

MCH RESEARCH EXCHANGE

THE PEDIATRIC EMERGENCY CARE APPLIED RESEARCH NETWORK

Unlike the well-established infrastructure for conducting clinical trials in other areas of pediatric medicine, the infrastructure for conducting such trials in the field of pediatric emergency care is undeveloped. Therefore, in an effort to establish an infrastructure to help health professionals in the field move toward evidenced-based decision-making, the Maternal and Child Health Bureau (MCHB) recently initiated the Pediatric Emergency Care Applied Research Network (PECARN)—a joint effort of the MCHB Research Program and MCHB’s Emergency Medical Services for Children (EMSC) program. Through the PECARN, MCHB has awarded 3-year cooperative agreements to four regional nodes. Together, the staff of the research and EMSC programs developed the guidance for submitting proposals for these cooperative agreements as well as the request for proposals, and they are now combining their skills to effectively administer the cooperative agreements.

The EMSC program is jointly administered by MCHB within the Health Resources and Services Administration, Department of Health and Human Services, and the Office of Traffic Injury Control Programs within the National Highway Traffic Safety Administration, Department of Transportation. This federal initiative evolved out of a growing recognition that—because children and adults are developmentally, physiologically, and psychologically different—children’s needs in emergency situations often differ from those of adults.

The goal of the EMSC program is to reduce child and adolescent morbidity and mortality resulting from severe illness or trauma by supporting injury prevention programs and improvements in the quality of child and adolescent medical care. The EMSC program does not promote the development of a separate emergency medical care system (EMS) for children and adolescents but rather focuses on enhancing the pediatric capability of EMS systems originally designed primarily for adults. “EMS” is here understood to include the following components: prevention, prehospital EMS care, hospital-based care, rehabilitation, and reentry of the child or adolescent into the community.

The EMSC program supports initiatives in areas such as (1) childhood injury prevention, (2) development of clinical protocols and practice guidelines, (3) creation of training curricula and products, (4) data collection and analysis to support injury surveillance and quality improvement in pediatric emergency care, (5) pediatric facility designation guidelines or hospital recognition programs, (6) equipment standards, (7) model patient transfer agreements, (8) model regulations, and (9) demonstration programs for special populations.

The first objective of the PECARN is to establish a research network consisting of the four regional nodes. Each node will include applied pediatric EMS research centers designed to expand and improve EMS for children and adolescents who need treatment for trauma and/or critical care. A regional node will consist of a regional node center (RNC) and multiple hospital emergency department affiliates (HEDAs). The RNC will be the coordinating arm of each node and will maintain a research partnership with the HEDAs in the node.

The second objective of the PECARN project is to demonstrate that (1) a well-conceived and fully operational infrastructure can be put in place to conduct clinical trials and observational studies on EMSC, using rigorous study designs and methodologies;

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NINE NEW RESEARCH PROJECTS FUNDED IN FY 2001

Nine new research applications reviewed by the MCHB Research Grants Review Committee in FY 2001 were recommended for approval and subsequently funded by MCHB. The first-year awards totaled \$2,987,191.

A short description of each of the nine new projects follows:

Improved Prenatal Down Syndrome Screening: PAIRED Testing. The current standard of care in the United States, the triple test (alpha fetoprotein [AFP], unconjugated estriol [uE3], and human chorionic gonadotrophin [hCG]), identifies 69 in every 1,000 women as being at high risk for having an infant with fetal Down syndrome. This demonstration project will develop, test, and validate an improved approach to serum screening for fetal Down syndrome. With this method, the best first- and second-trimester maternal serum biochemical markers are combined (PAIRED serum test) to identify women at sufficient risk in the second trimester to warrant amniocentesis and karyotyping. If successful, the PAIRED test will provide a high-performance screening method that can be

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ARTICLES PUBLISHED BY RESEARCH GRANTEES

The findings of a number of research studies supported by MCHB have been published in peer-reviewed journals in calendar year 2001. Twelve of 34 articles are summarized below to reflect the range of MCHB research projects; the remaining articles are listed in citation format so that readers may retrieve items of interest.

Vagal Reactivity and Affective Adjustment in Infants During Interaction Challenges

Bazhenova et al. evaluated respiratory sinus arrhythmia (RSA) and heart period in 5-month-old infants (N = 40) during interaction challenges requiring affective adjustment. The paradigm consisted of four experimental conditions designed to elicit behavioral and autonomic responses to object-mediated (Picture Attention and Toy Attention) and person-mediated (Still Face and Social Interaction) engagement. The data demonstrated that autonomic state systematically changed during engagement and disengagement with the environment. During the object-mediated challenge, increases in RSA were uniquely related to positive engagement. During the person-mediated challenge, there was a more complex integration of autonomic and behavioral responses characterized by concordant increases and decreases in RSA, heart period, positive engagement, negative affect, and motor activity. When participants were partitioned into two groups based on their RSA response pattern during the person-mediated challenge, only participants who exhibited a pattern of RSA decrease from Toy Attention to Still Face followed by a rapid recovery during Social Interaction demonstrated regulation of behavioral activity, including concordant recovery from stress. These findings provide additional empirical support for the role of vagal regulation of the heart in the modulation of affective adjustment and engagement behavior. *Child Development* 72(5):1314-1326.

