

A. PURPOSE OF PROJECT

The purpose of this project is to improve children's health by including in their ongoing care the prevention and treatment of behavioral and developmental complications arising in the course of normal growth, illness, or disability. This is to be achieved through the fellowship training of selected pediatricians who will be equipped to take positions of academic and national leadership in the promotion, dissemination, study, and integration of behavioral/developmental (b/d) pediatrics within the broader scope of child health care. This project is also mandated to train pediatric residents, nurses, and medical students, and proposes to provide, at a future date, fellowship training for post-doctoral nurses and psychologists.

THE PROBLEMS TO BE ADDRESSED

Children's Health Needs - 1986

For children growing up in America today, the fruits of medical advances are striking. Roughly 99 of every 100 babies born will survive infancy. Fewer than 1 per 2000 beyond a year of age will die during childhood due to disease.(1) Yet the obstacles to healthy growth and development in the '80's are by now jarringly apparent. Children in good physical health face highly prevalent social and psychological hazards. Physical illness is increasingly being shown to have psychosocial correlates. Increased numbers of children benefit from medical expertise yet face chronic impairment, special health needs, and attendant developmental disturbances.

Today, an increasing proportion of our children are experiencing a variety of major stressors including child abuse, poverty, teenage pregnancy, parental divorce, family violence, and foster care placement. These and other disturbing trends, point to a general pattern of declining social support and resources for large segments of American children and families. Other highly prevalent and influential forces such as daycare, family mobility and isolation, television, and the awareness of nuclear threat exemplify the powerful and pervasive changes with which children of today must cope.

Illness and disability compound the developmental risk to the child who grows up in a stressful or unsupportive environment. In addition, newer epidemiologic work suggests an actual link between the risk for biologic disease or disorder and the availability of social support.(2) Increasingly, the evidence mounts for indivisible linkages between biologic health and psychosocial well being.

For the 7.5 million US children with chronic illness or disability, the linkages are dramatically evident. How a child adapts to and compensates for his physical problem may have more to do with his social support and psychological well being than with the severity of his disability. In addition, for many children who survive major biologic challenges, it is the neuropsychologic sequelae which impede growth toward health rather than the continuing biomedical problems. The survivors of extreme prematurity are a ready example of this group.

Thus, the vulnerable child in 1986 is more likely to be at risk as a result of cumulative hazards - physical, psychosocial, and environmental. Health care provision, if it is to be relevant, responsive, and comprehensive in approaching these needs, must include the assessment of social support and stress, the inclusion of psychological considerations in assessments and treatments, and the addition of a diagnostic nomenclature which will take into account the child's functional status, emotional health, and quality of life.

Educational Needs of Pediatricians

In 1986, pediatricians at all levels remain undertrained to handle the biopsychosocial problems which most face daily. Training programs, despite considerable hue and cry from pediatric educators and leaders over the past decade, have on the whole, not been successful in adjusting training to reflect this need. Difficulties related to funding, curriculum time, and faculty support have all been cited.(3,4)

Two other more general forces impede this transition in training. First and foremost, such training is of a different type with its emphasis on the simultaneous consideration of multiple systems and potential levels of influence. It demands of the physician an adjustment in approach, role and responsibility. Behavioral/developmental content which is simply spliced onto existing programs but left out of clinical training and patient care will not have significant impact.

Secondly, given the pioneering nature of this effort, there has been debate as to the proper role, limits, and identity of the behavioral/developmental pediatrician within pediatrics and amongst other professional disciplines. At stake in this debate is the potential for professional influence and acceptance in and out of the academic arena.

As we move toward the 1990's, American medical care is undergoing profound reorganization. The re-ordering of medical care financing will present new obstacles to the development of more comprehensive child health services. On the other hand, we suspect that the consolidation of practices, the trend toward greater diversification by health care providers, and the emphasis on preventive care measures will present new opportunities for behavioral/developmental practice on a wider scale. These changing trends along with the compelling health needs of children as noted make the present a pivotal time for pediatrics to enlarge its scope. The catalyst in this effort must be the various training programs for physicians. To the extent they are able to provide a basic behavioral/developmental "fluency" to all pediatricians, so will the expected standard of care and understanding of physician role be expanded. Clearly, this scenario requires a cadre of highly trained and qualified leaders.

What are the qualities and qualifications of such pediatric leaders? Essential ingredients include: clinical competence and confidence and the courage to promote an approach which is frequently challenging to tradition; an awareness of the needs of the whole child and a commitment to disseminate this perspective; the interest and vision necessary to critically view biopsychosocial phenomena and generate questions and ideas for study;

research expertise to activate these ideas; an epidemiologic and public health perspective to inform clinical and research goals and to enhance persuasive power in the promotion of these goals; an ability to devise programs, organize and lead individuals of varied background and discipline; and a commitment to behavioral/developmental pediatrics as integral to the general practice of pediatrics, thus to its integration in the training of the broadest range of health care professionals. The need for an intensive, integrated, and comprehensive training for such individuals is apparent.

How This Project Can Help Meet These Pediatric Educational Needs

Since 1948 the Child Study Unit has pioneered in developing training programs to provide future pediatricians with biopsychosocial knowledge and skills in order to make them "better pediatricians." From this program have come respected national, state and local leaders concerned with providing comprehensive health care for children and their families, as well as many practicing physicians who are providing this care. Currently, medical students, pediatric interns and residents, nursing and nurse practitioner graduate students, family practice residents, post-graduate psychology fellows, and pediatric fellows are all recipients in varying degree of this training.

A central problem facing all behavioral/developmental training programs is the question of what to select to teach from a vast and growing body of knowledge, and how best to "package" it for the pediatric fellow and other trainees. We, as CSU teaching faculty, represent the disciplines of: behavioral and general pediatrics, general and child psychiatry, psychology, nursing, education, speech and language pathology, and social work. Our clinical orientations and interests include the areas of primary care pediatrics, developmental and learning disabilities, family dysfunction and family therapy, the psychodynamic approach to child assessment, cognitive assessment, neuropsychology, neonatal assessment, infant attachment disorders, community mental health, pediatric/psychiatry liaison, educational remediation, and social epidemiology. Regularly participating UCSF staff and clinical faculty add other disciplines and orientations. Given this impressive array, the questions of what and how to teach has required continual thought, appraisal, negotiation and revision.

We feel that our "center of gravity" in training has been in providing a particular clinical approach that has been refined and condensed over the years. Clinical approach, CSU style, has come to mean a number of things, including: 1) a systems approach to viewing and working with the child in his or her family, and, further, to effectively understanding and collaborating with the wider circles of influence, i.e., medical providers, school, and community; 2) a broad understanding of normal and deviant child development with a bias toward viewing behavior as manifesting the growth needs and efforts of the child, rather than as determined by pathology; 3) attention to and use of the process (the "how") aspects of patient interaction as well as the content (the "what") in developing sensitive and effective interviewing capabilities; 4) self-understanding to allow the clinician to draw on and learn from his/her responses to patients and, by doing so, to enhance genuine empathy, perceptiveness, and the proper use and timing of clinical expertise.

For most physicians this approach provides a quite different way of perceiving and interacting with patients. It has the drawback of requiring time and considerable attention to the individual abilities, needs and progress of the trainee. Thus, our fellows in the initial months of their training speak of feeling like beginners, and do require close support and monitoring. Yet they nearly all feel rewarded as they acquire a method for approaching all kinds of patient problems which previously seemed beyond their reach. Additionally, they find this type of clinical approach as eminently applicable to general or subspecialty pediatric practice. It provides the *modus operandi* for clinical evaluation and counselling, and for consultation and teaching. In these respects, we see the clinical approach as the "hub" experience of our training program and the central expertise of the behavioral/developmental pediatrician.

Building on this basic expertise, the CSU fellow is the recipient of the broad interests and eclectic orientations described above. The input comes in varied forms, from the carefully coordinated curriculum of the Child Development Literature Seminar to the often divergent views offered in interdisciplinary case conferences. What the fellow gains from this wide scope of teaching and modelling is not simply added knowledge and skills to enter into his/her data base, but also the experience of collegial interaction with the range of disciplines and perspectives with which they will work throughout their careers.

The organization and teaching of biopsychosocial research to pediatricians is, as well, a task of selecting and packaging largely new material in digestible form. If an excellent beginning in research capability is to be attained, the "package" must be coherent and disciplined, the areas for study relevant and exciting. We anticipate that within the three year fellowship time frame, the program outlined below by our research director will provide these elements.

Finally, to be a leader, the behavioral/developmental pediatrician must be able to navigate between his/her understanding of the specific needs and remedies of the individual and the broader perspective of children's needs and available resources at local, regional and national levels. For this purpose, the CSU fellow, through the resources and collaboration of the School of Public Health, U.C. Berkeley, as well as other UCSF resources will receive instruction in epidemiology, anthropology, public health, preventive medicine, and health policy. We propose to organize this instruction to allow fellows to acquire a Masters Degree in Public Health on completion of the fellowship.

Proposal

In order to enhance the comprehensive care for children by training pediatricians who will provide, teach, and investigate a behavioral/developmental approach which may be applied to improve the care of children in good physical health, in developmental crisis, or with chronic illness or disability, a three year fellowship program is proposed and will provide:

- 1) a unique knowledge base, grounded in clinical approach and experience, and inclusive of indepth study of child, family, community, and health and social policy issues as well as a knowledge of Maternal and Child Health programs and activities.

2) research skills and experience with which to critically consider and investigate biopsychosocial clinical problems. We anticipate that special emphasis will be in the area of stress, social support, and their effects on health.

3) leadership skills and experience which will equip the trainee to teach, devise, manage, administrate, and promote programs of behavioral/developmental pediatric training and research.

REFERENCES:

1. U.S. Bureau of the Census: Statistical Abstract of the United States. U.S. Dept. of Commerce, 1986.
2. Boyce, W.T.: Stress and Child Health: An Overview. Pediatric Annals 1985; 14:539-542.
3. Zebal, B.H., Friedman, S.B.: A nationwide survey of behavioral pediatric residency training. J. Dev. Beh. Ped. 1984; 5:331-335.
4. Weinberger, H.L., Oski, F.A.: A survey of pediatric resident training programs 5 years after the task force report. Pediatrics 1984; 74:523-526.

B. GOALS AND OBJECTIVES
BEHAVIORAL/DEVELOPMENTAL FELLOWSHIP

As highlighted in the PURPOSE section, the overall goal of the grant is to develop leaders in behavioral/developmental pediatrics. The following list of goals and objectives are deemed essential for all fellowship trainees to accomplish by the completion of three years of training. The attainment of these goals and objectives will be measured as described in the Monitoring and Evaluation Section, p. 44.

GOAL: PROVIDING A BODY OF KNOWLEDGE AND CLINICAL SKILLS

1. Knowledge of biopsychosocial issues:

a. The trainees will demonstrate an ability to assess the child's development from the neonatal period through adolescence in the context of the child's environment: the family and culture, school, and community.

b. The trainees will demonstrate an understanding of the impact of temperament, stress, early risk factors, developmental delay, and chronic handicapping conditions on children's biopsychosocial development and family relationships.

2. Knowledge of Health Services for Children:

a. The trainees will demonstrate an understanding of the prevalent health needs and available services for children at local and national levels; they will gain epidemiologic, cultural, public health, and ethical knowledge through which to understand the interventions, goals and methods of Maternal and Child Health Care Programs, as well as the hurdles to their implementation.

3. Interviewing skills:

a. The trainees will demonstrate an ability to view the family as a system and conduct diagnostic and therapeutic family interviews.

b. The trainees will demonstrate an ability to conduct diagnostic play interviews with children of different ages.

4. Clinical Skills:

a. The trainees will demonstrate an ability to intervene with families in the behavioral management of children with chronic illness, developmental and physical handicaps, psychosomatic reactions, situational stresses (e.g. hospitalization, divorce, death), family dysfunction, and normative developmental crises.

b. The trainees will demonstrate an ability to coordinate a multi-disciplinary comprehensive evaluation of children with various handicapping conditions.

c. The trainees will demonstrate an ability to serve as a behavioral/developmental consultant to, as well as utilize resources of, other professionals involved in the care of children, e.g. health care providers, community agencies, school personnel, day care centers.

5. Self-Understanding:

a. The trainees will demonstrate an understanding of their personal reactions to the illness, disability, behavior, and psychosocial circumstances of their patients, and will apply this understanding to enhance their clinical work with children and families.

