. Perinatal regionalization for very low-birth-weight and very preterm infants: a meta-analysis. *JAMA*. 2010;304(9):992-1000.
2. Rashidian A, Omidvari AH, Vali Y, et al. The effectiveness of regionalization of perinatal care services-a systematic review. *Public health*. 2014;128(10):872-885.
3. Committee on Perinatal Health. Toward improving the outcome of pregnancy: recommendations for the regional development of maternal and perinatal health services (TIOP I). March of Dimes Birth Defects Foundation. 1976.
4. American Academy of Pediatrics. Levels of Neonatal Care. *J Pediatr*. 2012;130(3):587-597.
5. American College of Obstetricians and Gynecologists, Society for Maternal-Fetal Medicine, Menard MK, et al. Levels of maternal care. *Am J Obstet Gynecol*. 2015;212(3):259-271.
6. Healthy People. Maternal, Infant, and Child Health. <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4892>; Accessed on December 16, 2016.
7. Freeman VA. Very low birth weight babies delivered at facilities for high-risk neonates: A review of Title V National Performance Measure 17. 2010.

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