Home and Videotape Intervention Delays Early Complementary Feeding Among Adolescent Mothers

Black et al. evaluated the efficacy of an intervention to delay the early introduc-

tion of complementary feeding among first-time, black, adolescent mothers living in multigenerational households. The intervention focused on reducing the cultural barriers to accepting the recommendations of the American Academy of Pediatrics, the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), and the World Health Organization on complementary feeding by highlighting three topics: (1) recognition of infants' cues, (2) nonfood strategies for managing infants' behavior, and (3) mother-grandmother negotiation strategies. The intervention was delivered through a mentorship model in which a videotape made by an advisory group of black adolescent mothers was incorporated into a home-visiting program and evaluated through a randomized, controlled trial.

One hundred eighty-one first-time, low-income, black mothers who were less than 18 years old and were living in multigenerational households were recruited from three urban hospitals. Infants were born at term, with birth weight appropriate for gestational age and no congenital problems. Shortly after delivery, mothers and grandmothers completed a baseline assessment, and mothers were randomized

into an intervention group or a control group. Intervention group mothers received home visitation every other week for 1 year. At 3 months, a subset of 121 of the mothers reported on their infants' intake through a food-frequency questionnaire. Mothers who fed their infants only breastmilk, infant formula, or water were classified as optimal feeders. Mothers who provided complementary foods other than breastmilk, infant formula, or water were classified as less-optimal feeders.

Sixty-one percent of the infants received complementary foods before they reached 3 months of age. Multivariate hierarchical logistic regression was used to evaluate the determinants of being in the optimal- vs. the less-optimal-feeders group. After controlling for infant age and family income, mothers of infants in the optimal-feeders group were more likely to accurately report messages from WIC regarding the timing of complementary food and nearly four times more likely to be in the intervention group. The most common complementary food was cereal mixed with infant formula in the bottle.

The success of this relatively brief intervention demonstrates the importance of
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MCH RESEARCH EXCHANGE

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Pediatric Emergency Care Applied Research Network

(2) a consensus-driven and well-informed research agenda can be developed and used to actively guide the network's activities; (3) a research-and-development process can be implemented within the network to develop proposals, conduct pilot studies, and carry out investigations, with support from MCHB and/or other federal agencies; (4) a plan to study, enable, and encourage the transfer of network findings to EMSC practices can be designed and implemented; and (5) collaboration between EMSC health professionals and researchers can be fostered, and such collaboration will provide opportunities for an exchange of ideas, information, and

values between the treatment and academic communities.

The following four regional nodes have been awarded a total of \$2.4 million through the PECARN project for FY 2001: the Regents of the University of California, University of California, Davis, Medical Center (principal investigator: Nathan Kuppermann, M.D.); the Children's Research Institute, Washington, DC (principal investigator: James Chamberlain, M.D.); the Regents of the University of Michigan, Ann Arbor, MI (principal investigator: Ronald Maio, M.D.); and the Columbia University—Harlem Hospital Center, New York, NY (principal investigator: Nadine Levick, M.D.). ○

mothers. There is, however, a lack of consistent policies and procedures concerning the recruitment, training, and counseling phases of peer counseling within and across state WIC agencies.

Journal of Human Lactation 17(2):119–125.

Short-Term Cardiovascular Effects of Methylphenidate and Adderall

Findling et al. examined the cardiovascular effects of Adderall (ADL) in a clinic-based group of children and adolescents ages 4 through 17 years with attention-deficit/hyperactivity disorder.

One hundred thirty-seven of the children and adolescents were treated with either methylphenidate (MPH) or ADL. Those prescribed MPH received medication twice daily, and those treated with ADL received medication once daily. The children and adolescents were evaluated under five conditions: baseline, placebo, 5 mg per dose, 10 mg per dose, and 15 mg per dose. Resting pulse, diastolic blood pressure, and systolic blood pressure were examined after 1 week at each treatment condition. Changes from baseline on these parameters were examined.

The short-term cardiovascular effects of both ADL and MPH were modest. None of the children and adolescents experienced any clinically significant change in these cardiovascular measures during the course of this brief trial. The researchers concluded that since the short-term cardiovascular effects of ADL seemed minimal, specific cardiovascular monitoring during short-term ADL treatment at doses of 15 mg per day or less does not appear to be indicated. In addition, under similar conditions, using similar methods, both medication treatments led to changes in blood pressure and pulse that were clinically insignificant.

Journal of the American Academy of Child and Adolescent Psychiatry 40(5):525–529.

Randomized Trial of Enhanced Anticipatory Guidance for Injury Prevention

Gielen et al. developed and evaluated an injury prevention anticipatory guidance training program for pediatric residents.

Thirty-one residents were randomly assigned to an intervention or control — *continued on page 9*

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Articles Published by Research Grantees

using ecological theory and ethnographic research to design interventions that enable participants to alter their behavior in the face of contradictory cultural norms. The intervention focused on interpreting infants' cues, nonfood methods of managing infant behavior, and mother-grandmother negotiations. It was delivered through methods that were familiar and acceptable to adolescent mothers—a mentorship model incorporating home visits and a videotape. The skill-oriented aspects of the intervention delivered in a culturally sensitive context may have enabled the young mothers to follow the guidelines that they received from WIC and from their pediatricians. Strategies such as those used in this intervention may be effective in promoting other caregiving recommendations, thereby enabling providers to meet the increasing demands from parents for advice about children's early growth and development.

