COMMENTARY


Comments by Jack P. Shonkoff, MD* and Morris Green, MD‡

ABSTRACT. The era of child development in pediatrics began in the late 1920s with the establishment of a number of child research institutes under medical auspices, the organization of the Society for Research in Child Development, and a growing awareness that an emphasis on all aspects of the life of the child, and not exclusively on his or her biologic development, was essential. This realization was reinforced by the World War II Selective Service experience, which revealed a relatively high incidence of psychologic and social ineffectiveness among our youth. The expectation developed that child care professionals might be in a position to minimize such outcomes in the future, and parents increasingly began to look to professional services for help with child-rearing. Although there was considerable effort during this period to foster pediatric concern with the psychologic and social development of children and their adaptations to a rapidly changing society, conceptual confusion and resistance within the pediatric academic community mitigated against its success.

Clinical investigation prospers most when it draws on theory and methodology from a basic science. In its early dependence on child psychiatry for addressing psychosocial problems in children, pediatrics was relying on another clinical discipline for its research orientation, while lagging in its recognition of developments in the social and biologic sciences, in part because of their separation from pediatric settings.

Resistance to the incorporation of the psychosocial aspects of child development into pediatric training has come primarily from academic pediatricians. In part attributable to the rigid institutionalization that traditionally has inhibited academic change and innovation, the opposition also may be ascribed to the belief of some academicians that psychosocial considerations are not a proper concern of pediatricians. Others hold the view that social science data are “soft,” whereas those derived from biologic research are “hard.” Such positions, of course, have nothing to do with good science, because the scientific method demands excellence in experimental design, data collection, and data analysis regardless of the discipline. The question is, therefore, one of excellence—not of hardness or softness of data.

Because critical analysis alone is insufficient to meet present needs, a constructive action plan is necessary. Accordingly, the Executive Board of the Academy established the Section on Child Development to stimulate interest and research in the field of human growth and development, to provide a forum to facilitate communication among professional workers in the field, and to foster educational activities for pediatricians and others to increase their understanding and competence in child development. In order to incorporate such teaching and research into the mainstream of pediatrics, a core of pediatric faculty members is required, with a disciplined background of research and teaching analogous to our academic colleagues in pediatric subspecialties such as endocrinology and infectious disease. Such a desired outcome necessitates the establishment of fellowships which encompass a range of clinical and research interests extending from physical, social, psychologic, and physiologic development, through developmental biochemistry, physiology, pharmacology, and psychophysiology, as well as the social and behavioral sciences such as sociology, cultural anthropology, and psychology, among others. It is intended that such training programs will institutionalize child development as a basic science for pediatrics.

Finally, it would be inappropriate to discuss this emerging era of prevention without commenting on the social responsibilities of pediatricians. Our very considerable success in reducing morbidity and mortality from many diseases permits us to address new problems. Precisely because of our past successes, society looks to us for new answers. Many of our current challenges are in large measure social problems. For example, there is good reason to believe that further reduction in infant mortality will depend upon improvements in the living conditions of people in poverty rather than on better medical care alone. We have been slow to catch up with the rapid changes in our society. While continuing to conduct research to provide better data for planning, pediatricians can serve as advocates for wider application of the considerable knowledge we already have.
Richmond’s clarion call was clear in the late 1960s, and remains incredibly current in the late 1990s. A sophisticated understanding of human behavior and development is needed urgently to ensure effective prevention, early detection, and successful management of threats to child health in a postindustrial society. Indeed, our future capacity as pediatricians to promote the adaptation and well-being of all our nation’s children will be dependent, in part, on the productivity of our research efforts to better understand the human developmental process.

The integration of child development into the mainstream of academic pediatrics over the past 3 decades has been steady. In 1978, The Task Force on Pediatric Education characterized the biopsychosocial aspects of pediatrics as an underdeveloped area. This stimulated considerable changes in training programs, which nevertheless remain insufficient to meet current needs. Similarly, although an increasing number of pediatricians have had fellowship training in behavioral–developmental pediatrics, in part supported by the Maternal and Child Health Bureau, much remains to be done in the realm of faculty development. In 1989, the National Institute of Child Health and Human Development and the Maternal and Child Health Bureau jointly convened a conference on research in behavioral pediatrics to examine the state of the art and to chart future directions. The challenges for the research community identified at that time remain formidable today.

Thirty years after the publication of Richmond’s classic paper, behavioral–developmental pediatrics is now recognized as an academic discipline, and application for subspecialty board status is being considered. Its full scope of clinical interest has evolved to include the adaptation of children to a wide variety of biologic, psychologic, social, cultural, economic, and political contexts. In addition to the management of developmental and psychosocial problems, the field is concerned with health promotion, disease prevention, anticipatory guidance, counseling, early intervention, and the care of children with chronic illness or disability.

The underlying science of developmental–behavioral pediatrics embodies an integrative biopsychosocial model that does not segregate the mind from the body. Cross-disciplinary in nature, it has potential linkages with a broad array of disciplines including neurobiology, molecular biology, genetics, systems theory, developmental psychology, psychiatry, sociology, ethnology, and epidemiology, among others. In reality, however, the achievement of productive linkages has been infrequent. Indeed, for developmental–behavioral pediatrics to mature as an academic discipline, its exponents must integrate the contributions of these related sciences more extensively in the design and conduct of empiric research and in the critical task of theory-building.