GOAL: DEVELOPING RESEARCH SKILLS

1. Knowledge of behavioral research methodology:

a. The trainees will demonstrate an understanding of basic epidemiologic principles and methods, including: categories in research strategies, validity and reliability in measurement of variables, sources of bias in data collection and analysis, and evidence supporting causality.

b. The trainees will demonstrate an understanding of basic biostatistical principles and techniques, including: relative and attributable risk measures of association, sensitivity and specificity, standardization and adjustment, multivariate analysis, and the difference between clinical and statistical significance.

c. The trainees will develop a working understanding of central concepts and issues in behavioral medicine, including: stressful life events, social support and social networks, the development of health behaviors, compliance, suggestion and placebo effects, stress physiology, and psychoneuroimmunology.

d. In attaining data management skills, the trainees will develop "computer literacy", demonstrating skills in entering, editing, and analyzing data on micro-and mainframe computers. They will master the use of at least one statistical software package for the management and analysis of large data sets.

e. The trainees will demonstrate the ability to critically analyze the medical literature. They will be able to recognize and explain epidemiologic flaws in the design or analysis of published research results. They will develop skills in reviewing published work on a given topic in behavioral pediatrics and in summarizing the conclusions of that work, based on a critical assessment of the strength of presented evidence.

2. Completion of a clinical research project:

a. Each trainee will complete an independent clinical research project consisting of the following steps: development of a research idea, review of existing literature, formulation of "researchable" questions, design of the research strategy, development or identification of required measurement techniques, identification of a study population, collection and analysis of data, reporting of results in verbal and written presentations.

GOAL: EXPANDING LEADERSHIP SKILLS

1. The trainees will develop skills in the following teaching modalities: didactic lecture, group discussion, role playing, review of trainee-patient contacts via audio or videotapes, demonstration interviews, and primary care consultation.

2. The trainees will demonstrate an understanding of curriculum design, including development of goals, objectives, and evaluation techniques, as well as teaching methods appropriate for different levels of trainees (medical students, graduate nursing students, interns, residents, fellows).

3. The trainees will develop skills in program development, management, and administration. These skills will reflect a knowledge of and sensitivity toward the broader societal variables (socioeconomic, ethnic, political) which impact on health care needs of children.

4. The trainees will show evidence of successfully integrating the behavioral/developmental perspective to their clinical, research, teaching interests and ultimate career goals.

PEDIATRIC RESIDENTS

The primary goal for the pediatric resident on rotation in the Child Study Unit is to provide a foundation rather than an expertise in behavioral/developmental pediatrics. To this end, basic aspects of Teaching Objectives 1a & b; 3a & b; 4 a, b, c; and 5a listed above apply.

PEDIATRIC INTERNS

GOAL: PROVIDING A BODY OF KNOWLEDGE AND CLINICAL SKILLS

1. Knowledge of biopsychosocial issues:

- a. The trainee will demonstrate an understanding of normal neonatal behavioral capacities.
- b. The trainee will demonstrate an understanding of normal developmental milestones in children.

2. Clinical Skills:

- a. The trainee will demonstrate an ability to do newborn behavioral assessment and demonstrate newborn repertoires to parents.
- b. The trainee will demonstrate an ability to do developmental screening using the Denver Developmental Screening Test.

GOAL: PROVIDE AN INTRODUCTION TO THE CHILD STUDY UNIT

1. The trainee will demonstrate an understanding of the patient population, services provided and programs in the CSU.

MEDICAL STUDENTS/GRADUATE NURSING STUDENTS ROTATION

GOAL: PROVIDING A BODY OF KNOWLEDGE AND CLINICAL SKILLS

See the specific objectives of the Comprehensive Evaluation Program (page 28) which is the training experience for the medical and nursing students.

G. PROGRAM METHODOLOGY

Program Methodology is summarized on Chart 2, p. 21. This chart provides an overview and key to the curricular components which contribute to the realization of the teaching objectives for the fellowship program. The other listed trainees use these same components in varying degrees as indicated.

1.a. 3 YEAR FELLOWSHIP IN BEHAVIORAL/DEVELOPMENTAL PEDIATRICS

In order to accomplish the goals and objectives of this behavioral/developmental pediatric training program, a 3 year fellowship curriculum for postgraduate pediatricians is described. A fellow must be actively involved in a variety of curriculum experiences (didactic, clinical, supervisory, consultative, research, teaching, administrative, and personal growth). The organization and integration of these experiences are essential to the achievement of the overall goal - the training of behavioral/developmental pediatricians with leadership potential.

Each part of the program must be successfully completed. Yet, a successful training program is more than the sum of its training components. The experiences must be grouped in such a way as to allow the fellows to master and successfully advance from one developmental stage to another.

The first year of fellowship will be devoted largely to imparting a body of skills and knowledge to provide the clinical foundation of behavioral/developmental pediatrics. Through intensive faculty supervision, support, and guidance, this period of training will focus on a broadened understanding of child development, family systems, inter-disciplinary resources and collaboration, a working relationship with preschools, schools and infant development programs, and the understanding and use of one's own reactions ("the self") in helping patients. This clinical approach will challenge the physician to focus in new ways on the process of interaction with child and family. The primary care experience enables the fellow to maintain his/her previously mastered pediatric skills and identity while applying new skills and knowledge with continuity patients.

The research program becomes the primary focus during the second year of training. The fellow is encouraged to use his/her pediatric and behavioral/developmental expertise and experience in developing questions for scholarly study. Clinical responsibilities are reduced as half the schedule is devoted to research activities. Building on the clinical basis of the first year, opportunities for teaching and consultation are provided, and a tutorial in teaching methodology given. Core courses toward the masters degree in public health will be offered.

The third year curriculum will facilitate the integration and consolidation of clinical, research, teaching, and consultative roles. The theme of this year is the tailoring of new expertise to the career goals and future projects of the fellow. A broader understanding of the relevance of these new skills and knowledge to the target population of Title V programs will be emphasized as fellows complete their MPH. Community placements will add clarity and perspective to the fellow's training. Administrative experiences force a recognition of the importance of fitting the program to the needs and strengths of the participants. The presentation and defense of their own research will sharpen their critical thinking regarding future work. In short, this should be a year of "coming into their own".

SELECTION

The fellows' selection process will include three components: the recruitment of applicants, the interview process, and the selection criteria. The recruitment will be accomplished by conducting a national search in pediatric journals and via letters to each pediatric department chairman. The recruitment process also includes a planned and advertised behavioral pediatric elective in the CSU for medical students and pediatric residents.

The interview process is essential and mandatory. Fellowship applicants will be invited to spend one to two days in the CSU. During this time the applicant will have interviews with several CSU staff from different disciplines (pediatrics, child psychiatry, nursing, and psychology). The applicant will spend time with one or more of the present fellows. In addition, s/he will be involved in at least one training experience (most often a clinic) with a feedback session afterwards.

The selection criteria will be straight forward. A solid foundation in general pediatrics via completion of pediatric residency training will be prerequisite. We will be looking for intelligent, mature, and confident applicants whose stated goals center on a leadership role with respect to the practice, teaching, research, and/or administrative enhancement of behavioral/developmental pediatrics. Each applicant will be scrutinized for their ability to be empathic to the child and receptive to new perspectives in understanding child behavior and interactions. They must have the ability to think critically, and demonstrate an interest in behavioral/developmental research. We will request letters of recommendation and will make direct contact with one or more of the references.

CURRICULUM

The scope and sequence of the fellowship curriculum are outlined in chart 2, page 21 and schedule 1, page 16. Chart 2 clusters the program into 9 types of training experiences and these are described in detail in Section III below. The weekly schedules provided represent sample weeks from each fellowship year. In addition, the Research Training and Masters in Public Health, as autonomous programs within the curriculum, are more fully introduced here:

Research Training: The central focus of the Child Study Unit fellowship program is the training of future leaders in academic behavioral pediatrics. Increasingly, and we believe appropriately, academic pediatricians are expected to contribute to the growth of scientific knowledge in their chosen area of subspecialty work. In the field of behavioral pediatrics, a rapidly growing body of literature addresses the interaction between psychosocial and biological processes in the etiology of childhood disease. Future academicians in behavioral pediatrics must be prepared to understand, critically analyze, and contribute to this literature. This need has been recently underscored by senior investigators calling for the establishment of a more solid and coherent scientific base for behavioral pediatrics. Thus, a critical and highly visible dimension of the training program we propose is a curriculum in research methodology.

The three year research curriculum comprises five components that are summarized in Table 1, p. 37. Fellows' participation in this curriculum will be supervised by Dr. Tom Boyce, with the assistance of the other CSU faculty. The five components are: 1) a core CSU research seminar, 2) seminars and courses offered at the School of Public Health, University of California, Berkeley, 3) a health psychology course on experimental design and psychometric methods, 4) research tutorials, and 5) the design, completion, and presentation of a research project. The centerpiece of the research training program will be the fellows' conception-to-publication development of an original research idea and project. Other components of the curriculum are designed to provide fellows with the knowledge and skills required to conduct their research, under the supervision of CSU faculty. Our general goal for CSU fellows is the acquisition of sufficient research expertise to allow semi-independent investigation in a future academic environment.

The content of the seminar and coursework curriculum will center on two areas of knowledge we believe constitute the basic sciences of behavioral pediatric research: social science theory and epidemiologic methods. Through the components of the research curriculum, fellows will be exposed to fundamental issues in health psychology, sociology, and behavioral medicine and will be taught to employ a variety of epidemiologic approaches to the design and analysis of clinical research. The specific content of each curricular component will be reviewed on pages 37-40.

Masters in Public Health: Through the collaboration of the Project Director and Frank Falkner, M.D., Professor and Chairman, Maternal and Child Health Program at the School of Public Health, UC Berkeley, plans have been initiated to give credit to components of the proposed program on the SF campus. Selected courses offered over 3 years on the Berkeley campus, will provide the graduate with an MPH degree at the completion of the fellowship. Details concerning the course work, accreditation of faculty, and time schedule will be completed during the next three months.

FACULTY DISTRIBUTION

To accomplish the teaching, supervision, and support for the trainees, our faculty will be from the CSU, with additional participation from our clinical faculty, and staff from Ambulatory Pediatrics, Adolescent Medicine, Child Psychiatry, School of Nursing, Health Psychology, Health Policy and School of Public Health.

Faculty financial support is listed in Budget, section 4d. with the in-kind support from the campus outlined.

PATIENT SELECTION

The patient referrals come from multiple sources in the medical center, community, and Northern California. The intake process will begin with a phone interview the day of the inquiry. This information will be given to the faculty member coordinating the specific program who will review the intake, make contact with the family, and offer an appointment. Each fellow is assigned to a faculty clinical supervisor (See Fellows' Clinical Supervision, p. 32.) who through regular meetings and case review is appraised of the fellows' needs and progress. The faculty regularly meet to review the status of each fellow. Assignments are made accordingly.

FELLOW SCHEDULESYEAR ONE (Year Round)

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8-10	clinical Supervision	Literature/Research Seminar	Research	Early Childhood Clinic
10-12 Clinical Supervision	Personal Growth Seminar			
1-3 Primary Care Clinic	Clinical work & Supervision	School Age Clinic	Research	Clinical Supervision Research
3-5				

- ADDITIONAL: 1) B/D Core Curriculum --- 6 weeks
 2) Family Interviewing Seminar --- 12 weeks
 3) Comprehensive Evaluation Program --- 5 weeks
 4) Coursework: a) Research Methodology, b) Social Epidemiology, c) Neurodevelopmental Assessment

YEAR TWO

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8-10 Research	Clinical Supervision	Literature/Research Seminar	Research	Primary Care
10-12	Personal Growth	Research		Early Childhood Clinic
1-3 Pediatric Inpt. Consultation	Research	School Age Clinic	Research	
3-5 Research		Primary Care		

- ADDITIONAL: 1) On-call, 1 day/week, Inpatient Consultations --- 1-2 months
 2) Coursework: a) MPH; b) Teaching Tutorial
 3) Teach: a) Family Interviewing Seminar, b) Clinics

YEAR THREE

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8-10	Clinical Supervision	Research Seminar	Research	Early Childhood Clinic
10-12 Clinical Supervision	Personal Growth Seminar	Research		Primary Care
1-3	Clinical Work & Supervision	Primary Care	Research	Clinical Super.
3-5		School Age Clinic		

- ADDITIONAL: 1) Teach: a) Clinics; b) CEP; c) Core Curriculum; d) Literature Seminar
 2) Coursework: a) Health Policy; B) Anthropology; c) Ethics
 3) Consultation: a) County MCH; b) Dept. of Social Services, c) Schools

1.b. RESIDENT TRAINING

Every second year UCSF pediatric residents spend a six week block in the Child Study Unit. These rotations begin in January, March, May, July, September, and November. Electives are offered to other pediatric residency programs for a four or six week block coinciding with the scheduled rotations. In any one rotation, up to 2 non-UCSF pediatric residents participate along with the UCSF residents. The selection process is on a first-come, first-served basis. The pediatric resident will participate in the Early Childhood Clinic, the School Age Clinic, the Comprehensive Evaluation Program, and the Core Curriculum for Residents. See section 3. below for a detailed description of these programs. The Core Curriculum schedule is presented on pages 22. The faculty assignment and patient selection process is as previously described.