Pediatrics Electronic Pages 0107(5):E67.

Breastfeeding Peer Counseling: Rationale for the National WIC Survey

Bronner et al. provided a literature review demonstrating the effectiveness of

peer counseling in health care settings, especially those concerned with breastfeeding. In addition, barriers identified in the literature that limit the integration of peer counseling in medical settings were examined. The need for the National WIC Breastfeeding Peer Counselor Survey and background information about this survey were also discussed.

Journal of Human Lactation 17(2):135–139.

Breastfeeding Peer Counseling: Results from the National WIC Survey

Bronner et al. examined breastfeeding peer counseling within the context of the organizational structure of state and local WIC agencies. The National WIC Breastfeeding Peer Counselor Survey was distributed to a convenience sample of state WIC breastfeeding coordinators and breastfeeding project coordinators and to a sample of local agency WIC directors and staff, breastfeeding peer counselor coordinators, and peer counselors. The findings indicate that respondents in the WIC state and local organizations perceive peer counseling to be effective in promoting and sustaining breastfeeding among WIC

AN ANALYSIS OF SELECTED PERFORMANCE INDICATORS: ACTIVE PROJECTS FY 1998-99

Characteristics of Active Research Projects

Recipients of MCHB research grants are predominantly institutions of higher learning (70 percent), compared with children's hospitals and other research hospitals (20 percent) and other grantees (10 percent). Within institutions of higher learning, schools of medicine and schools of public health constitute 48.6 percent of the research grantees. Other subdivisions within institutions represent 51.4 percent of the research grantees.

During FY 1998 and FY 1999, no state, county, or city health department received a grant through the MCHB Research Program, reflecting the small number of research applications submitted annually by these government entities. It is clear that much needs to be done to increase the level of participation by state, county, and city health departments in the MCHB Research Program.

The geographic distribution of the funded applicants favors federal regions in the Atlantic and Midwest. During FY 1998 and FY 1999, only one grant was awarded to an institution in regions VI, VII, and VIII. The factors that create unbalanced award distributions according to geographic region are difficult to pinpoint. However, geographic distribution is highly related to concentrations in population and wealth, which in turn are related to corresponding concentrations of institutions of higher learning as well as research and development centers.

During FY 1998 and FY 1999, approximately 58.3 percent of the principal investigators funded through the MCHB Research Program are Ph.D.s and 33.3 percent are M.D.s. Two investigators earned a joint M.D./Ph.D. degree. The M.D./Ph.D. disparity is typical of federal extramural research programs in biomedical and health services. The traditional public health degrees, Sc.D. and Dr.P.H., are represented by about 6 percent of the principal investigators. The low percentage of degrees in the public health category is due, in part, to the relatively small number of such degrees awarded nationally. In total, 48 principal investigators have undertaken the research described in the

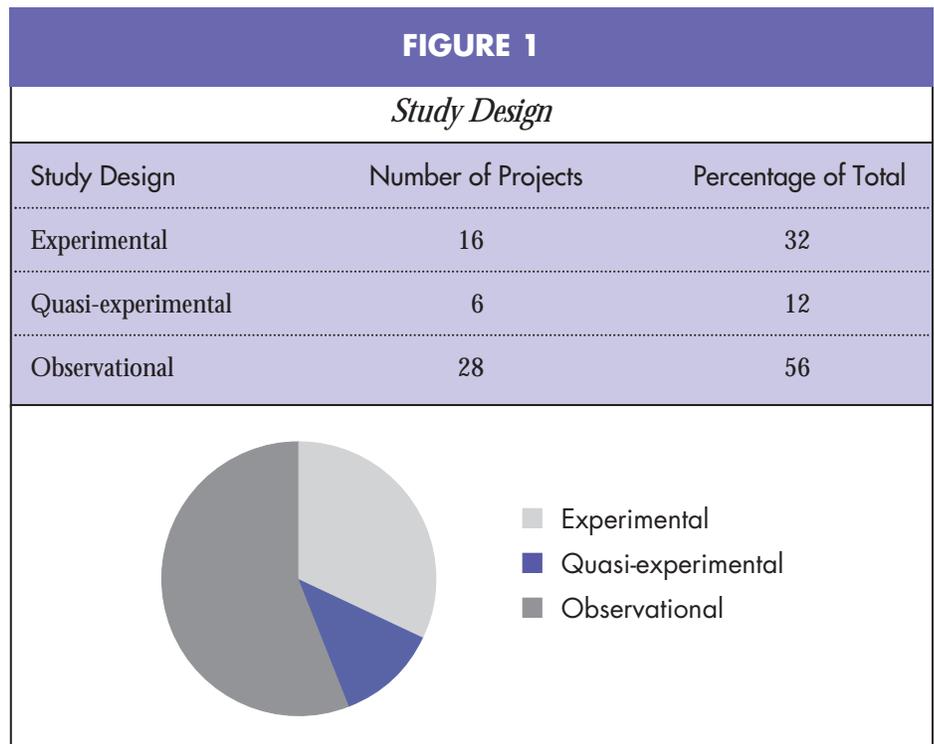
50 projects. More women (64.6 percent) than men (35.4 percent) received MCHB research grants in FY 1998 and FY 1999.

