Community Pediatrics Research

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ABSTRACT. The Issue. Increasing recognition of the complexity and importance of social determinants of child health has changed dramatically the scope, direction, and purpose of pediatric research. Considered in the context of the evolving research on the role of the human genome in determining the functional status of children and adults, the increasing focus on the social determinants of health emphasizes the need for multidisciplinary collaboration in research endeavors. The changing roles of children and youths in developed societies will require an understanding of the complexity and impact of their social, economic, political, and cultural roles in society on health status and outcomes. Globalization, the shrinking scope of national governments, and our inexorable march toward a more integrated and interdependent world will have health consequences that as yet are not understood. These factors set the stage for the coming century and form the backdrop against which the formulation of research priorities must be staged. Pediatrics 2003;112:766–769; pediatric research, social determinants, globalization, PROS, CCHR, RCPCH, AAP, global health, child health, United Kingdom, United States.

ABBREVIATIONS. PROS, Pediatric Research in Office Settings; CCHR, Center for Child Health Research; RCPCH, Royal College of Paediatrics and Child Health; AAP, American Academy of Pediatrics; MCHB, Maternal and Child Health Bureau.

The framework for establishing an international research initiative relevant to the evolving morbidities of children in developed countries must consider the following factors:

- Identification and linkage of the players in community health research
- Determination of the sources of fiscal and other support for community health research
- Development of new approaches to community health research, eg, Pediatric Research in Office Settings (PROS), the Center for Child Health Research (CCHR)
- Projection of future research topics and methods
- The structure and organization of national and international research collaboration, including joint Royal College of Paediatrics and Child Health (RCPCH)-American Academy of Pediatrics (AAP) research efforts

With respect to the identification and linkage of participants in community health research, there are a number of critical institutions that must be engaged if sustainable and rigorous research is to lead to improvements in child health outcomes:

- University-based and -initiated research, emanating from departments of pediatrics, community medicine, epidemiology, and schools of public health
- Practice-based research networks, encompassing several disciplines and with the capacity to study varying population sizes
- Research groups from, for example, advocacy organizations, community groups, and community university collaboratives

Examples of successful AAP initiatives can serve as potential templates for future joint AAP-RCPCH programs in research to improve child health outcomes in our respective countries. The AAP Community Access to Child Health Program can serve as a model for engaging pediatricians and communities in efforts to improve child health. Much can be learned from the study of these initiatives and the application of this knowledge to future child health programs in the United States and the United Kingdom. Similarly, the Healthy Tomorrows Partnership for Children Program, a collaborative grant-funded program of the Maternal and Child Health Bureau (MCHB) and the AAP, with its focus on increasing access to health services at the local level, can provide a rich resource for future research. Two additional AAP initiatives—PROS and CCHR—will be presented for consideration as the forums to discuss and platforms to support future AAP-RCPCH research initiatives.

PROS

In 1985, a Task Force on Collaborative Research was established by the AAP to determine the feasibility of a pediatric primary care research network. In 1986, the AAP Executive Board voted to establish such a research network, and the first coordinators and practices were recruited. In 1987, the AAP received core funding from the US MCHB to establish and maintain PROS. The mission of PROS is to improve the health of children by conducting collaborative practice-based research to enhance primary care practice. PROS participants have increased from 182 practices, 677 pediatricians, and 46 chapters in
1995 to 547 practices, 1553 pediatricians, and 58 chapters in 2000. Approximately 2.6% of AAP members (5% of community-based practitioners) participate in the PROS network. This network has access to approximately 5% of children in the United States. However, the composition of the PROS pediatric population does not currently reflect a representative population of US children (Table 1). Relatively few African American, Hispanic, other minority groups, and lower socioeconomic groups of children are included in the PROS network practices. Linkage to private practitioners does not provide access to minority children. Community health centers, public health apartments, and urban-based academic programs must be engaged to reach these children. In addition, different funding strategies are required, as these institutions need resources to support the research initiatives.