1.c. MEDICAL STUDENT/GRADUATE NURSING TRAINING

UCSF medical students and graduate nursing students are involved in a specific core teaching program within the Child Study Unit. The students selected for these rotations are preselected by the School of Medicine and School of Nursing. The 3rd year medical students spend one of their 6 weeks in Pediatrics in the Child Study Unit. The PNP graduate nursing students spend one week during their second year on the Child Study Unit. These students participate as trainees in the Comprehensive Evaluation Program. The details of the training program are described on page 28.

1.d. PEDIATRIC INTERN TRAINING

The UCSF pediatric intern (PL-1) participates in a three day teaching program in the Child Study Unit. The content of their training introduces the clinical resources of the Unit as well as presents basic behavioral-developmental concepts and skills applicable to an intern's clinical work. The intern participates in a School Age Clinic and an Early Childhood Clinic. In addition, two modular teaching units - Neonatal Capacities and the Denver Developmental Screening Test - are presented to the trainee. Please see page 27 and page 26 for descriptions of the SAC and the ECC respectively.

The Neonatal Capacities and DDST modules involve reading, viewing videotapes, and faculty review sessions. There is actual time allotted for reading articles on each topic and viewing selected videotapes. The trainee then meets with a faculty member to observe demonstrations and/or participate in discussions of each topic. Faculty assignment and patient selection is as previously defined.

1.e. CONTINUING EDUCATION FOR PRACTICING PEDIATRICIANS

The Child Study Unit with co-sponsorship of the Department of Pediatrics through the UC Extension Division will offer a Symposium on Current Topics in Behavioral/Developmental Pediatrics for CME credit. The topics will be chosen from the Needs Assessment Survey of Practicing Pediatricians (Tanner, and Franklin, Appendix B., MCH Renewal Application, 1984) with the presentations followed by workshops to be preselected by participants.

Faculty will be from the Child Study Unit and its clinical faculty with faculty time donated. Costs for the Symposia will be related to CME credits, overhead and publicity.

Distribution of "flyers" will be regional with the anticipation of a response of over 150 participants.

Future topics will be determined by the evaluation process which will solicit suggestions for topics from participants.

During the year selected pediatricians will be invited to participate in on going teaching and clinical activities, and to join the Comprehensive Evaluation Program staff to evaluate one of their patients or participate in a case discussion of a child referred to the CSU from another referral source.

REFERENCES:

1. Eisenberg, L.: What is the Science Base for Behavioral Pediatrics?
J. Dev. Beh. Ped. 6:188, 1985.
2. Haggerty, R.: Behavioral Pediatrics: A time for research. Delivered to
4th Annual Meeting of the Society for Behavioral Pediatrics, 1986.

2. PROPOSED NEW PROGRAM

2.a. POSTDOCTORAL FELLOWSHIP IN PSYCHOLOGY/NURSING

Building systematically on our experience in behavioral/developmental pediatric training, we propose to extend the program to include the fellowship training of postdoctoral nurses and psychologists for two year rotations. This fellowship would commence in year two of the funding cycle.

A pilot program, funded by MCH in 1984-86 to permit training of a postdoctoral psychologist has provided experience with such a curriculum. Our decision to propose this additional program is based on: 1) the success of our pilot program; 2) the apparent need for such training; 3) our capacity to initiate the training with a relatively small outlay of additional teaching resources; 4) the benefit to our unit and other trainees in including such "cross-disciplinary" training.

Changes in both child health and these disciplines create the need for such a fellowship. The complex interweaving of medical and psychosocial factors in current health problems requires that all relevant disciplines cooperate effectively. Post doctoral nurses have unique skills in integrating medical-psychosocial factors, health assessment, clinical research, case and program management. They are now ready for post doctoral training to enhance leadership and administrative skills. Similarly, psychologists have special expertise in developmental theory, assessments, therapy, evaluation and research. Recent changes in licensure laws and hospital regulations bring into medical settings growing numbers of psychologists who are licensed to provide direct patient care and hold hospital staff privileges. Most training programs equip them to work in psychiatric, academic or private practice settings; most emphasize one-on-one services for adults and focus on psychopathology. A demonstrable need exists for qualified psychologists who understand child health needs and service delivery systems.

We have learned, in our 30 years experience, that interdisciplinary training increases efficiency and productivity. Such collaboration lets faculty offer a variety of experiences across disciplines and stimulates both trainees and faculty to broaden concepts and critically consider principles.

Anticipated roles for graduates include program administrators, consultants to specialty sources, developers of innovative direct service projects, clinical researchers, academic faculty in pediatrics and related fields staff in MCH agencies, Regional Centers, HMO's, etc.

GOALS AND OBJECTIVES

The general goals and objectives are the same as those of the pediatric fellows except that research and MPH coursework will be relatively minor elements. As regards their differing backgrounds, we intend to develop their awareness of mutual interests, overlapping competencies and unique skills. To meet the needs of each trainee and its discipline, each supervisor will prepare an IEP (individualized education plan) with that fellow for each quarter.

SELECTION:

The core selection committee includes the nursing and psychology faculty supervisors and a representative from behavioral pediatrics. They will screen applicants and interview those with appropriate qualifications, with the help of other faculty in their disciplines. The CSU director will confirm the final appointment. The selection process will involve the following steps and considerations:

Recruitment: Fellowships will be advertised in leading professional journals and meetings.

Prerequisites: Degree: doctoral appropriate for the field (DNS, Ph.D. in Nursing, Ph.D., Psy.D., Ed.D. in Psychology) from accredited training programs in their disciplines. For psychologists, preference is given to those from programs approved by the American Psychological Assoc.

Major Fields:

Nursing: pediatric, maternal and child or community health.

Psychology: child health related professional fields, e.g.: clinical counselling, school.

Experience:

Nursing: 3 or more years of clinical background related to maternal and child health at pre-or postdoctoral levels.

Psychology: 3 or more years in child assessment, intervention, research or teaching, at pre-or postdoctoral levels.

Interests:

In one or more major areas of pediatric problems that require services and program description: e.g. the new "morbidity", chronic illness, high risk populations, genetic conditions, developmental disabilities, minority children's health.

CURRICULUM: Overview: The program is organized in a two year sequence, recognizing that these fellows already have strong research backgrounds. The first year provides an orientation to comprehensive maternal-child health services, giving attention to the health and developmental concerns of different age groups. The second year provides experiences in program development, evaluation and research geared to the fellow's skills and interests.

Each quarter, core interdisciplinary training activities are organized around a service delivery teaching clinic, supplemented by weekly didactic seminars in the Unit, individual supervision programs in other divisions, visits to community and governmental agencies, and workshops and presentations. Each discipline will have its own seminar or conference at least once a month.

EVALUATION: The evaluation process is the same as that for the behavioral pediatric fellow and is outlined in Chart 3, and described in Section H.

By the last quarter, trainees are expected to prepare a presentation for the faculty which could be published, funded or presented at a professional meeting, depending on their interests. The topic will be chosen in the first 6 months and implemented in the next year.

3. PROGRAM DESCRIPTION OF COMPONENTS OF THE CURRICULUM

a. DIDACTIC

a.(1) BEHAVIORAL/DEVELOPMENTAL CORE CURRICULUM

TRAINEES: The following trainees participate in this series: CSU fellows, 14 pediatric residents, 10-12 non-UCSF pediatric residents, and 2 postdoctoral psychology and/or nursing fellows.

PURPOSE: The core curriculum in child development is intended to expand the trainee's understanding of normal child development and related behavioral issues. In addition, the fellows will gain skills in presenting didactic material and leading seminars. We see the following goals as especially pertinent to this end.

GOALS:

1. To broaden trainee's knowledge of normal child development in perceptual, motor, cognitive, communicative, affective, and psychosocial areas and in temperament and coping behavior.
2. To understand certain patterns of development as explainable and logical within the framework of available developmental theory.
3. To appreciate the applicability of developmental theory and research into clinical practice, and to demonstrate the existence of a body of knowledge in this area.
4. To enhance the rationale behind anticipatory guidance given in pediatric practice.
5. To increase competence in the recognition of children with developmental delay, learning and language disabilities, and attentional deficits.
6. To appreciate the interplay between parental expectations and developmental variations.

TRAINING CONTENT: Trainees participate in 18 two-hour seminars co-taught by CSU and Ambulatory faculty, or CSU faculty and third year fellow.

The format includes didactic presentations of fundamental theory and clinically relevant research, and group discussion of related common behavioral issues. Teaching techniques also include case vignettes, slides and films, role play, and review of videotapes. Trainees are expected to read the preassigned readings in the syllabus.

The following is a sample 6 week schedule:

<u>TOPIC</u>	<u>SPEAKER</u>	<u>DATE</u>
Overview of Growth and Development	P. Kaiser, MN, PNP	5/1/86
Temperament	H. Gofman, MD	5/12/86
Developmental Theory I:		
Freud and Erikson	R. Wolk, Ph.D.	5/1/86
Developmental Theory II: Piaget	L. Tanner, MD	5/19/86
Speech and Language: Normal		
Development & Assessment Techniques	C. Freidenberg, MA	5/22/86
Infancy: Observable Phenomena	P. High, MD	5/12/86
Infancy: Attachment	P. High, MD	6/10/86
Preschool: Common Clinical Issues	H. Gillis, Ph.D.	6/10/86

Developmental Screening: I	R. Annett, Ph.D.	5/12/86
	L. Huffman, MD	
Community Experience: Visit to Grace Infant Center	P. Kaiser, MN, PNP	5/13/86
Psychiatric Nosology for the Pediatrician	M. Glasser, MD	5/14/86
Daycare Options Effects of Maternal Employment	P. Kaiser, MN, PNP	5/19/86
Community Experience: Visit to Daycare Center	P. Kaiser, MN, PNP	5/19/86
Community Experience: Visit to a Preschool	P. Kaiser, MN, PNP	5/20/86
Adolescence: I	M. Glasser, MD	5/20/86
Community Experience: Visit to a Grade School	S. Nagulko, RN, MA	5/21/86
Observation & Interpretation of Audiological Evaluation	P. Kaiser, MN, PNP	5/22/86
Hyperactivity	C. Baum, MD	5/27/86
Child and Family Interview	C. Baum, MD	5/29/86
Learning Disabilities	A. Whitsell, BA	5/29/86
	M. Kaplan, MA	
School Age Child	L. Tanner, MD	6/2/86
	D. Harvin, MA	
Community Experience: Visit to Easter Seals Infant Development Program	M. Alger, MSW	6/9/86
Developmental Screening: II	L. Huffman, MD	6/9/86
Hospitalization	P. Kaiser, MN, PNP	6/10/86
Community Experience: Teaching Tour Sonoma State Hospital	L. Crain, MD	6/11/86
Adolescence: II	M. Glasser, MD	6/12/86

a.(2) FAMILY INTERVIEWING SEMINAR

TRAINEES: CSU fellows, 14 UCSF pediatric residents, and 24 other health professionals (nurses, non-UCSF pediatric residents, family-practice residents)

PURPOSE: To teach the importance of the family system in dealing with behavioral, developmental and medical problems of children. To familiarize trainees with family systems theory, communication theory, and basic interviewing skills. To provide further training in diagnostic family interviewing and the use of family interviewing for therapeutic purposes, for example, in cases of psychosomatic illness or chronic disease.

TRAINING CONTENT: The seminar meets weekly and repeats every two months, coinciding with the residents' CSU rotation. Topics include family systems, communication, interviewing techniques, presenting a difficult diagnosis, psychosomatic illness, chronic illness, common behavior problems, divorce, terminal illness, and making referrals for psychological/behavioral problems. Assigned reading, didactic teaching, videotapes and role-playing are among the teaching techniques used. Emphasis is placed on learning by experience under supervision.

a.(3) CHILD DEVELOPMENT LITERATURE SEMINAR

TRAINEES: first and second year pediatric fellows, post-doctoral fellow(s). Open to pediatric residents on CSU rotation, ambulatory pediatric fellows, adolescent medicine fellows, and faculty. Third year pediatric fellows will contribute in a teaching capacity.

PURPOSE: This seminar is directed primarily to the fellows of the CSU. In addition, other trainees and staff, as listed, may attend the seminar when the topic is relevant to their training. The seminar will present major topics utilizing the classic and current literature of child development from infancy through adolescence. The intent is to provide the fellow with a solid grounding in current theoretical and research conceptualization of child development applicable to the clinical activities and research interests of the behavioral/developmental pediatrician.