Figure 1 presents the 50 active projects according to three study design characteristics: experimental, quasi-experimental, and observational. The experimental category includes randomized clinical control trials; the quasi-experimental category includes case/matched control, case/unmatched control, case/historical control, and inter-

dinal studies and reflect the nature of the research supported by the program. This research, for the most part, is concerned with characterizing, defining, and measuring risk factors for unwelcome outcomes. This type of research requires that the agent or exposure thought to define risk precede the outcome of concern.

Figure 3 shows the 50 active projects according to care emphasis. The care emphasis distinguishes projects that are

FIGURE 1



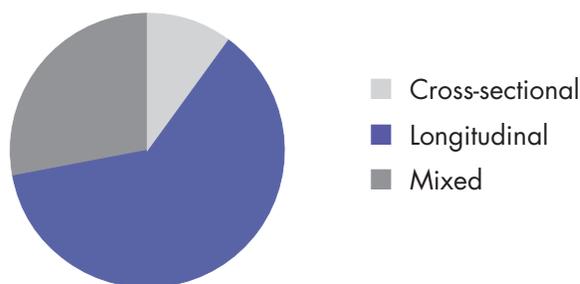
rupted time-series studies. Observational design studies are purely descriptive or correlational. Forty-four percent of the active projects employ either an experimental or quasi-experimental study design; the remaining 56 percent are observational. These percentages indicate a high degree of scientific rigor for the research supported by the MCHB Research Program.

A high degree of scientific rigor is also reflected when the time dimension of the study design is taken into consideration. As Figure 2 indicates, during FY 1998 and FY 1999, the majority (62 percent) of the projects funded by the MCHB Research Program were longitudinal. These included short-term as well as long-term longitu-

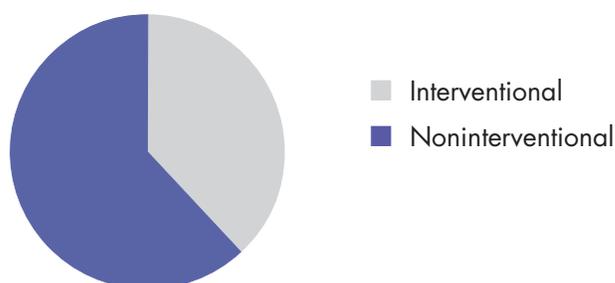
interventional from those that are non-interventional in nature. In medicine and public health, intervention is used for a variety of activities designed to prevent, limit, or improve conditions in order to enhance the health of individuals and groups. As a group, intervention studies address a variety of MCH problems and represent an inadequately tapped resource of tested approaches to solving MCH problems at the state and community levels. In the FY 1998 and FY 1999 cycles, 38 percent of the projects are interventional in nature. The majority of the interventional studies are preventive rather than remedial or curative in intention; most of these projects use experi-

FIGURE 2*Time Design*

Time Design	Number of Projects	Percentage of Total
All time designs	50	100
Cross-sectional	5	10
Longitudinal	31	62
Mixed	14	28

**FIGURE 3***Care Emphasis*

Care Emphasis	Number of Projects	Percentage of Total
All Care emphases	50	100
Interventional	19	38
Noninterventional	31	62



Research grants are routinely tracked to determine whether they have a racial/ethnic focus. Projects are classified as such if the investigators have stated that they seek to elucidate some aspect of the health of minority women and children, using either a within-group or a between-group study design. Of the 50 projects, 26 (52 percent) have a racial/ethnic focus. Of the 26 projects having a racial/ethnic focus, 19 use a group-specific study design, and 7 use a between-group study design. Twenty-four of the projects (48 percent) have no stated racial or ethnic focus. However, some of these projects have sufficient numbers in their samples to conduct minority analyses, and the principal investigators of these projects have been so informed.

The research projects having a racial/ethnic focus are predominantly studying African-American populations. Seventeen of the 26 projects with a racial/ethnic focus have identified African Americans as one or more of their minority study populations. Two of the projects focus on Mexican Americans, two projects focus on Puerto Ricans, and two projects focus on Native Americans. However, more research needs to be conducted to elucidate MCH concerns among Alaskan Native, Chinese, Japanese, Pacific Islander, and Hawaiian Native populations.

Research projects are also tracked according to the specific Healthy People 2000 objectives addressed by each study. The number of objectives addressed by the project ranged from zero to 18. (This does not imply that projects addressing fewer objectives are less rigorous or of less interest to the MCH community.) Fourteen of the 50 projects address Healthy People 2000 objectives in maternal and infant health; 10 address objectives in mental health and mental disorders; 10 address objectives in violent and abusive behavior; and 9 address objectives in diabetes and disabling conditions.

Summary and Conclusions

The distribution of active projects by geographic region and by type suggests that an initiative is needed to generate strong applications from certain regions of the country as well as from state, county, and local health departments.

Information on the study design indicates a high degree of scientific rigor in the research studies supported by the

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mental designs with blind measurements and employ standardized protocols for delivering and monitoring the array of services constituting the interventions.

Many of the active projects focused on more than one population (e.g., infants and toddlers) within the same scope of

research. Of the 50 projects active in FY 1998 and FY 1999, 17 (34 percent) chose infants as a population focus. Twenty-nine projects (58 percent) studied populations of parents, mothers, and fathers. Only one project focused on pregnancy in an adolescent population.