Projects conducted by PROS encompass a wide variety of subjects pertinent to the primary care of children and youths. These studies have led to a progressively increasing number of publications appearing in peer-reviewed journals. Previous studies, initiated before 1999, included the following:

- Management of acute asthma in pediatric practice
- The referral process in primary care
- The pattern of appearance of secondary sexual characteristics in girls
- Preschool vision screening in pediatric practice
- Assessment of febrile infants <3 months of age
- Pattern and frequency of behavioral issues in primary care settings

Since 1999, the following studies have been completed or are currently in the field:

- Polio immunization delivery study: determine the effect of the change from an all-oral polio vaccine schedule to a sequential inactivated/oral schedule on the immunization status of infants
- Life around newborn discharge study (the LAND study): provide the basis for recommendations for service delivery in the peripartum period based on an empirical study of medical and psychosocial needs during the first month of life
- Helping to improve pediatric practice outcomes: develop, implement, and evaluate an approach to improving the quality of care provided to children in primary care settings
- Defining patient visits in a national pediatric practice-based research network: characterize the network, and study the effectiveness of data collection via electronic methods
- Randomized controlled trial to prevent child violence: determine potential role of a violence prevention intervention in primary pediatric care
- Child abuse reporting experience study: dissect practitioner decision making regarding suspicious injuries
- Learning from errors in ambulatory pediatrics: pilot study on a model to reduce errors in primary care ambulatory settings
- Healthy lifestyles pilot study: initiate a study that will ultimately be focused on office-based intervention to improve eating and activity patterns and stabilize weight gain of children at risk for obesity

Networks such as PROS become essential when very large populations are needed for study. Efforts are now under way to link PROS with smaller local and regional research networks to expand the number of participant practices, increase the number and diversity of the study populations, increase the relevance of the research questions to communities, and improve the dissemination of findings to practitioners and communities.

### CCHR

In 1994, the AAP Council for Pediatric Research broadened the scope of its sponsored research by establishing a group of peers to define future research priorities and to develop interdisciplinary research initiatives that embraced social as well as biological determinants of the health of children and youths. The AAP Board of Directors subsequently committed $500,000 a year for 5 years in 1998 to establish the CCHR. Michael Weitzman, MD, professor of pediatrics, University of Rochester, was selected as executive director, and the program began in September 1999. The AAP PROS and Functional Outcomes Project were moved under the auspices of the CCHR.

The mission of the CCHR is to improve the health and functioning of children by enhancing the quantity, quality, and use of research. The CCHR proposed to accomplish this mission, with its priority goal of improved child health, by 1) linking the study of social determinants to child health outcomes, 2) assessing the linkage of child health policy with pediatric practice, and 3) expanding and synthesizing the knowledge base underlying advances in child health. The CCHR will frame its endeavors in the context of interdisciplinary research and the integration of policy and practice. The following 3 priority objectives define the framework of the CCHR:

- To identify what is known but not being used or addressed in pediatrics to improve child health
- To identify critical questions and gaps in knowledge
- To develop and implement strategies to increase our knowledge base and better use that knowledge to shape social and clinical policies and practices

### TABLE 1. PROS Practitioner Demographics

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<th>Category</th>
<th>Percentage</th>
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<td>89% physicians, 10% nurse practitioners, and 1% physician assistants.</td>
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<td>93% report direct patient care as primary professional activity.</td>
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<td>More than 90% of time is spent in general pediatrics.</td>
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<td>PROS practitioners are similar in sex (female: 49%) and age (average: 45 years) to a random sample of AAP general pediatricians.</td>
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<td>PROS practices are more likely to be located in suburbs and rural areas and less likely to practice in urban areas than their AAP counterparts.</td>
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<td>Estimated race of patients is white (80%), African American (8%), Hispanic (8%), and other (4%).</td>
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The following set of roles and tasks were postulated for the CCHR to operationalize its efforts to accomplish the previously noted objectives and outcomes:

- Identify, with the research and funding communities, priority areas for child health research.
- Catalyze, coordinate, facilitate, and conduct research in priority research areas.
- Mentor young researchers.
- Develop measures for health services research.
- Operate the largest clinical research laboratory for children.
- Serve as an information resource.

As a method of defining priorities for the CCHR, consortia that engage experts from multiple disciplines have been convened by the CCHR to define its priorities, identify the critical questions in the field, and suggest research methods to address these questions. Initial consortia have been organized around the following areas:

- Income inequality and child health
- Unmet needs of children who are minorities (especially Latino)
- Tobacco use prevention
- Behavioral problems in children and youths

The success of the CCHR thus far has been defined by the extent and variety of initiatives in which it has engaged as a catalyst, convener, and an invited participant. Examples include the following:

- Children’s environmental protection initiative (contract with Environmental Protection Agency)
- PROS expansion project (expansion of PROS network to encompass children in inner cities, children from lower socioeconomic groups, and children who live in rural areas)
- Oral child health program (a response to a Request for Applications from the National Institute of Dental Research to remove disparities in oral health care)
- New Leaders Congress (a group of 50 young professionals selected from multiple disciplines and institutions initially brought together at the Child Health Conference at the University of Rochester, October 1999, to initiate cross-disciplinary communication and focus on the multiple determinants of child health and wellness)
- Involvement in a variety of longitudinal studies, including those being initiated by the Surgeon General’s office