TRAINING CONTENT: The seminar will be held every other week in the CSU, and will take the form of didactic lecture, fellow presentation, group discussion, and/or school and community visitation. The full course will span a two year period. The teaching faculty is drawn from the CSU, the Adolescent Medicine Project and other Ambulatory Pediatric staff, the School of Nursing, the Department of Psychiatry, and guest lecturers.

The curriculum will be organized in four major sections as follows:

- 1) Pregnancy, the newborn period, infancy and toddlerhood
- 2) The Preschool Child
- 3) The School Age Child
- 4) The Adolescent - this section is provided by the division of Adolescent Medicine as CSU fellows attend selected portions of the Adolescent Medicine Core Seminars.

The chief emphasis will be on the theoretical and research-established underpinnings of normal development. The fellows will participate in adding selected topics of interest, making formal presentations themselves, and in all cases doing required readings and playing an active role in group discussions. See 1985-86 CSU SUMMARY REPORT for topic listing.

a.(4) ADOLESCENT MEDICINE CORE SEMINARS

TRAINEES: 3rd year pediatric fellows - 1 hour weekly
2nd year post-doctoral fellow(s) - 1 hour weekly

PURPOSE: As noted for the Child Development Literature Seminar, the Adolescent Medicine Seminars will be joined by the CSU fellows during their final year to complete a review of the literature in the predominant thought and application of current theory and research of child development.

TRAINING CONTENT: The curriculum is devised and presented yearly by the Adolescent Medicine staff with guest speakers to the pediatric fellows in Adolescent Medicine. The full year course consists of weekly presentations, group discussions, and occasional community visits. The seminars are divided into sections with focus on: physical growth and development, sexual

maturation, psychosocial growth and dilemmas, cognitive development, school related issues, family issues and functioning, developmental disorders of adolescence. A syllabus is provided, and preparatory readings expected from each fellow. CSU fellows will be expected to attend all lectures except those covering areas treated by the Literature Seminar.

a.(5) TUTORIAL IN TEACHING METHODOLOGY

TRAINEES: All second year pediatric or postdoctoral fellows (one semester).

PURPOSE: To develop a foundation in learning theory and principles and their application to academic medicine, program development, and grant proposals.

TRAINING CONTENT: A university accredited tutorial will be taught by Dr. Edwin Rosinski, Ph.D., Director of the Office of Medical Education, UCSF. This semester length course will cover learning theories and principles, teaching modalities, curriculum design, evaluation methods, and approaches appropriate for various types of trainees. Additionally, the fellow will complete required readings. The fellow will also participate in a variety of teaching experiences which provide an opportunity to implement the principles and concepts taught in this course. Dr. Rosinski will join CSU faculty in reviewing these presentations and providing feedback and constructive criticism (For further detail, refer to Section 3.g. page 41: Experiences in Learning to Teach Behavioral Pediatrics).

a.(6) MASTERS IN PUBLIC HEALTH PROGRAM

See METHODOLOGY section 1.a.

a.(7) HEALTH POLICY, ANTHROPOLOGY, AND OTHER COURSE WORK

TRAINEES: All fellows

PURPOSE: To provide a breadth of knowledge and perspective which will be directly and indirectly applicable to clinical, teaching, research and leadership behavioral/developmental roles. Such course work should especially help place newly acquired behavioral/developmental knowledge and skills in the broader historical, political, anthropological, sociological, and ethical frames.

CONTENT: Course work will be carefully selected by the CSU faculty with consultation, from the varied offerings of the UCSF and UCB campuses, Depts. of Public Health, Health Policy, Sociology, Medical Anthropology, Health Psychology.

a.(8) NEURODEVELOPMENTAL ASSESSMENT AND THERAPY

TRAINEES: first year CSU fellow(s) --- 6 weeks
Post-Doctoral Psychology and/or Nursing fellow(s) --- 6 weeks

PURPOSE: The course in neurodevelopmental assessment and therapy is intended to expand the fellow's ability to assess neuromotor development. They become familiar with various theories and principles of treatment modalities

available for children with developmental disabilities and high risk neonates. Additionally, they will develop an understanding of the parent's and physical therapist's role in therapy as well as short and long term treatment goals.

TRAINING CONTENT: Trainees participate in eight two hour instruction periods utilizing lecture, discussion, audiovisual aids, and patient demonstration. The instructor, Janet Green Babb, RPT, is a Masters prepared physical therapist with extensive clinical experience as well as experience in teaching medical personnel. Course content includes: normal and abnormal sensory-motor development, neurodevelopmental therapy (NDT), sensory integration, pre-speech and feeding therapy.

b. CLINICS AND CLINICAL EXPERIENCES

b.(1) EARLY CHILDHOOD CLINIC...Age Range Newborn-5 years...#3-5/weekly

TRAINEES: CSU fellows, 28 pediatric residents, 15-20 non-UCSF pediatric residents, 24 medical students, 12 special education graduate students, and numerous local MCH leaders and staff.

PURPOSE: The purpose of this clinic is to provide direct clinical experience in the evaluation and management of behavioral and developmental problems of families and children during the first five years of life. Problems seen include neurodevelopmental entities, developmental delays, high risk neonates, speech delays, autism, pervasive developmental disorder, and attachment difficulties. Common behavioral pediatric problems include sleep disturbances, discipline issues, "hyperactivity", shyness and aggression. Adjustment reactions to daycare/preschools, divorce, death, moving, and foster care are also seen.

REFERRALS: Children and families are referred by housestaff and faculty in the University ambulatory and specialty pediatric clinics, the Intensive Care Nursery and its Parent Support Group, private community pediatricians, daycare centers and preschools, social agencies, and parents.

SERVICE GIVEN: A multidisciplinary consultation and evaluation provide comprehensive investigation of the medical, neurological, interactive, communicative, and mental health aspects of the problems presented.

Each family and child are seen for at least two evaluation visits. Prior to the first visit, written data have been collected on parental concerns and on temperament of the child (using Temperament Scales). Information obtained by phone includes a screening developmental/behavioral history from the parents, medical history and concerns from the primary pediatric care provider, observations and concerns from the daycare/preschool, and involvement with social agencies are also elicited by phone.

The initial visit consists of a one hour interview with the family, trainee and faculty member. Pertinent medical and social history is obtained, physical and/or neurological examinations are performed when appropriate, initial developmental assessments are made, and observations of

the child's behavior and development and interactional patterns of the family are made. When appropriate, a videotape is done of a play session of parent(s) and child, including a modified "Ainsworth strange situation" sequence.

At the second visit, further history is obtained and additional observations are made of the child's behavior and development as well as family dynamics. Formal developmental testing is performed by a clinical infant psychologist and/or a formal speech and language assessment is completed by a speech pathologist, if indicated. Observational assessments are often made in the daycare/preschool or home. Patients are referred to other clinics (e.g. Genetics, Neurology) as necessary for further evaluation.

Some families are seen for short term counseling. Families are assisted in making contact with other community agencies for ongoing services. These agencies include San Francisco Golden Gate Regional Center, Infant-Parent Program, The San Francisco Infant Program, the public school system. Complete reports are sent to the referring health provider or agency.

TRAINING CONTENT: Each patient is seen by a faculty (or experienced fellow)/fellow team. The other trainees, with faculty supervision, observe 2 cases behind a one-way viewing window. A one hour meeting of faculty and all trainees is held each week which includes case discussions, videotape reviews, and presentation of appropriate didactic material. Fellows receive individual supervision outside of clinic time from the faculty consultant as well as more indepth case discussion and group supervision in a weekly one hour conference with an ECC faculty member. (See page 33).

Fellows gain experience in observing and interacting with their patients in non-clinic settings as they join the faculty member conducting assessments in the child's home and/or daycare/preschool.

b.(2) SCHOOL AGE CLINIC... age range 4-17 years...4-6 children & families per week

TRAINEES: CSU fellows, 28 pediatric residents, 15-20 non-UCSF pediatric residents on elective, 2-6 masters level nursing students, and 2 post doctoral psychology and/or nursing fellows.

PURPOSE: This clinic meets for four hours weekly for the purpose of direct clinical experience in the evaluation and management of children referred with a variety of disorders related to either psychological stress or the interaction of biological and psychological processes. Problems seen include adjustment reactions to chronic disorder such as asthma, eczema, seizure disorder, tic syndrome, and hearing and vision impairment. Common behavioral and psychosomatic disorders such as hyperactivity, sleep disorders, enuresis, encopresis, obesity, and excessive shyness are seen. Also included are problems at home and school due to a variety of causes, including divorce, illness, a death in the family, or the child's own neurodevelopmental problems. The training purpose of this clinic is to demonstrate an approach to a wide variety of childhood biopsychosocial problems which may be emulated by trainees of varying background. Interdisciplinary collaboration and counselling techniques, are also demonstrated.

REFERRALS: Children are referred to this clinic by UCSF housestaff and faculty and specialty pediatric clinics, by private pediatricians, schools, social agencies, and parents. The clinic population is multiracial from a variety of cultural and socioeconomic backgrounds.

SERVICE GIVEN: The child is seen for consultation and evaluation regarding neurodevelopmental, cognitive, communicative and behavioral strengths and weaknesses. An initial family interview is conducted to appreciate the role the child with his/her difficulty plays in the family system. Further evaluation, especially psychological, educational, speech and language and neurological, are carried out as needed. Communications with community agencies and schools, as well as attendance at school planning and IEP meetings are also regular features of these evaluations. Many children and families are followed for bi-weekly to monthly counseling visits for up to several months as part of the management of these problems. Referral is provided for special academic, developmental, or psychotherapeutic needs when indicated.

TRAINING CONTENT: Each patient is seen by a faculty member or fellow teamed with a junior trainee. The remainder of the trainees, with a faculty member, observe two interviews each week through a one-way viewing window. A one hour teaching and "wrap-up" session is held each week to discuss all cases and present appropriate didactic material. Each trainee assigned to a case is encouraged to conduct the interview, keep a written record, contact medical and school personnel, join in school planning and other interdisciplinary meetings which arise from the evaluation.

b.(3) THE COMPREHENSIVE EVALUATION PROGRAM (CEP)...age range 5-13 years
...approximately 70 per year

Since 1960, the Child Study Unit has evolved an interdisciplinary team who have developed a demonstration training and service program. This has become a core teaching program in behavioral pediatrics for CSU trainees to learn to appreciate the biopsychosocial factors that impact on children and families.

TRAINEES: all CSU pediatric and post doctoral fellows, 14 pediatric 2nd year residents, 24 3rd year medical students, 24 pediatric residents, from other programs, 11 graduate nursing students, UCSF

TRAINING PURPOSE:

1. To give the trainees an opportunity to study one child and her/his family in depth to learn the many biological, psychological and social factors that influence a child's development. By following a child over four consecutive days the trainees have the unusual opportunity to observe the child's function and behavior, including coping behavior, in different settings, at different times of the day, and with different people. In this process almost all the trainees become the child's ally and advocate.

2. Provide the trainees with a framework to learn about normal child development and common deviations in development and learning; to see the changing developmental signs in the child's neurological examination as they relate to neurodevelopment. Provide them with exposure to a screening evaluation interview with attention to the child's emotional and academic strengths and weaknesses.

3. Furnish them with the experience of being part of a multidisciplinary team so that they may develop understanding of other professional roles in evaluating and managing children's biopsychosocial problems. These professions include the educator, psychologist, speech and language consultant, social worker, nurse, and pediatrician.

4. Provide them an opportunity to observe family evaluation interviewing and gain some understanding of family communication systems; to learn the essentials of an evaluation interview in families with a handicapped child.

5. Demonstrate the impact of a difference in the child's development on the family, community, and school and the effect of the resultant interaction on the further development of the child.

6. Give them teaching and practice in how to convey findings and recommendations to children and families in a manner that is understandable and usable.

7. Give them teaching and practice in integrating findings into a biopsychosocial profile of a child's strengths and weaknesses in functioning so that they can give a concise and clear presentation and write a concise and clear report for other health professionals.

8. Provide an opportunity to become acquainted with community resources that may assist in management.

REFERRALS: Children with multiple problems (physical and biopsychosocial) are referred by faculty and housestaff from the Pediatric Outpatient and Inpatient Services, from Bay area pediatricians and family physicians, community clinics, agencies, schools, and parents for comprehensive evaluation of the child and family. This program is nationally recognized for its special services to children and their families and for its training program for health professionals.