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Analysis of Performance Indicators

MCHB Research Program. This is corroborated by the high rate of publications per project and the quality of the peer-reviewed journals publishing findings from the research projects supported by the MCHB Research Program. The number of intervention projects represented suggests that the MCHB Research Program is fulfilling its responsibility to develop new program components for MCHB. Efforts should be expanded to

increase both the awareness and adoption of these research-tested interventions at state, county, and local levels.

Data on the racial/ethnic focus of the active projects support the conclusion that the MCHB Research Program has made progress in addressing the health of minority mothers and children, particularly among African-American populations. Although more research studies are needed to address the MCH concerns of other minority populations, this should not obscure the fact that the MCHB Research Program provides crucial support for research in minority health issues.

The diversity of the populations being studied in the 50 projects indicates that the MCHB Research Program is funding a broad portfolio of research, with projects focusing on populations throughout the developmental continuum as well as on maternal and women's health issues. The number of *Healthy People 2000* objectives addressed by the current projects attests to the fact that MCH is a multidisciplinary, cross-cutting field encompassing education, nutrition, mental health, chronic disabling conditions, and other areas of special interest to the MCH research community. ○

PRODUCTS GENERATED BY RESEARCH PROJECTS COMPLETED IN 1994-98

As part of its routine program monitoring activities, the MCHB Research Program asks principal investigators to report, for each research project completed, the number and types of products generated (e.g., presentations at professional meetings, articles published in peer-reviewed journals, books or chapters published, abstracts published, doctoral dissertations). The first reporting is part of the final report, a requirement for receiving federal research grant awards. Since a period of 1 to 5 years is needed to fully analyze the data collected in an investigation, a special follow-up query takes place 5 years after the study's completion to capture any additional products. For peer-reviewed articles, the principal investigators are also asked to provide the titles and publication dates of the journals that published their articles. The review process includes locating a sample of the reported publications, then reading the articles to determine whether the content corresponds to the research questions on record for the project. Although imperfect, such indicators as the number and types of products generated and the types of journals that published the research findings provide valuable clues to the quantity and quality of the products generated by the MCHB Research Program.

Table 1 shows that the projects in the completed portfolio are producing many products. The products were generated by the MCHB completed research projects that submitted final reports during the

past 5 years (43 projects). In total, these research projects generated 675 products. Of the products reported, 46.5 percent

were presentations at professional meetings and conferences, 27.3 percent were articles published in peer-reviewed jour-

TABLE 1

Type and Number of Products Generated by MCHB-Supported Research, Based on Final Reports and Follow-up Queries: 1994-98

Type of Products	1994	1995	1996	1997	1998	Total
Presentations	25	116	70	60	43	314
Peer-reviewed published articles	17	57	39	28	43	184
Chapters in book	2	20	9	5	3	39
Books/reports	1	2	2	1	1	7
Abstracts	15	44	35	19	9	122
Dissertations	0	0	3	0	2	5
Other products	0	4	0	0	0	4
Total no. products	60	243	158	113	101	675
Average no. products per project	20	15	23	23	8	16
Average no. peer-reviewed published articles per project	6	4	6	6	4	4

nals, and 18.1 percent represented abstracts. Notably, 184 articles on MCHB-supported research were published in peer-reviewed journals, averaging slightly more than 4 journal articles per project; 122 abstracts were published by the projects submitting final reports in the last 5 years, an average of 2.8 abstracts per project. The principal investigators delivered 314 presentations on their research, averaging 7 presentations per project. In addition, 7 books and reports and 39 book chapters were developed as a result of the MCHB-funded research. Five dissertations were also produced. These data indicate that the products of MCHB-funded research are being disseminated in a variety of ways, including publication in peer-reviewed journals, indicating a high degree of scientific rigor and quality.

The types of journals in which MCHB research findings are published are also important. Of the 184 peer-reviewed arti-

cles included among the products in the last 5 years, 81 articles (44 percent of the peer-reviewed publications) appeared in medical journals. Of these 81 articles, 16 were published in general medical journals, 56 in pediatric medical journals, and 9 in obstetric/gynecologic journals. In addition, 55 articles were published in journals with a behavioral focus—21 in general behavioral journals and 34 in pediatric behavioral journals. The remaining 48 articles were published in journals representing a broad spectrum of disciplines and focuses.

Table 2 shows that grantees published their results in highly acclaimed journals with rigorous peer-review procedures. The largest number of MCHB research articles (20) were published in the journal *Pediatrics*. The *Journal of Pediatrics* also published 10 articles by grantees. Six articles were published in *Child Development* and six were published in *JAMA: The Journal of the American Medical Association*. ○

Continued from page 1 Nine Projects Funded

used in all types of primary care practices in rural and urban settings.

Principal Investigator: *George J. Knight, Ph.D., Foundation for Blood Research, P.O. Box 190, 69 U.S. Route One, Scarborough, ME 04070-0190. Telephone: (207) 883-4131; e-mail: gknight@fbr.org.*

PRWORA and Low-Income Women's Insurance and Prenatal Care Use.

The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 has reduced welfare caseloads nationwide. However, it may have also affected the financing of prenatal care and prenatal care use. This study proposes to use data from the Centers for Disease Control and Prevention's Pregnancy Risk Assessment Monitoring System from nine states for the years 1994 through 1999 to examine the impact of PRWORA on Medicaid and private insurance coverage as well as on the use of prenatal care by low-income women.

