Journal of Perinatology (2009) 29, 777–778

www.nature.com/jp

EDITORIAL

Variation, perinatal regionalization and total cohort accountability

Journal of Perinatology (2009) **29,** 777–778; doi:10.1038/jp.2009.176

Providing a peer review of the manuscript addressing variation in hospital neonatal services appearing in this edition of *The Journal of Perinatology*[1] was easy: 'This is a very timely, content-laden and well-prepared article that will be a significant contribution.' Drs Blackmon, Barfield and Stark have used their abilities, experience and insight to provide further stimulus for change and improvement in our perinatal care system.

The stated objective of the study is to document variation in state government designation of hospital service levels. Their conclusions start by pointing out that states regulate perinatal services and facilities and go on to describe that they have varied widely in doing so. Placing these findings into perspective—past, present and future—will be an ongoing process to which I offer the following.

Variation

The study of variation provides substrate for change and improvement of outcomes. Perinatal medicine and in particular neonatology have a long history of recognizing short- and long-term outcomes as indicators of relative success and failure. The baby with its subsequent growth and development is a constant reminder. Neonatal and infant mortality serve as globally recognized sentinel indicators that transcend medicine and can become part of the political arena when excessive variations among subpopulations become evident.

Blackmon, Barfield and Stark in their discussion of variation in regulatory status draw attention to the fact that definitional variation can be an impediment to study. They declare that lack of uniformity in regulatory status is a 'potential barrier' to collaborative efforts. They document that 17 states and the District of Columbia lack definition of levels of services and 33 states designate from 2 to 6 service levels by numbers, titles or both. The barrier problem is expressed within the context of the state role in system development and quality improvement.[2] They go on to discuss incomplete acceptance and use of the level of care concept. Calling this institutionalized variation a potential barrier is probably an understatement.

Perinatal regionalization

The concept of perinatal regionalization now has a greater than three decades history as a policy and system reality. Level of care designation is a key concept of regional care. Toward Improving the Outcome of Pregnancy (TIOP I) packaged and structured the core concepts of evidence, risk assessment, needs assessment and resource allocation into a recommended regional hospital system of levels of care to improve outcomes.[3] TIOP II though continuing characterization of hospital services by levels broadened the focus from hospital to comprehensive perinatal care from preconception to follow-up and introduced a strong emphasis on data, evaluation and accountability.[4] Blackmon *et al.* also mention the evolution of discussion of regional perinatal services and especially the level of care designation in the *Guidelines for Perinatal Care* editions 1 through 5.

There is a persistent sense that perinatal regionalization has been both a contributor to improved perinatal outcomes and an underachiever because of not meeting expectations in terms of potential for improvement. The discussion section of the variation manuscript points out that high risk newborns delivered at appropriate perinatal service level have better outcomes implying that outcomes are better with regionalization and there is room for futher improvement.[5] A few years after the release of TIOP I in 1976 a building interest in reconvening an *ad hoc* Committee on Perinatal Health became evident eventually resulting in the 1993 publication of TIOP II.[6] Now, in 2009, we see the cycle repeating as the March of Dimes Foundation has once again asserted its leadership and has initiated a TIOP III process.[7]

Total cohort accountability

Accountability is a complex concept that includes the recognition and assumption of responsibility.[8] Total cohort accountability is not a new concept in the sense that it involves being responsible for an entire population, a cornerstone of public health. Without delving into a discussion of types of accountability let us assume that responsibility in medicine involves striving for the best state of health for all individuals and populations.

Exercising this responsibility is best done with evidence and study of variation provides an opportunity for determination of new knowledge or evidence. Study of regional variation is considered to be a productive endeavor.[9] The long-standing commitment to regionalized perinatal care in the United States and in other countries has and theoretically will continue to provide an opportunity for comparative study of populations.

Methodology of the hospital level of service definition study involved all 50 states and the District of Columbia or the total US cohort. The study data and conclusions reinforce that this total cohort has wide variation in definitions and regulations to the point where fair comparison is difficult. A definitive statement is made that: 'This variability undermines fair comparison of health outcomes, resource allocation and utilization, and cost among institutions.' If fair comparison is difficult then fair accountability is difficult also.

In conclusion, institutionalized variation in state level of hospital service definitions hinders accountability and thus progress. We can thank Blackmon *et al*.[1] for clarifying this reality. One way to perpetuate such institutionalized variation is to allow unguided market forces to decide healthcare resource allocation. This observation has been made with reference to another ongoing concern in our healthcare system, health workforce planning.[10] The struggle to improve the outcome of pregnancy would benefit from the total cohort of states providing data based on common definitions of neonatal services.

Acknowledgments

I express thanks to David Goodman and Kay Johnson for ongoing thought and stimulation.

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