SERVICE GIVEN: The child is seen for a complete history and physical examination, a child evaluation interview, an extended neurological examination, and psychological, speech and language, and educational evaluations. The family, including child and siblings, is seen for a family evaluation interview. After a staffing by all consultants and trainees the child and family are seen for a summary and planning session. A report letter is written which the parents, and often the child too, return to review and edit. A copy is given to them and other copies are sent with their permission, usually to the physician, or health agency, the school and other appropriate agencies. A conference is then held, attended by involved CSU staff, agency, school staff and parents, to join efforts in providing for

the child's health, educational and social needs. Many of these families are followed in the CSU for a period of family counselling. Some of the children from San Francisco and nearby are also seen for supplementary educational therapy in our Pediatric Reading and Language Development Clinic.

TRAINING: The child and family are assigned to trainees teamed with a CSU consultant who guides them in following the child through the 4 day multidisciplinary study. The CSU consultant conducts the child and family interviews, performs the neurological examination, helps the trainee integrate findings, and guides the summary and planning session and follow up. Appropriate syllabus material - guides to child evaluation interview, family evaluation interview, educational screening, and neurological examinations - are provided. After appropriate training with the CSU faculty consultant, some trainees (fellows and 2nd year pediatric residents) themselves, serve in the CSU consultant role in this four day study.

b.(4) PRIMARY CARE CLINICAL PROGRAM -AMBULATORY, ADOLESCENT, and DISABILITY CLINICS.....4-8 patients weekly

TRAINEES: all pediatric fellows - half day per week for three years

PURPOSE: Pediatricians selected for fellowship will come to this training with substantial experience in primary care pediatrics. Our intent in providing additional experience throughout the fellowship is to: 1) allow the fellow to use and maintain his/her general pediatric skills and knowledge; 2) provide an opportunity to follow well and disabled children and their families longitudinally in order to teach the fellow, first-hand, of the child's and family's development; 3) allow the fellow to explore the possibilities for behavioral/developmental prevention and intervention in the primary care setting; 4) provide a site for behavioral/developmental teaching and consultation to ambulatory trainees; 5) allow the fellow to keep in touch with the needs, perspectives, and skills of the ambulatory staff and trainees. We expect the primary care experience to inform the behavioral/developmental teachings, and vice versa. Coordination and integration of the fellows' experience will be facilitated by Dr. Tom Boyce who will be providing regular primary care teaching and supervision half day per week.

SERVICE GIVEN: Fellows will provide general pediatric care to the pediatric and adolescent clinics as assigned. They will provide general and behavioral/developmental supervision and consultation as described below.

TRAINING CONTENT:

FIRST YEAR: CONTINUITY CLINIC EXPERIENCE

Each fellow is assigned and scheduled patients in routine fashion one half day per week. One clinic per month will be devoted to seeing adolescents only in Adolescent Clinic. The remaining clinics will be for general patients including a substantial number of newborns. Well child and episodic-type visits will be included. Through the group practice structure of the pediatric clinic, continuity of doctor-patient contact and communication will be stressed. Onsite supervision will be by the Ambulatory Pediatric or Adolescent Medicine staff. Ambulatory, CSU, and subspecialty staff will collaborate in selecting a number of children with a spectrum of

disabilities or chronic illness for the fellow to follow primarily. This longitudinal primary care experience with well and disabled children is considered a core component of our program and fellows are expected to follow these families throughout their 3 years.

SECOND YEAR: CONTINUITY PATIENT FOLLOW UP AND CLINIC CONSULTATION

Following the first year, general pediatric patients will no longer be assigned. The fellow will continue to follow previously assigned patients. Increasingly, s/he will have unscheduled time within the primary care half day to provide supervision and consultation for the medical and nursing students and pediatric housestaff assigned to clinic. Our experience has demonstrated the importance of providing general medical supervision to residents in order to make the behavioral/developmental teaching "stick". Thus the fellow will be on line for general supervision, but will be charged with maintaining focus and exploring avenues for teaching the b/d approach as well. The ambulatory staff is well equipped to provide effective backup in both areas.

THIRD YEAR: CONTINUITY PATIENT FOLLOW UP, CLINIC CONSULTATION, DISABILITIES CLINIC ROTATION

During the third year, continuity patient follow up and clinic consultation will continue as described. In addition, the fellow will have an opportunity to rotate through ongoing Developmental Disabilities Clinics during three months of the year. He/she will spend one month each, half day/week, attending and helping to staff the General DD, Adolescent DD, and Down's Syndrome DD Clinics. Supervision will be provided by Lucy Crain, M.D.

b.(5) PSYCHODEVELOPMENTAL ASSESSMENT

TRAINEES: as listed for clinics (III. 2a, b, c)

PURPOSE: 1) to train all disciplines in the conceptual bases and methods of psychological, educational, and speech and language assessment of children at all ages; 2) to demonstrate and teach interdisciplinary service and collaboration.

CONTENT: Trainees at all levels receive instruction in assessment in a variety of formats. The Behavioral/Developmental Core Curriculum and Literature Seminar provide didactic presentations. The Early Childhood Clinic and School Age Clinic provide case related teaching. The Comprehensive Evaluation Program provides a model of direct observation of each type of assessment and active participation in their integration into a comprehensive evaluation. Of particular note for the fellow program, the majority of patients evaluated by the CSU have some formal assessment included. It is an integral part of the fellow's activities to coordinate and receive such evaluative consultation, and to interpret it to child, family, school, and medical provider. Thus the CSU fellow learns to become familiar with the strengths and limitations of specific assessment instruments and with the orientations of assessors of different disciplines. They become skilled in selecting and utilizing such testing to optimize the validity and value of the testing to the child and family.

c. FELLOWS' CLINICAL SUPERVISION

In addition to instruction and supervision provided in the various clinics and CEP program, the pediatric and postdoctoral fellows receive individual and group clinical supervision as follows:

c.(1) INDIVIDUAL CLINICAL CASE SUPERVISION:

PURPOSE: To provide ongoing individual supervision for specific clinical cases of evaluation or treatment, as well as to follow and encourage the growth of the fellow as behavioral/developmental clinician.

TRAINING CONTENT: Each fellow will be assigned to a faculty member for intervals of 1 year each. Hourly meetings will be held at least every other week to review in brief all of the fellow's active clinical cases. A specific case or clinical problem will be discussed in depth as needed. This regular review will provide the "clinical case supervisor" an opportunity to locate areas of need in the fellow's training experience, and offer constructive feedback regarding his/her progress. It should also allow the fellow a regular opportunity to review perceived needs and difficulties, and in this way, should enhance the responsiveness of the program to the fellow's individual needs.

c.(2) GROUP SUPERVISION - FELLOWS' CASE SEMINARS:

Three clinical seminars are held each week for the combined fellow group. Each has its own purpose and content. The trainee group consists of fellows with staff invited.

i. FELLOWS' TAPE REVIEW SEMINAR

PURPOSE: This case supervision, led by Alan Leveton, M.D., occurs each Monday morning for two hours to provide consultation and direct supervision for the fellows in their ongoing clinical work. The seminar provides the fellow with the psychodynamic understanding and strategic approaches required to provide effective evaluation and counselling. Dr. Leveton's expertise in evaluating and teaching family dynamics is a central feature. The addition of CSU and clinical faculty is useful in providing a forum for sharing clinical knowledge, and in providing support and modelling for the fellows.

TRAINING CONTENT: This seminar is organized around case presentations by the fellows of their ongoing clinical cases. Typically, each presentation includes audio or video tape review of a counselling or evaluative session. Up to an hour is spent per case. Teaching is regularly both specific to the case and generalized to broader evaluative and therapeutic principles. The review of interviewing skills, aspects of normal and abnormal child and family development, and the management of common and unusual problems in pediatric development are all features of this seminar.

ii. FELLOWS' LIVE SUPERVISION:

PURPOSE: This case supervision occurs each week for four hours to provide consultation and direct supervision for the pediatric fellows in their ongoing clinical work. It provides an opportunity for direct supervision

during the actual clinical encounter. The inclusion of the entire fellow group with the teaching staff has fostered the mutual support and sharing of personal responses which we find so important in learning and doing this work.

TRAINING CONTENT: The supervision occurs each Tuesday afternoon and is divided in two parts. The initial two hours are devoted to the presentation, the interview, and the follow up discussion of a single case. The fellow, with or without staff member, performs the interview before a viewing mirror and the remaining fellows and staff. The "behind-the-mirror" team is active in assessing the clinical problem and possible interventions, and is consulted with by the interviewers prior to the conclusion of the interview. The latter two hours provide time for fellows to schedule individual cases. According to need, they will arrange to have direct supervision, or an hour for individual case review, with one of the attending faculty (Dr's. Tanner, and Gillis).

This "real time" teaching has proven of benefit to fellows especially in providing a more in-depth and longitudinal supervision of our frequently complex cases, with the opportunity to share insights and difficulties.

iii. EARLY CHILDHOOD CLINIC FOLLOWUP SUPERVISION:

PURPOSE: To instruct fellows in the particular problems of assessment and intervention for high risk or behavioral/developmental difficulties of infants, toddlers, and preschoolers.

TRAINING CONTENT: This seminar is held for one hour following Early Childhood Clinic. Supervision is by Martin Glasser, M.D. Previously seen cases are discussed. Clinical issues related to the specific cases, as well as related general issues, are discussed. Special emphasis is devoted to the assessment of normal and deviant development in early childhood, the sequelae of difficulties in parent-child attachment and family stress, and the role and resources of community agencies.

d. COMMUNITY EXPERIENCES

d.(1) COMMUNITY EXPERIENCES "NORMAL DEVELOPMENT" ---VISITS TO DAYCARE CENTERS AND SCHOOLS

TRAINEES: same as 1a. B/D Core Curriculum

PURPOSE: A. To enhance understanding of normal range of infant, toddler, and preschool development by observing and interacting with children in an environment which promotes customary behavior.

B. To broaden understanding of attachment issues by observing children and parents separate and reunite.

C. To expand knowledge and ability to evaluate daycare, preschools, grade school, and residential treatment environments by visiting 6 divergent settings.

D. To increase awareness of the impact of adults on children by observing parents and teachers and reflecting on one's own interaction and response to children.

- E. To explore impact of maternal employment on children's development by reading and participating in group discussion.
- F. To expand knowledge of community resources servicing children's needs.

TRAINING CONTENT: The trainee has the opportunity to observe and interact with many normal children. S/he evaluates and presents an overall developmental composite of 3 children. On-site teaching and supervision are provided by Child Study Unit staff.

Guided Visits - Each trainee spends a half day in 6 settings:

1. UCSF Child Care Study Center - This on-campus center has a population of 48 2-5 year olds. The children stay at the center all day. The center population is predominantly married working (or student) parents with an ethnic mix. Caregivers include Masters prepared teachers, on-the-job trained aides, and volunteer "grandmothers" who live in the low income neighborhood.
2. Grace Infant Center - This center has 12 children 6 mo.-2 years old. The children stay at the center all day. The center population includes married, professional parents with a strong ethnic mix. Caregivers have Early Child Development credentials or on-the-job training.
3. Gateway Montessori School - This class has 30 2 1/2 - 5 year olds. Most children are in extended daycare. The center population is predominantly working, middle class, single parent, families with an ethnic mix. All caregivers have Montessori training.
4. San Francisco Jewish Community Center Nursery School - This center has a play group for 2 y.o. and separate programs for 3 y.o. and 4 y.o. levels (total 140 children). Extended daycare is available. The center population is predominantly white, married, upper class with some employed mothers. Caregivers are predominantly Masters prepared.
5. San Francisco Public Elementary School - The school includes children from first through 5th grade. It comprises a very strong ethnic mix of children.
6. Sonoma State Hospital - A full day teaching experience given by UCSF Ambulatory Pediatric faculty member Lucy Crain, M.D. This is a residential treatment facility for children with severe developmental disabilities.

Seminar Experiences:

The following related didactic material is presented within the Core Curriculum and is reinforced during the site visits:

- a) growth and development of infants, toddlers, preschoolers, and school age children
- b) guidelines/strategies for evaluating development in group settings
- c) child care options
- d) guidelines for evaluating preschool/daycare environments
- e) attachment behavior - response to parental separation, to teachers, and to strangers
- f) impact of maternal employment on development

Readings

Trainees are expected to read selected articles and chapters which are included in their syllabus.

d.(2) SCHOOL PROBLEM CONFERENCES

TRAINEES: as listed for Comprehensive Evaluation Program

PURPOSE: School conferences are essential to the successful comprehensive behavioral/developmental evaluation of children, and encouraged as a regular feature of behavioral evaluation and counselling. The following purposes are served: 1) to provide evaluative information to aid in the teaching, placement and long range school planning for children with special needs; 2) to allow school and CSU trainees an opportunity to consult each other regarding the needs and progress of the child. Trainees learn: 1) the essential nature of this communication in the implementation of their evaluations; 2) the resources, orientation, and needs of schools; 3) the consultative role with respect to schools and parents; 4) local, regional, and national legislation which affect school services and program for children with special needs.