The CCHR represents an exciting and comprehensive approach to child health research. The commitment of the CCHR to integrate research into the social, political, economic, behavioral, and environmental determinants of child health with health systems and traditional biomedical research represents a new model for the development of research programs by organized medicine and professional societies. As a multidisciplinary, independent research center, linked but functionally separate from the AAP, universities, and public agencies, it has a unique opportunity to exert important influence on public policy and clinical practice.

Funding to support this research agenda in community health presents a challenge, as such research in the United States has not constituted a significant portion of research dollars. Potential sources of funding do exist, including private foundations and a variety of federal agencies such as the MCHB, National Institute of Child Health and Human Development, Department of Housing and Urban Development, and Department of Agriculture. The Centers for Disease Control and Prevention is increasing its involvement in community health research in response to mandates to respond to the problems of obesity, tobacco use, and violence as public health issues. Similarly, the Environmental Protection Agency is attempting to enhance its role in defining and preventing adverse interactions between the environment and children. Engaging these resources in dialogue related to their priorities for the development of relevant research initiatives will be necessary to generate the support required to sustain this research agenda.

**CONCLUSIONS**

The CCHR and PROS initiatives provide a unique opportunity and model to link and further develop critical research efforts in the United States and the United Kingdom, in particular those of the AAP and RCPCH, to describe the multiple determinants and improve the global health of children. The CCHR consortia provide a ready opportunity and forum to facilitate the linking of researchers in the United States and the United Kingdom and to establish joint consortia. These international consortia then could define research priorities and methodologies of common interest to the United States and the United Kingdom, as well as other developed and developing countries. Practice networks, modeled after the PROS initiative, could be established in both countries to link and engage pediatricians and the AAP and the RCPCH in shared studies and to integrate differing research approaches into a common framework.

The selection of priorities for research is a powerful tool to define and influence public policy. Although rigorous research by competent professionals always will provide the basis for such efforts, the very definition of research priorities can be used as a way, in and of itself, to influence public policy. Fertile areas for potential joint research could be organized into the following framework.

Clinical questions that relate to the actual practice of child health in the United States and the United Kingdom could evaluate and define benchmarks for improving child health. These questions could focus on:

- Practical approaches to common problems in child health
- Expansion of current and introduction of new preventive health strategies
Significance and impact of anticipatory guidance and early childhood support on child health outcomes

Application of the human genome project

Ensuring distributive justice

The definition and introduction of new indicators and measures for assessing child health could be used to structure future child health endeavors and define the success of current and future programs. Examples could include:

- Use of an assets-based assessment of the capacities of communities and health systems to deal with priority child health issues
- The extent to which child rights and the Convention on the Rights of the Child can be used as the framework to define the critical determinants of child health and the assessment of a community’s progress toward realizing these rights

The study of the relationship between the organization and distribution of health services and child health could help to restructure current health systems and practices to better respond to contemporary issues affecting child health. The definition of the effect of poverty and income inequality on child health and strategies to minimize income inequality and mitigate its impact could provide the basis for relevant public policy. The study of the impact of globalization on child health, in developing and developed countries, could be used to understand and define the regional, national, and international structural adjustments necessary to improve child health.

New frameworks for community-based research will facilitate the interdisciplinary research necessary to define and respond to the importance of social as well as biological mechanisms that affect child health. The study of large populations of children and youths will facilitate the acquisition of meaningful epidemiologic data to support valid intervention and health systems research.

Linking the CCHR to research networks throughout Europe and Scandinavia could provide a mechanism to establish and sustain combined research, not just with the United Kingdom but also with colleagues across Europe, including Eastern Europe. The exploration of heterogeneity in interventions is among the great advantages to such research. We all have become adept at looking at validity but are not so good at defining the applicability of interventions. Implementation of these common protocols in different settings would be a powerful approach to exploring heterogeneity. Improvement in the practice of pediatrics also will be a direct outcome of these endeavors. The CCHR and the PROS provide a framework and opportunity to establish sustainable and productive joint research initiatives in the United States, in the United Kingdom, throughout Europe, and across other continents to improve the global health of children.

SUGGESTED READING

American Academy of Pediatrics PROS (Pediatric Research in Office Settings) web site. Available at: http://www.aap.org/pros