Three core challenges must be mastered if we are to fulfill the vision articulated by Richmond. First, the science of human development must be accorded equal status in medical school education to that of biochemistry and physiology, and the like. The justification for enriching the preclinical basic science curriculum in this manner is quite straightforward. A solid grounding in the scientific basis of clinical medicine is a necessary prelude to indoctrination in the applied science and art of patient care, and human development is an important basic science for the aspiring physician.

Second, bridge-building between developmental–behavioral pediatrics and the core biologic and social sciences of human development must be pursued as a major goal. Although there have been long-standing pleas for increased cross-fertilization among disciplines, substantive research collaboration and durable partnerships are rare. In 1966, Richmond observed: “... what richer opportunities are there for collaborative studies of varied patterns of child care occurring ‘spontaneously’ than in our various clinical settings and in social agencies ... [such as those dealing with] foster care, adoptions, institutional care ...”. Three decades later, what can we say about the growth of knowledge that informs our ability to address these compelling social challenges that affect increasing numbers of vulnerable children? Richmond decried the small number of pediatricians involved in the Society for Research in Child Development, yet 3 decades later, pediatric membership in that flagship organization remains relatively limited.

Finally, and perhaps most important, the crossbar for achievement in developmental–behavioral pediatrics research must be set higher. The complexities of the clinical challenges confronting the field are daunting. The knowledge needs are immense. With 20% to 25% of the nation’s children exhibiting developmental, behavioral, or learning problems, and with between one fifth and one quarter living below the federal poverty level, the demand for creative thinking is prodigious. The time has come for the entire child development research community to unite forces in a joint effort to move beyond studies that generate statistically significant yet clinically trivial findings. Additional investigations that simply confirm the adverse consequences of low income, limited maternal education, and social disorganization on child developmental outcomes are of limited use. Notwithstanding the importance of scientific rigor, perhaps some of our research has focused too much on methodologic purity and too little on the salience of the research question or hypothesis. It is here where collaboration between pediatrics and the social sciences of human development offers the greatest promise. Our academic colleagues in the social sciences may have stronger research training, but pediatricians are better situated clinically to identify the important questions for the times.

As Richmond wrote: “... the basic background of the pediatrician in biology—particularly his responsibility for enhancing the development of the nervous system—along with his opportunities through continuing health care to observe the unfolding of the child’s psychological and social development, uniquely equips him to raise research questions concerning development which are rarely available to others. Indeed, this is the uniqueness of any pediatric investigator, for embryologists, biochemists, physiol-
ogists, pathologists, and many others can do research on development. The pediatrician’s clinical orientation, however, marks his uniqueness.”

As our understanding of the complexity of human development has grown, our appreciation of the range of variables that can affect the health and well-being of children has increased. Indeed, greater knowledge has both augmented the pediatrician’s effectiveness and underscored his or her present limitations. As we contemplate the full scope of child health challenges in our society, we realize the extent to which pediatric clinical expertise is necessary but not sufficient to address them fully. As we confront the requirement for greater knowledge about the determinants of human health and development, we highlight the responsibility of pediatricians to ensure that future research focuses on the right questions. As Richmond charged: “We stand on the threshold of achieving the best health record for children the world has ever known. Whether we cross this threshold will depend upon the imagination, industry, and resourcefulness with which we expand and apply our knowledge of child development.” The need for creative pediatric leadership is clear. And, as was true more than 3 decades ago, the time is now.

SUGGESTED READINGS

COMMENTARY


Comments by Robert A. Hoekelman, MD

ABSTRACT OF ORIGINAL ARTICLE. The increase in population of the United States is occurring at a much more rapid rate than the increase in medical and nursing personnel available to maintain health services at an optimum level. Unless the pattern of furnishing health care, particularly to lower socioeconomic groups in both urban and rural areas, is drastically improved, these groups will suffer from increasingly inadequate health supervision. This paper describes an educational and training program in pediatrics for professional nurses (the “pediatric nurse practitioner” program), which prepares them to assume an expanded role in providing increased health care for children in areas where there are limited facilities for such care.

COMMENTARY

This article describes the first pediatric nurse practitioner (PNP) training program. It was established in 1965 at the University of Colorado’s Schools of Medicine and Nursing. The authors were Henry K. Silver, MD, Professor of Pediatrics, Loretta C. Ford, EdD, Professor and Chair of Public Health Nursing, and Susan G. Steary, MS, the first student enrolled in the program.

The impetus for preparing nurses to assume an expanded role in providing primary health care services for children was the need to serve more children, especially those of lower socioeconomic status. At the time, there was a shortage of physicians and predictions of a greater shortage in the decades ahead, particularly of primary care physicians available to children. This was compounded by 1) expansion of medical knowledge, resulting in an increasing number of treatable diseases and survival rates for diseases that require more maintenance health care, and 2) an increased demand for medical services, resulting from a growing awareness by the public of the advantages of comprehensive and preventive health care, the ability to pay for it, and urbanization.

In 1930, a child averaged two visits to a physician; by 1967 this number had risen to five. In 1930, a child averaged two visits to a physician; by 1967 this number had risen to five.

The PNP was one solution to meeting the challenge of providing primary health care services to all children. There were two others proposed by Dr Silver:

1. In 1968, he launched the Child Health Associate Program at the University of Colorado Medical Center. It prepares persons who have 2 to 3 years of college education in a 3-year training program to be a physician assistant (PA) who focuses on providing primary health care services to children. The program continues today and has prepared 50% of the 800 to 900 pediatric PAs currently working in the
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