CONTENT: As noted in the description for CSU clinics (3.b (1), (2), (3)), trainees regularly attend IEP and informal school meetings following each evaluation. Ongoing clinical work is usually accompanied by regular communication with the teacher or resource specialist. The majority of children evaluated are of elementary school age, but middle school and high school conferences are experienced as well by most fellows.

d.(3) SCHOOL AND HOME ASSESSMENTS

TRAINEES: All CSU fellows

PURPOSE: The fellows develop skills in making systematic observational assessment of their patients in their daycare centers/preschools or homes.

- GOALS:
1. To broaden trainee's understanding of identified patient's "real" world and daily life experiences.
 2. To appreciate variance in patient's behavior and developmental performance when in naturalistic environment vs laboratory setting of the clinic.
 3. To incorporate principles of observation and data gathering when assessing children's behavior and development in naturalistic settings.
 4. To expose trainees to a variety of school, daycare, and home environments.
 5. To become familiar with formal assessment tools to be used in home or group environments, e.g. Home Observation for Measurement of the Environment (HOME), Nursing Child Assessment Feeding Scale, and other rating scales, process recordings, etc.

TRAINING CONTENT:

When indicated as part of a child's evaluation in Early Childhood Clinic or School Age Clinic, the fellow will join the faculty member conducting 1 to 1 1/2 hour assessments in the child's home and/or daycare/preschool setting. A review and comparison of observation will be made with the faculty member following the visit. Trainees will be expected to read pertinent related material regarding observation and recording techniques.

e. CONSULTATION

e.(1) PEDIATRIC INPATIENT CONSULTATIONS---hospitalized children, all ages

TRAINEES: Senior Fellows in CSU (2nd year Ped. & Post. Doc.), Sr. Child Psychiatry Fellows

SITES: Neonatal Intensive Care Unit, Pediatric ICU and Transplant Unit, Pediatric Nursery, Pediatric Ward, selected subspecialty clinics

PURPOSE: To offer consultative services to pediatric faculty and ward staff relating to issues of diagnosis, assessment, management, and disposition with behavioral/developmental problems of pediatric population. To instruct the fellow in the art of consultation. To familiarize the fellow with the training and orientation of the child psychiatrist.

TRAINING CONTENT: Administration of service is through CSU Director, with faculty from CSU participating in supervision with senior faculty in Psychology and Child Psychiatry in CSU offering direct service through Ward Rounds and referrals. Trainees from Child Study Unit and Child Psychiatry are assigned, in rotation, with supervisor assigned. Group supervision is weekly with senior Child Psychiatry professor and Director of CSU offering combined supervision.

Each fellow is asked to select one specialty clinic which he/she will attend weekly over a one year period as part of the consultation rotation. The team also offers a liaison function meeting with nursing staff and house staff to facilitate discussion and resolution of problems that arise on the ward. Consultation staff presents yearly in Chief's Rounds, Pediatric Grand Rounds, and Psychiatry Grand Rounds selected cases.

e.(2) AMBULATORY PEDIATRICS - SEE 2d. PRIMARY CARE CLINICAL PROGRAM

e.(3) COMMUNITY SERVICE PROGRAMS

TRAINEES: Pediatric and postdoctoral fellows

SITES: San Francisco Department of Social Services, San Francisco Family Service Agency "Respite" Program, California School for the Neurologically Handicapped, San Francisco Infant Program, Sonoma State Rehabilitation Program. Agencies listed serve families and children in San Francisco. The "Diagnostic School" and Sonoma Rehabilitation Center serve all Northern California.

PURPOSE: Consultation to agencies through off-site visits provide indirect service to children as well as generating direct service referral to CSU. Trainees are exposed to this consultation as well as to service programs in the community which offer intervention programs for high risk neonates, infants with developmental delays, children and infants who are in a vulnerable state secondary to neglect or abuse, family support services for this population and introduction to Community Networking to establish coordinated services for this population.

TRAINING CONTENT: The trainees will participate in both observation of children and interdisciplinary staffings on-site with Dr.'s Glasser or Crain.

Issues addressed will include diagnosis, rate of improvement with existing intervention, obstacles to further improvement, family support services needed, preventive services, and in selected cases, need for protective services or out-of-home placement.

Infant intervention services include multidisciplinary approach including social services, education, physical therapy, psychotherapy, speech therapy programs coordinated with the health provider. With respect to the Department of Social Services and "Respite" Program, trainees will have the opportunity to observe and participate in ongoing community mental health consultation as

f. RESEARCH

The research curriculum for CSU fellows is divided into: a) coursework; b) core seminar and tutorials; and c) individual projects. The sequence and total time commitment of these components is depicted in the following table, and described below. Postdoctoral fellows will participate primarily in the Social Epidemiology course and Core Research Seminars with modified projects as noted (G.2.a.).

f1. TABLE 1. : RESEARCH CURRICULUM FOR CHILD STUDY UNIT FELLOWS

<u>COMPONENTS</u>	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>
1. Core Research Seminar.....*	*	*	*
2. School of Public Health Seminars, UC Berkeley			
a. Social epidemiology.....*			
seminar			
b. MCH courses.....*			
3. Experimental Design Course.....*			
4. Research Tutorials	*	*	*
5. Research Project			
a. Conception and design.....*			
b. Completion	*		*
c. Presentation and publication.....*			*
TOTAL PROPORTION OF TIME ALOTTED TO RESEARCH ACTIVITIES	25%	50%	25%

f.2. COURSES IN EXPERIMENTAL DESIGN AND SOCIAL EPIDEMIOLOGY

2.(a) Experimental Design Course

First year CSU fellows will also take a graduate level course in experimental design taught by Dr. Nancy Adler, Professor of Health Psychology, UCSF. This course is intended as a primer in research methodology and experimental design in the behavioral sciences. It meets for 1 1/2 hours per week for 6 weeks and is attended by Adolescent Medicine as well as CSU fellows. Topics covered include: 1) Introduction to research; 2) Designing researchable questions; 3) Types of variables; 4) Evaluation research; 5) Research techniques; 6) Experimental design and data analysis; 7) Validity of research; 8) Ethical issues.

2.(b) Seminars and Courses at the School of Public Health, University of California, Berkeley

Beginning in the 1986, 1987 academic year, Dr. Leonard Syme (Professor of Epidemiology, UCB) and Tom Boyce will develop and teach a one semester seminar in social epidemiology, to be offered through the Epidemiology Program, School of Public Health. Course participants will include doctoral and masters students in epidemiology and first year fellows from the Child Study Unit. Participants may also include students from the Department of Maternal and Child health, as well as other students from the various programs of the School of Public Health. The content of the course will be an overview of current work on the psychological and social determinants of human disease. Topics covered will include: stressful life events, the conceptualization and measurement of social support, behavioral factors in coronary heart disease, psychoneuroimmunology, health correlates of social class, and the role of personality factors such as hardiness in the individual's resistance to disease.

f.3(a) Core Research Seminar

The CSU Core Research Seminar will consist of two 2-hour sessions per month designed to convey the basic principles of epidemiologic research and to provide a forum for critical discussion of faculty and fellow research projects. In general, the first session of each month will consist of didactic presentations of core content areas, and the second session will be devoted to literature reviews, discussion of sample research problems, and presentation of evolving research ideas and project. The content of the didactic sessions is summarized in Table 2 below. Child Study Unit fellows will take part in the Core Research Seminar during all three years of their fellowship period and during the third year will be expected to participate in the teaching and leadership of the seminar. A set of primary and secondary reading resources will be provided to fellows and will form the background information for each seminar session. The seminar content will focus heavily on issues of research design, measurements of association, and sources of bias in clinical research.

f.3(b) Research Tutorials

In addition to seminars and course work, fellows in the second and third years of training will meet with CSU faculty on a one to one basis for twice monthly tutorials in research methodology. These sessions will focus specifically on the ideas and methods inherent in the fellow's individual

research project and will allow faculty to have more immediate and sustained involvement in the design and conduct of fellows' research. Tutorials will be pragmatically oriented and interactive, rather than didactic, in their content and style. It is anticipated that the tutorials may be used for a variety of purposes, but activities would include: discussion and clarification of research questions, development of questionnaires and measurement instruments, teaching the management and editing of computerized data bases, review of analytic strategies appropriate to the fellow's research, and assisting in the writing and preparation of abstracts, oral presentations, and publications.

f.4 Individual Research Projects

Child Study Unit fellows will design, conduct, and report on an original research project, carried out over the course of their three training years. The development and completion of individual research projects will be viewed as the mainstay and central focus of the research curriculum, around which all other research training components are oriented and deployed. We anticipate that, while fellows may be involved in the ongoing research of CSU faculty, fellows' projects will constitute separate, individual investigations requiring the formulation of original research questions and the indepth analysis of existing or newly collected data. Much of the content of individual projects will be determined by fellows' areas of interest, but all projects will be contained within the general scope of behavioral pediatrics.

In identifying a project, fellows will have the opportunity either to develop an entirely new study or to explore a new set of questions within an existing data set. Population in which new studies might be developed include the Child Study Unit patient population, subsets of CSU patients (such as children with enuresis), patient populations of the General Pediatrics Clinic or the Adolescent Medicine Clinic, and other childhood research populations with ties to UCSF (e.g., the Child Study Center at UC Berkeley). In addition, several large data sets derived from CSU faculty research projects will be made available for fellows' studies.

In the third training year, as the fellow's research project is being prepared for presentation and publication, faculty will assist in the development of fundable proposals based on the fellow's current research findings. Such proposals if funded could then be carried with the fellow into his or her first full time academic appointment.

f.5 TABLE 2.: CONTENT CORE RESEARCH SEMINAR

- I. Time requirements: two 2-hour sessions per month for 12 months
- II. Seminar participants: CSU fellows, CSU faculty, pediatric residents
- III. Reading sources
 - A. Primary
 - 1. Dubos R: Man Adapting
 - 2. Friedman GD: Primer of Epidemiology
 - 3. Michael M, Boyce WT, Wilcox A: Biomedical Bestiary: An Epidemiologic Guide to Flaws and Fallacies in the Medical Literature
 - B. Secondary
 - 1. Fletcher RH, Fletcher SW, Wagner EH Clinical Epidemiology: The Essentials
 - 2. Lilienfeld AM, Lilienfeld DE: Foundations of Epidemiology
 - 3. Sackett DL, Haynes RM, Tugwell P: Clinical Epidemiology: A Basic Science for Clinical Medicine
 - 4. Feinstein AR: Clinical epidemiology: The Architecture of Clinical Research
- IV. Content: one session per month of didactic presentation; one session per month of problem-solving, literature review, discussion of research ideas.
 - A. Models of disease etiology: historical and current
 - B. Psychosocial and behavioral (factors in illness) two sessions
 - 1. Stress and social support
 - 2. Biological mechanisms
 - C. The architecture of clinical research (two sessions)
 - 1. Case series, case-control studies
 - 2. Cohort studies, randomized controlled trials, calculation of risk measures
 - D. Associations and causal relationships (two sessions)
 - 1. Correlation and study design
 - 2. Confounding
 - E. Sampling in epidemiologic research
 - 1. Clinical significance versus statistical significance
 - 2. Alpha, Beta, type I and II errors
 - F. Sources of bias (two sessions)
 - 1. Bias versus random error
 - 2. Selection bias and Berkson bias
 - 3. Misclassification (measurement) bias
 - 4. Covariable bias
 - G. Evaluation of diagnostic tests
 - 1. Sensitivity, specificity
 - 2. Positive and negative predictive value
 - H. Critical analysis of the medical literature

g. EXPERIENCES IN LEARNING TO TEACH BEHAVIORAL PEDIATRICS

TRAINEES: Pediatric and Postdoctoral fellows

Purpose: The fellows will learn the necessary knowledge, skills and attitudes to become effective teachers in the behavioral aspects of children's care.

Training Content: The CSU curriculum is taught via a variety of teaching modalities, including didactic lecture, group discussion, role playing, demonstration interviews, and review of trainee-patient contacts by audio/videotapes. These techniques will be modeled by the faculty and experienced by the fellows. In addition to this "informal" gleaning of various approaches and styles, the fellows will participate in a tutorial of teaching techniques instruction design over a three-year period. The content will include a formal study of learning principles and instructional design and evaluation. It will also provide ample opportunity to develop skills and confidence in implementing both didactic and clinical teaching concepts.

In the first year, the fellow gains experience as a teacher in the Comprehensive Evaluation Program in the role of a consultant to 2-3 trainees (medical students, nursing students or pediatric residents).