Principal Investigator: *Arden S. Handler, Dr.P.H., University of Illinois at Chicago, School of Public Health, 1603 West Taylor, Chicago, IL 60612. Telephone: (312) 996-5954; e-mail: handler@uic.edu.*

Infant Functional Status and Discharge Management.

Discharge algorithms for premature infants are controversial, in part because they determine the allocation of significant resources, in part because discharge decisions often place families and physicians at odds with insurers, and in part because of a lack of information about the relationship between infant physiologic status at discharge and subsequent resource use and outcomes. This study seeks to determine whether there are a range of discharge algorithms in which longer hospital stays may result in reduced overall resource use. Results from the study will ultimately provide important information relating physiologic status to outcomes and cost so that more rational discharge algorithms can be developed.

Principal Investigator: *Jeffrey H. Silber, M.D., Ph.D., Children's Hospital of Philadelphia, Center for Outcomes Research, 3535 Market Street, Suite 1029, Philadelphia, PA 19104. Telephone: (215) 590-2540; e-mail: silberj@wharton.upenn.edu.*

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TABLE 2

Number and Percentage Distribution of Peer-Reviewed Articles Generated by MCHB-Supported Research by Type of Journal, 1994–98

Type of Journal	No. of Articles	Percentage
Medical	81	44.0
General	16	8.7
Pediatrics	56	30.4
Obstetrics/Gynecology	9	4.9
Behavioral	55	29.9
General	21	11.4
Pediatrics	34	18.5
Epidemiology	11	6.0
Nursing	1	5
Allied health professionals	17	9.2
Basic, laboratory, and clinical services	19	10.3
TOTAL	184	100.0

Nine Projects Funded

Growth and Development Longitudinal Follow-Up: Phase 2. Pediatric obesity is a serious public health problem that is increasing in prevalence, particularly among minority children from low-income families. The goals of this study are to prevent obesity rates from increasing by developing, implementing, and evaluating a health-promotion program that emphasizes diet and physical activity appropriate for low-income, urban, African-American adolescents ages 13 through 15. The study will (1) examine the ethnotheories of body size, diet, and physical activity and the opportunities to eat a healthy diet and engage in physical activity at home, in school, and in communities and (2) using gathered information, develop home-based intervention protocols. The study will employ a randomized controlled trial to implement and evaluate the health promotion interventions. Using longitudinal analytical strategies, the study will also examine changes in outcome measures in relation to genetic factors (e.g., parental weight and height) and environmental and psychological factors from constructs proposed by the underlying theories and ethnographic research.

Principal Investigator: *Maureen M. Black, Ph.D., University of Maryland School of Medicine, Department of Pediatrics, 655 W. Lombard Street, Room 311, Baltimore, MD 21201. Telephone: (410) 706-5289 or (410) 706-2136; e-mail: mblack@peds.umaryland.edu.*

Epidural and Intrapartum Fever: A Randomized Trial. While the association of epidural with fever has been reported in several studies, it remains controversial. This randomized trial will investigate the effects of epidural use on intrapartum temperature in low-risk women. Since epidural is such an integral part of practice, and since its benefits for pain relief are so clear, it is critical that the etiology, physiologic correlates, and clinical consequences of epidural-related fever be understood so that women can make informed decisions about pain relief. Findings may also suggest effective methods for prevention or treatment of epidural-related fever and its consequences.

Principal Investigator: *Ellice Lieberman, M.D., Dr.P.H., Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115. Telephone: (617) 278-0700; e-mail: elieberman@partners.org.*

Enhancing Breastfeeding Duration in Premature Infants. Preliminary findings suggest that the neonatal intensive care unit (NICU) environment exacerbates all problems associated with low breastfeeding rates among underprivileged groups. Research shows that peer counselors increase breastfeeding duration in a population of low-income full-term infants, but counselors have not been used in the NICU setting. This randomized clinical trial will determine whether peer counselors increase breastfeeding duration among low-income women with premature infants.

Principal Investigator: *Barbara L. Philipp, M.D., Boston Medical Center Corporation, Boston University School of Medicine, Division of General Pediatrics, Maternity Building, Fourth Floor, 91 East Concord Street, Boston, MA 02118. Telephone: (617) 414-5202; e-mail: bobbi.philipp@bmc.org.*

Intergenerational Pathways to Competence in Minority Families. Data currently exist across the early childhood and elementary school years of the adults who participated in the randomized trials of two early childhood intervention projects, Abecedarian and CARE. The study's goal is to determine the extent to which early childhood intervention is associated with better adult adaptation for those individuals who participated in either of the two intervention projects. A second goal is to explore intergenerational effects in relation to children born to individuals who participated in the early intervention projects.

