Quality Improvement in Perinatal Medicine and Translation of Preterm Birth Research Findings into Clinical Care

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KEYWORDS

- Spontaneous preterm birth • Translational research implementation
- Perinatal quality collaboratives

KEY POINTS

- Implementation of clinical and translational research studies into clinical practice is challenging and imperfect.
- The process of implementation occurs over years to decades but may be facilitated by multicenter networks and perinatal quality collaboratives.
- Strategies for implementation of prematurity research must be multifaceted and comprehensive.

INTRODUCTION

Billions of dollars of research money are spent each year within the fields of obstetrics and neonatology focusing on prevention or management strategies designed to improve outcomes for mothers and their neonates. However, the process of

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implementing research findings is challenging and imperfect. Appropriate and timely implementation may improve both maternal and neonatal morbidity and mortality. Conversely, premature adoption of studies without adequate scientific backing may produce inadvertent harm. For example, a trial demonstrating that intrapartum exposure to a medication reduces the risk of neonatal intraventricular hemorrhage is the first step necessary to change clinical practice. The actual real-world implementation of that medication is challenging and requires multiple steps, including necessary provider education, consideration of the logistics of making the medication available, and development of appropriate methods for ensuring appropriate use. Strategies for implementation must be multifaceted and consider the audience; for example, a comprehensive program would provide patient education, clinician guidelines, and national policymaker messages. These implementation challenges extend to, and are often greater in, "translational" and basic science research. This review discusses current challenges related to the provision of quality care in perinatal and neonatal medicine, particularly as they relate to preterm birth. Furthermore, the authors provide examples of perinatal quality collaborative initiatives within the field of prematurity. Finally, the authors review considerations in implementing both clinical and translational/basic science research within the field of prematurity.

PROVISION OF QUALITY MEDICAL CARE

Over the past 2 decades, significant emphasis has been placed on not only the provision of medical care but also the provision of "quality" medical care. This work was spurred by the Institute of Medicine's influential report, published in 2001, entitled "Crossing the Quality Chasm."[1] Initiatives in specific areas of health care, reaching across different fields of medicine, have caught the attention of policymakers, health care leaders, and payers. Increasingly, health care systems have realized the importance of integrated quality improvement approaches, in-person learning solutions, and ongoing support following these initial improvement efforts. In order to appropriately discuss and evaluate the use of quality improvement initiatives and preterm birth research, it is essential to understand the critical components of quality improvement collaboratives. Quality improvement initiatives should identify a target for improvement, the study sample (which may involve several different organizations, hospitals, or providers within a hospital system), and measurable outcomes. Typically, these outcomes are patient, provider, and health care system specific. Initiatives may include "bundles," which are often aimed at providing a specific set of algorithms or checklists for practicing providers, to ensure that national society guidelines and recommendations are followed. Theoretically, quality improvement collaboratives allow for change at multiple levels within the structure of an organization or across organizations.[2]

In February 2016, the Society for Maternal-Fetal Medicine, National Institute of Child Health and Human Development, and American College of Obstetricians and Gynecologists convened a "Quality Measures in High-Risk Pregnancies Workshop" to review topics specifically related to quality medical care in obstetrics.[3] Preterm birth was identified as a major topic at the workshop, and several measures were proposed by the workshop participants as quality measures (**Table 1**).[3]

Preterm birth has been a focus of multiple local- and state-level quality collaborative initiatives across the United States. Preterm birth has modifiable risk factors, and the risk of prematurity may be reduced with adequate interconception care, routine