The teaching experiences in the second year are outlined below:

(a) Tutorial in Teaching Methodology:

Second year fellows will complete a tutorial taught by Dr. Edwin Rosinski, Ph.D., Director of the Office of Medical Education, UCSF. This course of instruction, semester in length, will cover learning theories and principles, teaching modalities, curriculum design, evaluation methods, and approaches appropriate for various levels of trainees. (For further detail, refer to Methodology: Didactics--Tutorial in Teaching Methodology).

(b) Pediatric Inpatient Consultation: The fellow will be doing these behavioral consultations with the pediatric housestaff. S/he will be teaching behavioral aspects of pediatric care for identified patients to the residents responsible for their care.

(c) Family Interviewing Seminar: The fellow will lead two 2-month series of these seminars. Each two-month series is taught primarily for the pediatric residents during their rotation in the Child Study Unit.

(d) School Age Clinic and Early Childhood Clinic: The fellow will be evaluated by seeing patients in these clinics. S/he will have the opportunity through these demonstration interviews and case discussions to teach junior trainees aspects of behavioral pediatrics.

(e) Resident Supervision in the Pediatric Primary Care Clinic: Second and third year fellows will spend a half day a week as consultant in the general pediatric ambulatory care setting. This is intended to provide the opportunity to apply behavioral/developmental skills and knowledge in the

primary case setting as well as to serve as consultant to pediatric trainees. The fellow is supervised by the CSU and/or Ambulatory Pediatric staff.

(f) Teaching Seminars in the Outpatient Clinic at UCSF and SFGH: Specific group discussions and didactic lectures of selected behavioral pediatric topics will be presented by the 2nd and 3rd year fellow. These topics will include: behavioral aspects of chronic illness, common behavioral clinical entities, developmental screening.

The third year experience in learning to teach behavioral pediatrics are as follows:

(a) Fellows Literature Seminar: The fellow will be responsible for participating with faculty in curriculum design, implementation and evaluation. This will include utilizing various teaching principles and modalities while providing indepth instruction of behavioral/development theory and research.

(b) Core Teaching for the Residents in the CSU: The fellow will participate as a co-teacher of residents in the Behavioral/Developmental Core Curriculum.

(c) Comprehensive Evaluation Program: The fellow will be responsible for the following teaching: orientation of the trainees, tape reviews of the family interviews, leading the Teaching Conference, and trainee teaching following the Summary and Planning session.

(d) Seminars or Workshops for Community Agencies: The fellows will participate as group leaders and didactic teachers in these seminars and workshops.

(e) Teaching Seminars in the Outpatient Department Clinic at UCSF and SFGH:

(f) School Age Clinic and Early Childhood Clinic:

(g) Resident Supervision in the Pediatric Primary Care Clinic:

} See description
for second year
fellows above

h. ADMINISTRATIVE EXPERIENCES

Participation in staff meetings: The fellows will gain an administrative perspective from attending weekly staff meetings in the Child Study Unit. At times, the fellow is an active participant in these meetings, while, at other times, he/she is an observer of the administrative decision-making process. By their attendance, fellows will be exposed to the structure, pressures, and politics of a larger system; budget issues; the balancing of service and teaching obligations; and group dynamics.

Administrative responsibility in clinic management: The fellow will, in the third year, have two three month rotations as the co-administrator in the School Age Clinic and the Early Childhood Clinic. In that role, the fellow will take part in patient screening, patient scheduling, and clinic decision making.

i. OPPORTUNITIES FOR SELF UNDERSTANDING

As noted in chart 2, we anticipate that many CSU activities foster personal understanding and growth. The following seminar is specifically designed to facilitate this for fellow trainees.

PERSONAL GROWTH SEMINAR

PURPOSE: To develop a deeper understanding of the interplay between one's personal development as a helping professional and the emotional needs of those being helped. To appreciate behavior problems as a manifestation of adaptive and growth processes in families and children. To appreciate this same process at work in ourselves - as individuals and as a working group.

TRAINING CONTENT: Selected readings in normal growth and development, family therapy, adaptation, communication and related topics. Authors include Erik Erikson, Milton Erikson, Jay Haley, Murray Bowen, Virginia Satir and others. Format includes group discussion, case presentation, didactic teaching, live supervision with one way mirror and role playing. Under Dr. Leveton's supervision the group examines the dilemmas faced in the human growth cycle. Through recalling and sharing personal experiences with birth, death, illness, handicaps, parenting, etc., group members develop a sense of the wide range of possibilities inherent in the adaptational process. Time is also devoted to examining emotional reactions to situations we face as clinicians and to use this knowledge to improve our ability to relate to patients. Mixing fellows and faculty enables trainees to appreciate that many of the personal issues they face are shared by people with more experience and training.

H. PLAN FOR MONITORING AND EVALUATION

Evaluation is an essential component of any training program. Yet published accounting of behavioral pediatric training programs is sparse. Phillips and Friedman (1-4) stand alone in their attempts to document the impact of residency and other postdoctoral training in behavioral pediatrics. Moreover, they acknowledge the difficulties and limitations in availability of instruments, such as self-report measures and short term changes. The director of evaluation and research for the American Board of Pediatrics has accurately described the many difficulties in assessing pediatricians knowledge of behavioral pediatrics.(5)

We propose to monitor and evaluate our training program via a variety of internal (or subjective) and external (or objective) evaluation modalities in order to determine the degree to which the program's goals and objectives have been met. We will examine changes in trainee's attitudes, knowledge, and behavior.

I. EVALUATION OF BEHAVIORAL/DEVELOPMENTAL PEDIATRIC FELLOWS, AND POST-DOCTORAL PSYCHOLOGY AND NURSING FELLOWS:

A. INTERNAL EVALUATION

1. Direct observation and audio/videotape review---

The trainees receive continual supervision and feedback in all aspects of training from the integral interaction with the faculty. The few number of trainees and the almost daily incorporation of such supervisory techniques as one-way mirror observation and audio/videotaping also add to the strength of the teaching program. Thus, there is optimal and ongoing monitoring of the trainee's growth toward meeting the program's objectives which focus on attainment of knowledge and personal growth, and skills related to clinical and research expertise, and leadership.

2. Case presentations and written reports---

On an almost daily basis, trainees are required to present oral and written summaries of their cases to various professionals, including faculty and other trainees as well as colleagues and community agencies. In addition to assessing knowledge and clinical skills, this allows for an ongoing assessment of developing leadership qualities.

3. Trainees' attitudes toward behavioral clinical entities---

At the outset of their first year, and then annually, fellows will complete a questionnaire which assesses their self-perception concerning 16 behavioral clinical entities. The rating scale explores their competence, knowledge of resources, ability to counsel parents, desire to learn more about and relevance to one's future career. The scale is a modified version of a rating scale developed by Phillips and Friedman (1)

4. Periodic performance evaluation---

In addition to periodic faculty review of trainee progress, a formal bi-annual evaluation will include a written evaluation via a rating (unsatisfactory, satisfactory, or superior) scale which utilizes the program's goals and objectives as the performance criteria. The trainee's strengths and areas for growth for each criteria will be described. In each feedback summary session, self-evaluation by the trainee will be equally cogent. The trainee will complete the same rating scale to facilitate reflection on and review of his/her performance.

B. EXTERNAL EVALUATION

In a contributing effort to document the value of behavioral pediatrics training programs, several external evaluation methods will be employed:

1. Entrance and annual analysis of family interviews ---

Blinded expert clinicians will evaluate videotapes of family interviews conducted by the trainees at the outset of their fellowship and annually thereafter. Various aspects of both content and process will be examined, including sensitivity to and response to individual family members; ability to include all family members; nonverbal communication; facility and appropriateness of introduction, body, summary, and closure components of the interview; appropriate play materials available; ability to communicate with clarity and without jargon; recognition of the discussion's impact on family members; and ability to cope effectively in stressful situations, e.g. angry or anxious families.

2. Entrance and annual interview of trainee's attitudes---

Nonvideotaped interviews with the fellows will be conducted by an outside evaluator, Dr. Edwin Rosinski, Ph.D., Director of Medical Education, UCSF, to explore perceptions about their future career goals, learning needs, and movement toward program goals and objectives.

3. Completion of accredited course work---

Trainees will be expected to successfully complete the requirements of accredited courses. These include courses in behavioral and social sciences, developmental psychology, public health, and clinical research methodology and medical education. Additionally, the trainee's participation in group discussion and formal presentations will allow faculty to evaluate the trainee's growth toward the goals of research, knowledge, and leadership. (See Program Methodology Section for Course Descriptions).

4. Behavioral/Developmental Core Curriculum test scores---

The trainees will complete a pre/post test of 76 questions which assess short-term changes in knowledge about normal development. The test content is drawn from a core curriculum of 18 seminars and 6 community experiences (See Program Methodology section, 3.a(1)., page 22, for Course Description).

5. Written feedback from residents---

During the second and third fellowship years, the pediatric fellow will participate in teaching portions of the curriculum including the Behavioral/Developmental Core Curriculum, Family Interviewing Seminar, Core Research Seminar, Literature Seminar as well as the three clinics (Early Childhood Clinic, School Age Clinic and Comprehensive Evaluation Program). Residents complete a written evaluation of each core curriculum seminar as well as each portion of their rotation experience. These measures will address the leadership, knowledge and research objectives.

6. Behavior conditions test scores---

At the outset and upon completion of the fellowship, the fellows will take a 60 item multiple choice behavioral pediatrics inventory developed by Friedman, and Phillips (2). They will also complete the 30 item "Addendum to American Board of Pediatrics In-Training Exam" (3). The questions address various clinical aspects of behavioral pediatrics covering all pediatric age groups. This evaluation modality will assess changes in knowledge.

7. Research methodology test scores ---

At the outset and upon completion of the fellowship, the fellows will take a 32 item multiple choice inventory developed by Michael Plant, Ph.D., Associate Professor of Pediatrics, University of Maryland. The questions probe knowledge of key concepts in research methodology.

8. Parent satisfaction questionnaire ---

During each year of the fellowship, a third of the trainee's individual patient cases will be randomly surveyed. After the case is closed, the faculty case supervisor will send parents a questionnaire modified from the questionnaire developed by Lewis, et al (6). This tool will evaluate parental perceptions of the trainee's communication skills and their overall satisfaction with the trainee's performance.

9. Presentations at research conferences ---

Third year fellows will make formal presentations at local, regional, or national conferences regarding the research completed during their fellowship. This measure will be an explicit demonstration of attainment of program goals.

10. Career Positions---

Upon completion of and two years following the fellowship, the trainee's career positions will be examined and inquiry made to their program director regarding performance and competency. A written self evaluation and review of curriculum strengths and deficits will be elicited from the graduate.

In conclusion, the measures described above will provide a comprehensive internal and external assessment of changes in the fellow's attitudes, knowledge, and behavior toward the program goals and objectives. See Chart 3, page 50, for a schematic view of which method(s) evaluates and monitors each objective.

II. EVALUATION OF PEDIATRIC RESIDENTS

Because the pediatric residents will complete some aspects of the fellow's curriculum during their six week rotation it is expected that they will meet several of the curriculum objectives. Likewise, several of the evaluation and monitoring methods are applicable although the program expectation is for residents' achievement of a foundation rather than an expertise in behavioral pediatrics.

The list below outlines the methods to be used.

A. Internal Evaluation

1. Direct observation and/or audio/videotape review---(Refer to fellows section above for description)
2. Case presentations and written reports--- (Refer to fellows section above for description)
3. Performance evaluation--- Midpoint and at the completion of their rotation, faculty review of each resident will be conducted and feedback given. Rating scales will be completed at the end of the rotation.
4. Entrance and exit interviews of residents' attitudes--- Interviews will be conducted by one of the behavioral pediatrician faculty to explore individual learning needs, goals, interests, and past related experiences. The exit interview will also allow the opportunity for discussion and feedback about program content and process.
5. Resident's written critique--- Residents will complete a written evaluation of the curriculum and faculty via two forms. The first form completed during the rotation, will include questions regarding recommendations and suggestions for each of the Core Curriculum seminars and Community Experiences. This form will also have a five point rating scale to critique content, presentation, and relevance to clinical practice, as well as the pertinence, stimulation, and depth/breadth of the required readings.

The second feedback questionnaire will be completed at the end of the rotation. This form elicits information regarding strengths and weaknesses and suggestions for each component of the curriculum. On a 5 point scale, the trainee will be asked to rate the quality of teaching and the value of each curriculum component. Open ended questions elicit input regarding impact of rotation on their clinical practice, quality of assigned readings, and praise or criticism for specific faculty members.

Completed evaluation forms will be reviewed by involved faculty at the end of each rotation in order to modify the curriculum content and format as well as teaching style.