Principal Investigator: *Frances A. Campbell, Ph.D., University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Center, UNC-CH, CB #8180, 105 Smith Level Road, Chapel Hill, NC 27599-8180. Telephone: (919) 966-4529; e-mail: campbell@mail.fpg.unc.edu.*

Prehospital Arrest Survival Evaluation: Pediatric PHASE. Information is needed to better define the causes, processes, and outcomes of pediatric resuscitation and to allow for the planning of interventions and for new research to improve the outcomes of pediatric resuscitation. This population-based, prospective, observational study aims to determine the incidence of interventions and complications, and the outcome of all children under age 18 years of age receiving resuscitation (assisted ventilation or cardiopulmonary resuscitation [CPR]) in New York City by New York City Fire Emergency Medical Services personnel over a 12-month period. The project will add a large, prospective, population-based cohort study with "the Pediatric Utstein" uniform-data reporting style to the limited literature on resuscitation of children

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GUIDANCE AND APPLICATION FORMS ON THE WEB

Interested applicants can download the research program's grants guidance and application forms electronically. These materials can be accessed through the Maternal and Child Health Bureau home page at www.mchb.hrsa.gov/html/grantsguidance.html. Hard copies can be obtained from the Health Resources and Services Administration Grants Application Center at (877) 477-2123 or from the MCH Research Program office at (301) 443-2190.

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Nine Projects Funded

(an area in which there is a great need for investigation) and will generate more hypotheses for further research.

Principal Investigator: *George L. Foltin, M.D., New York University School of Medicine, 550 First Avenue, New York, NY 10016. Telephone: (212) 562-3161; e-mail: gf16@nyu.edu.*

Early Detection of Autism: Comparison of Three Screening Instruments.

Autism and other pervasive developmen-

tal disorders (PDDs) are severe disorders of development that often lead to lifelong disability. Early detection and intervention can substantially improve the prognosis for individuals with PDDs; however, with available screening instruments, early detection is difficult. Diagnosis and intervention often follow initial suspicion by 3 years or more. The proposed study involves the comparison of five parent-checklist screening instruments for 24-month-olds. The study should greatly

advance the development of an effective early screening tool for autism and related PDDs. Planned future studies include replication in other states and cross-cultural comparisons in countries other than the United States (e.g., Japan).

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group. Both groups attended a 1-hour seminar about injury prevention and received materials from the American Academy of Pediatrics Injury Prevention Program. The intervention group also received 5 hours of experiential instruction on injury prevention content and counseling skills (SAFE Counseling Framework). Families with infants ages birth to 6 months were enrolled in the study (N = 196); they were followed up until the child was 12 to 18 months of age.

Data were collected by means of baseline and follow-up interviews, audiotapes of medical visits, parent exit surveys, and home observations. The setting was a hospital-based community clinic that serves families living in low-income, inner-city neighborhoods. Outcomes included physician counseling and parent satisfaction, knowledge, beliefs, and behaviors.

Parents seen by physicians in the intervention group received significantly more injury prevention counseling for five of the six safety practices, and they were significantly more satisfied with the help their physicians provided on safety topics. They were no less satisfied with their physicians' counseling on other anticipatory guidance topics. Parents' knowledge, beliefs, and home safety behaviors did not differ between the two groups. The researchers concluded that the frequency and impact of pediatric counseling can be

enhanced by experiential training that targets specific injury hazards. Because low-income families face many barriers to carrying out recommended safety practices, supplemental strategies are needed to ensure safer homes.

Archives of Pediatrics and Adolescent Medicine 155(1):42-49.

The Effect of Plasma Human Immunodeficiency Virus RNA and CD4(+) T Lymphocytes on Growth Measurements of Hemophilic Boys and Adolescents

Hilgartner et al. examined the associations of plasma human immunodeficiency virus (HIV) RNA and CD4(+) T lymphocytes with height, weight, skeletal maturation, testosterone levels, and height velocity for hemophilic boys and male adolescents with HIV infection in the Hemophilia Growth and Development Study. For this study, researchers evaluated 207 participants over 7 years.

A threefold increment in baseline plasma HIV RNA was associated with a 0.98-cm decrease in height and a 1.67-kg decrease in weight; 100-cells/microL decrements in baseline CD4(+) were associated with a 2.51-cm decrease in height and a 3.83-kg decrease in weight. Participants with high plasma HIV RNA (>3125 copies/mL) experienced significant delay in achieving maximum height velocity and had lower maximum velocity compared with those with low viral load. The high

CD4(+) (>243)/low plasma HIV RNA group had earlier age at maximum height velocity compared with the other three groups and higher maximum height velocity compared with the low CD4(+)/high plasma HIV RNA and low CD4(+)/low plasma HIV RNA groups. Decrements in CD4(+) were associated with decreases in bone age and testosterone level.

The researchers concluded that CD4(+) and HIV RNA are important in predicting growth outcomes.

Pediatrics Electronic Pages 107(4):E56.

Maternal Outcomes of a Randomized Controlled Trial of a Community-Based Support Program for Families of Children with Chronic Illnesses

Ireys et al. evaluated maternal outcomes of a family-support intervention for families of children with selected chronic illnesses. The study was designed as a randomized controlled clinical trial with repeated measures 1 year apart. The setting was a 15-month community-based family-support intervention (the Family-to-Family Network) that was linked to subspecialty and general pediatric clinics and practices in a metropolitan area.

Participants included a population-based sample of 193 mothers of children ages 7 to 11; the children were diagnosed as having diabetes, sickle cell anemia, cystic fibrosis, or moderate to severe asthma.

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About 15 percent of the mothers contacted refused to participate in the research, and 14 percent of the families were lost to follow-up.

The intervention was designed to enhance mothers' mental health by linking mothers of school-age children with selected chronic illnesses with mothers of older children with the same chronic illnesses. The intervention included telephone contacts, face-to-face visits, and special family events. Main outcome measures included the Beck Depression Inventory and the Psychiatric Symptom Index.

