Introduction

"Evidenced-Based Quality Improvement in Neonatal and Perinatal Medicine: The NIC/Q 2000 Experience" is a collection of original articles commissioned by the Vermont Oxford Network. It is the second in a planned series of electronic supplements that began in January 1999 with the electronic supplement in *Pediatrics* titled "Evidenced-Based Quality Improvement in Neonatal and Perinatal Medicine." The premise of this series is that the quality, safety, and cost of medical care for newborn infants and their families can be dramatically improved using methods of modern quality improvement coupled with the evidence-based perspective of clinical science.

This current collection presents the work of the NIC/Q 2000 Evidence-Based Quality Improvement Collaborative for Neonatology. This collaborative, sponsored by the Vermont Oxford Network, was comprised of multidisciplinary teams from 34 neonatal intensive care units across the United States. These teams worked intensively together from May 1998 through October 2001 under the guidance of an expert faculty and staff to identify, test, and implement improvements in quality and safety in a broad range of clinical, operational, and organizational domains of neonatal intensive care. Their work was based on 4 key habits for clinical improvement: the habit for change, the habit for evidence-based practice, the habit for systems thinking, and the habit for collaborative learning.

The articles in this collection provide one of the most detailed descriptions published to date on how a multi-institutional improvement collaborative actually functions. We believe, therefore, that it will be of interest not only to health professionals in neonatal intensive care, but to all professionals with an interest in collaborative quality improvement.

The first section of the collection provides background and includes an overview article describing the Vermont Oxford Network improvement collaboratives and the 4 key habits, an article documenting the economic impact of quality improvement on the cost of neonatal care, and a final article describing the organizational culture survey that was administered to staff at institutions participating in the NIC/Q 2000 Collaborative. The second section includes detailed articles organized around the 6 focus group topic areas chosen by the participating centers: chronic lung disease and lung injury, family-centered care, neonatal nutrition, multidisciplinary teamwork, brain injury, and nosocomial infection. These articles are the work of multi-institutional multidisciplinary teams. There are typically 2 articles in each topic area. The first describes the development of potentially better practices (PBPs) within the specific topic area, while the second describes the testing and implementation of these practices. The final section of the collection includes 2 additional articles describing in more detail the improvement work done at 2 of the participating institutions.

At the beginning of each paper are 2 summary sections titled "Key Points of Article" and "Applying Lessons Learned to Practice." The reader can gain a quick overview of the main points of the entire collection by reading these summaries.

The authors were recruited from the participants of the NIC/Q 2000 focus groups. Some of the authors have written many articles in the past, while, for some, this was their first experience. Some of the PBPs described in these articles are based on strong scientific evidence, whereas others are based on weaker evidence. This variability represents the reality of the multifaceted and multidisciplinary collaborative. What is consistent across all the articles in this collection is the tremendous dedication and hard work demonstrated by the participants in their quest to improve the quality and safety of medical care for high-risk newborn infants and their families.

We would like to make one final important comment. The PBPs described in this collection are just that: "potentially" better. We have avoided the common term "best practices" because we do not, in fact, know that these practices are the "best" or even "better." Please do not interpret the practices described in this collection as guidelines or consensus statements. The PBPs have not been approved by any offical body, nor have they been tested in a randomized, controlled trial. These PBPs are the honest work product of multidisciplinary teams involved in the "real world" effort of improving the quality and safety of neonatal intensive care. As such, they represent a work in progress, one that you, the reader, can join by applying the 4 key habits of clinical improvement in your own daily practice.

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