Foreword

When I wrote the Preface for the First Edition of *Neonatology* in January, 1975, the specialty had not yet been baptized. The first Sub-Board Examinations in Neonatal-Perinatal Medicine were given later that year. Nurseries for sick newborns varied enormously in layout and equipment. Likewise, there was no uniformity in the training and skills of those giving care to distressed fetuses, babies in the birth transition, and sick and distressed newborn infants. Digging information out of basic science journals about these little beings, who were in a period of rapid change and had life-threatening problems, was tedious. We were not all playing with the same deck of cards.

Thus, a basic purpose of the book was to gather together relevant information about anatomy, physiology, pathology, pharmacology, bacteriology, and genetics and couple it with a best-available approach to caring for particular conditions. A special feature of distressed newborns was that they almost always had multiple problems, which interacted like jack straws. Thus, treatment of disease conditions and support of vital bodily functions were blended together.

In the 40 years since the First Edition, change has been continuous and dramatic. Genetics and biochemistry have blossomed. Previously unheard of surgical interventions have become almost routine. Instrumentation to support respiration, and even extracorporeal heart-lung machines, has proved effective and lifesaving. Microchemistry has allowed the monitoring of blood chemistries using only tiny quantities of blood. Indwelling catheters have served for both monitoring and intravenous alimentation. More than half the papers at Pediatric research meetings, over these years, have concerned the fetus and newborn.

And so, practice has changed and become more complicated and expensive. Issues have arisen over the resources to be devoted to neonatal intensive care. In addition, moral and procedural debates have sought to define how much care was beneficial, and when this care became intrusive and futile.

Some of these changes in practice have been supported by good science: others have been the best judgment of individuals, based on their own clinical experience. The truth is, good, clean clinical trials in the NICU are very difficult and expensive. Over the 2- to 3-year period of a trial, many details of care are changing, apart from the trial itself. Confounding variables are difficult to control in the face of life-threatening conditions and urgent interventions. Getting statistically significant numbers often requires a multi-institutional project, which complicates project design, data collection, randomization, interpretation of results, and publication. These projects are very costly, and the strong temptation is to load them with data collection on secondary questions. The result is a lot of data dredging, rather than clean answers to a single research question which has a yes or no answer. To paraphrase Thomas Jefferson's comment about democracy: multiinstitutional controlled trials are the worst way to evaluate new treatments, except for all the others!

That being said, the NICHD Neonatal Research Network, the Cochrane Network, and the Vermont-Oxford research trials have allowed many more of the clinical recommendations of the *7th Edition* to be objective and based on controlled trials, than was true in the past.

The *7th Edition* is now adapted to the age of digital information. It can change fluidly as new studies and discoveries emerge. It is a library where things can be quickly looked up, without dragging around what would surely now be a two-volume tome. Most of the illustrations are now in color. It is no longer strictly a text BOOK. It is a large, focused, digital database. Yet each chapter has been carefully organized, thought through, and written by a recognized expert in his/her field. (No Wikipedia this.)

The explosion of knowledge is now so great, that research, bedside care, and indeed the entire neonatology enterprise, is a collaborative venture. That is good, because we can help one another. But for myself, I hope that the care of the individual child and the individual family will always remain intensely personal and caring.

Gordon B. Avery, MD, PhD