Maternal anxiety scores for participants in the experimental group decreased during the intervention period for all diagnostic groups and for the total group; scores for the control group increased ($F = 5.07$, $P = .03$). In multiple regression analyses, being in the intervention group was a significant predictor of posttest anxiety scores ($P = .03$). Effects were greater for mothers with high baseline anxiety ($P < .001$) and for those in poor health ($P < .01$).

The researchers concluded that a family-support intervention can have beneficial effects on the mental health status of mothers of children with chronic illnesses. This type of intervention can be implemented in diverse pediatric settings. *Archives of Pediatrics and Adolescent Medicine* 155(7):771-777.

Beyond the Unobtrusive Observer: Reflections on Researcher-Informant Relationships in Urban Ethnography

Lawlor et al. noted that ethnographic research involves the creation and ongoing renegotiation of relationships between researchers and informants. Prolonged engagement contributes to the complexity as relationships deepen and shift over time and participants accumulate a substantial reservoir of shared experiences. The researchers pointed out that reflections on the relationships they have co-constructed with informants in several research projects have contributed to the researchers' identification of several critical aspects of building and maintaining researcher-informant relationships in cross-cultural research. The study dis-

cussed aspects of relationship work specifically related to conducting ethnography with children, within the communities in which researchers live, and within the practice of occupational therapy.

American Journal of Occupational Therapy 55(2):147-154.

Maximum Likelihood Inference for Left-Censored HIV RNA Data

Lynn noted that left-censored data are characteristic of many bioassays because of the inherent limit of detection and limit of quantitation (LOQ) in the assays. Lynn examined the way the left-censoring of plasma HIV RNA measurements, collected for the Hemophilia Growth and Development Study, affects the quantification of viral load and the assessment of its association with a continuous or dichotomous outcome. Data analyses using maximum likelihood estimation were compared to analyses where the LOQ or LOQ/2 value was substituted for the left-censored observations, and also to other analytical methods (e.g., multiple imputation). A Gaussian distribution was assumed for the log-transformed plasma HIV RNA data, and simulations were used to explore the sensitivity of the results to changes in the model parameters. The robustness of the estimators was also investigated when the data were generated from a mixture of two Gaussian distributions. Maximum likelihood was in general the least biased method. However, multiple imputation assuming a censored Gaussian imputation model and substituting the censored values with the expectation of its conditional predictive distribution were also competitive with maximum likelihood and may be appealing because of their simpler computational algorithms.

Statistics in Medicine 20(1):33-45.

Early Childhood Otitis Media in Relation to Children's Attention-Related Behavior in the First Six Years of Life

Minter et al. examined whether otitis media with effusion (OME) and associated hearing loss during the first 4 years of life were related to parents', teachers', and clinicians ratings of children's atten-

tion and behavior in the first 6 years of life.

In a prospective study, 85 black children were recruited from community-based child care programs when they were between the ages of 6 and 12 months. OME and hearing status were monitored repeatedly when they were between the ages of 6 months and 4 years. Measures of attention and behavior were collected from parents, teachers, and clinicians when the children were infants, preschoolers, and first graders.

The researchers found that, on average, children experienced either bilateral or unilateral OME 30 percent of the time and hearing loss 19.9 percent of the time when they were between 6 months and 4 years old. Descriptive and inferential analyses revealed no significant associations between OME or hearing loss and the measures of attention or behavior completed by parents, teachers, and clinicians. The researchers concluded that, in this sample of children, there was no relationship between amount of early childhood OME or hearing loss and measures of attention or behavior in the first 6 years of life as reported by parents, teachers, and clinicians.

Pediatrics 107(5):1037-1042.

Characteristics of Vegetarian Adolescents in a Multiethnic Urban Population

Perry et al. examined the prevalence of adolescents' vegetarianism in a multiethnic, urban population, and the vegetarianism's correlates with demographic, personal, weight-related, and behavioral factors. Self-report and anthropometric data were collected from a representative sample of 4,746 adolescents from 31 public middle schools and high schools in the Twin Cities area of Minnesota. Students answered questions concerning vegetarianism, food and weight, and health behaviors. Height and weight were directly measured. Comparisons were made between self-reported vegetarians and nonvegetarians; these analyses also assessed gender and race/ethnicity interactions. In the second set of analyses, demographic and behavioral characteristics of

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more restricted and semi-vegetarians were examined. Analyses were done by logistic regression.

Teenaged vegetarians comprised about 6 percent of the sample. The vegetarians were more likely than the nonvegetarians to be female, not black, weight- and body-conscious, dissatisfied with their bodies, and involved in a variety of healthy and unhealthy weight-control behaviors. The vegetarians more often reported having been told by a physician that they had an eating disorder and were more likely to have contemplated and attempted suicide. The vegetarian males were found to be an especially high-risk group for unhealthy weight-control practices. Few ethnic group differences among the vegetarians were noted. The vegetarians who did not eat chicken and fish were at lower risk for unhealthy weight-control practices than those who did.

The authors concluded that adolescent vegetarians were at greater risk than others for involvement in unhealthy and extreme weight-control behaviors. Vegetarian males were at particularly high risk. Vegetarianism among adolescents may therefore be a signal for preventive intervention. Adolescents who choose to become vegetarians may also need to learn how to healthfully do so. *Journal of Adolescent Health* 29(6):406-416.

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