B. EXTERNAL EVALUATION

1. Completion of accredited course work--- This will include the Behavioral/Developmental Core Curriculum and Family Interviewing Seminar series.

2. Behavioral/Developmental Core Curriculum test scores---(refer to fellow section above for description)

See Chart 3 for a schematic view of which method(s) evaluates and monitors each objective.

III. EVALUATION OF PEDIATRIC INTERNS

A. Trainees Written Critique

Interns will complete a critique of their three day experience in the CSU in order to evaluate the value and quality of teaching for each component of their curriculum. In addition to a 5-point Likert Scale, open ended questions will be included to elicit trainees' perceptions of the curriculum's strengths and weaknesses.

IV. EVALUATION OF MEDICAL STUDENTS AND PEDIATRIC NURSE PRACTITIONER STUDENTS

The following modalities will be used to evaluate the week long training experience for third year medical students and pediatric nurse practitioner graduate students:

- A. Direct observation
- B. Entrance and exit interviews
- C. Performance Evaluation

(Refer to Fellows & Residents Sections above for description)

The faculty member and the clinical supervisor most closely involved with these trainees will complete a written summary which includes the following performance criteria: skills in history taking, organization of relevant information, patient presentations, and summarizing findings both to the family and in letter format; ability to relate to child, family, and staff; and ability to view child's strengths and weaknesses and as part of a family system. Feedback regarding their performance will be given by the CSU faculty coordinator.

D. Trainee's written critique

Each trainee will rate the usefulness and teaching quality of each component of their learning experience. Open ended questions will be included to obtain the trainee's perceptions of how their CSU experience will impact on their future professional role as well as ideas to modify the program.

V. CONTINUING EDUCATION PROGRAM FOR COMMUNITY PROVIDERS (MD'S/PNP'S)

A. Written Critique

Upon completion of a one day continuing education program, participants will be asked to complete a questionnaire which surveys the clinical relevance and quality of teaching regarding all lectures and workshops in the program of each presentation. Open ended questions will be included to elicit ideas for planning future program topics and format.

B. Knowledge post-test scores

The participants will complete a multiple choice test to assess short-term knoweldge of material presented in the program.

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G. Program Methodology

In this section we have divided teaching methodology into the 6 main areas described under Major Goals I through VI (see page 32) and Chart III (page 19).

The "core" program for all Child Study Unit trainees will be described first. This part of the program is provided for all medical students, graduate nursing students, residents, and CSU fellows. See (a) page 7 and (IVa) Chart III, page 19 . In this program we will also describe the details of teaching family evaluation interviews, pages 38-40 , and a school age child's behavioral and education screening interview, pages 41-43.

CORE PROGRAM

IV A. (See Chart III , page 19).

"Core" training for all CSU trainees.

Training in multidisciplinary evaluation and care of school-age children with a learning disorder and/or school failure - the Learning and Language Disorder "LLD" Program.

Since 1960 (and with major support from 1965 to the present from the Maternal and Child Health Program, Health Services Branch H.H.S.) the Child Study Unit has evolved a multidisciplinary team who have developed a demonstration training and service program for children with learning disorders. This has become a core teaching program in behavioral pediatrics for almost all trainees in the Child Study Unit. As a result of their experiences in this program medical and graduate nursing students, pediatric housestaff, fellows, psychologists, social workers, special education teachers learn to appreciate the biopsychosocial factors that impact on children's development and learn prevention and/or management strategies by collaborating with other health and educational professionals. Almost all become enthusiastic child advocates. Trainees over the years have given high ratings to this training experience. (See pages A1-A15) for this year's rating and trainee comments.) Through former housestaff and fellows trained in our unit and health professionals visiting the CSU, this program is now nationally and internationally recognized for its special service to children and their families and for its training program for physicians.

Patients:

Approximately 80 per year

Age Range:

5 to 13 years

Trainees:

2	CSU pediatric fellows
15	Pediatric residents PL I
11	Pediatric residents PL II
6	Pediatric Primary Care residents
17 (conf. only)	Mt. Zion Pediatric Residents PL I, II, III
90	3rd year medical students
17	UCSF graduate nursing students
2	Post-doctoral psychologists
30 (conf. only)	Other psychologists, nurses, social workers, other health professionals
	Fellows in Maternal and Child Health, teachers in special education

Faculty:

4	Pediatric faculty; Baum, Gofman, Rowe, Tanner
1	Neurologist consultant; L. Whitsell
5	Psychologists; Harvin, Kennedy, Crittenden, Gillis, Durandetto
1	Nurse specialist PNP; P. Johnson
1	Educational specialist; A. Whitsell
2	Speech and language consultants; R. Flower, C. Friedenberg
2	CSU fellows - 2nd year
1	Child Life Worker

Facilities used:

This program is conducted in the Child Study Unit and Pediatric Clinic, the Pediatric Reading and Language Development Clinic and the Speech and Audiology Clinic at UCSF Medical Center.

Purpose:

1. To give the trainees an opportunity to study one child and her/his family in depth to learn the many biological, psychological and social factors that influence a child's development. By following a child over four consecutive days the trainees have the unusual opportunity to observe the child's function and behavior, including coping behavior, in different settings, at different times of the day, and with different people.
2. In this process almost all the trainees become the child's ally and advocate.
3. Provide the trainees with a framework to learn about normal child development and common deviations in development and learning; to see the changing developmental signs on the child's neurological examination as they relate to neurodevelopment.

4. Furnish them with the experience of being part of a multidiscipline team so that they may develop understanding of other professional roles in evaluating and managing children's bio-psycho-social problems. These professions include the educator, psychologist, speech and language consultant, social worker, nurse, pediatrician.
5. Provide them an opportunity to observe family interviewing and gain some understanding of family communication systems; learn the essentials of a family evaluation interview.
6. Demonstrate the impact of a difference in the child's development on the family and school and the effect of the resultant interaction on the further development of the child.
7. Give them teaching and practice in how to convey ^{findings} ~~feelings~~ and recommendations to children and families in a manner that is understandable and usable.
8. Give them teaching and practice in integrating findings into a bio-psycho-social profile of a child's strengths and weaknesses in functioning so that they can give a concise and clear presentation and write a concise and clear report for other health professionals.
9. Provide an opportunity to become acquainted with community resources that may assist in management.

Referrals:

Children are referred by faculty and housestaff from the Pediatric Department, from Bay Area pediatricians and family physicians, school personnel, agencies and parents. Parents are asked to call us so that this four-day study can be explained to them; they then receive forms for themselves, the school and the child's physician to complete and return. This preliminary information which is essential to our study and service program, is screened by a small multi-disciplinary committee from the CSU staff to decide if our study would be appropriate and useful or whether other recommendations are useful.

With changes in children's health problems in the 70's we are finding that the classical specific learning disorders in the middle class families are being managed by the school systems and being seen less and less in this program. Our present patients usually come from families with many social and interactional problems and the patients themselves frequently have other physical health problems. These problems have included hearing loss, vision loss, asthma, renal disease, osteogenesis imperfecta, seizures, spina bifida with incontinence and hemiparesis, dysarthria, oral-facial anomalies, short stature, chronic eczema, previous severe neglect and abuse, encopresis, enuresis, precocious puberty, cystic fibrosis, congenital heart disease. This program offers these children and families comprehensive attention to the bio-psycho-social issues involved in their care.

Service Given:

The child is seen for a complete history and physical examination, a child evaluation interview and educational screening, an extended neurological examination, psychological, educational, hearing, speech and language evaluations and an EEG, if indicated. The family, including child and siblings, is seen for a family evaluation interview. After a staffing by all consultants, the child and family are seen for a summary and planning session. A report letter is written which the parents, and often the child too, return to go over and edit. A copy is given to them and other copies are sent with their permission, usually to the school, the physician and appropriate agencies. A school conference is then held, attended by involved CSU staff, school staff and parents, to join efforts in providing for the child's educational and social needs. Many of these families are followed in the CSU for a period of family counselling. Some of the children from San Francisco and nearby are also seen for supplementary educational therapy in our Pediatric Reading and Language Development Clinic.

We are impressed with how many children and families are helped by this program. We have a long waiting list for this service.

Training:

1. The patient is assigned to a pair of trainees (often two medical students, or two interns, or a pediatric resident and graduate nursing student). Referring patient information from the parent, doctor and school and reprints of papers on learning disorders and syllabus material is provided to the trainees the week preceding their CSU rotation.
2. An orientation teaching session, giving the trainees experiential exercises in what is involved in learning to read, how it feels to be a disabled reader, how parents feel when the child is having learning problems, and explaining the trainees' responsibility, begins the week.
3. Trainees serve as primary physicians, following a medical outline stressing development in taking the history and perform a physical examination.
4. Consultant from CSU reviews trainees' history and physical examination, acts as the consultant to the trainees for the remainder of the week and directs the child interview, the family interview, the preconference review for staffing, the summary and planning meeting with child and family and the follow-up conferences. The consultant is usually one of the faculty when the trainees are fellows or residents. Following the experience of being a trainee for 2 or 3 weeks and after some training in family interviewing, the residents and fellows then act as consultants for the medical student trainees. Thus they get actual experience in conducting child interviews, neurological exams, family interviews, summary & planning conferences.

5. Child Interview and Educational Screening is directed by the CSU consultant with the trainees assisting in some of the questioning and testing. The child's coping behavior under stress is especially observed as the interview proceeds from informal play-discussion to more formal screening for reading, spelling and math. From this screening the trainees learn what is expected in learning in normal children and how to screen for delays in learning, language and academic skills in the school age child. See pages 41-43
6. Family Evaluation Interview is attended by patient, family and siblings. With changes in family structure we frequently see divorced parents, "boyfriends", "girlfriends", grandparents, foster parents in these interviews. This interview is conducted by the CSU consultant. The outline of the Evaluation Family Interview (see page 38-40) is used as a guide. This interview is videotaped and is reviewed with one of the CSU faculty for further teaching purpose for the consultant and his/her trainees.
7. Neurological examination is conducted by the consulting neurologist or the CSU consultant (after training with the neurologist). This examination stresses the importance of developmental signs that change with the growing child.
8. Psychological evaluation by the CSU psychologist is observed by the trainees who thus become acquainted with how a pediatric psychologist assesses cognitive, perceptual motor, language, visual and auditory skills and personality and social skills. The trainees are oriented to the common instruments used, are encouraged to question their assets and shortcomings for their own particular patient and to review their patient's functioning with the psychologist.
9. Educational evaluation is conducted by the educational specialist who demonstrates what the child is achieving in terms of reading accuracy, comprehension and speed, spelling, writing and math skills. In addition, the trainees are helped to see how the child learns best, how the child copes with stress. Effort is made to demonstrate the academic level where the child is successful, what motivates his/her efforts. An effort is made to teach the child something new at this level.
10. Hearing, speech, and language evaluation is conducted by the Speech and Language Consultant who demonstrates for the trainees how their patient's speech and language compares to that expected in the normal range. Through this demonstration the trainees learn about oral and non-oral language development and its great importance in academic and social learning.
11. Preconference review is held with the CSU consultant to integrate and organize observations and findings for presentation, to formulate tentative impressions and recommendations and pose questions for consultants for discussion. These presentations, which are the trainees' responsibility, must be brief and well organized and require much thoughtful help from the consultant.

13. Staffing conference with the multidiscipline team and trainees to summarize and integrate findings and make recommendations for management.

14. Presummary session with CSU consultant and trainees to formulate and practice (often by role playing) how they will present findings and recommendations to the child and his/her parents. Emphasis is made in using simple terms, examples, and getting feedback from child and family and not overwhelming them with too much detail or too many recommendations.

15. Summary letter is written with the help of the CSU consultant and is reviewed with child and parents in a subsequent appointment which also allows for a check of their understanding of findings and a check of progress and planning.

16. School visit attended by CSU staff (usually educational specialist, nurse specialist, CSU consultant and trainees), parents and school personnel. This affords the trainees an opportunity to observe and take part in a cooperative effort of health and educational professionals to help a child with a school problem and to learn about special programs in schools. This school contact is made (with very rare exceptions) for every child seen in this program.

During the week's evaluation the trainees are encouraged to consider the tasks the child is being asked to perform at school in terms of the skills and behaviors required for success and then to evaluate the child in terms of strengths and weaknesses in these skills and behaviors s/he brings to the tasks. The family is also evaluated in terms of the strengths and weaknesses in helping the child to more positive growth*to deal with his difficulty. After the school visit the school can likewise be evaluated in meeting the needs of children with special problems.

FAMILY EVALUATION INTERVIEW
(suggested outline)

Child Study Unit
Department of Pediatrics
UCSF

Consultant:

(Explain to your trainees that you will be conducting the interview and will call on them for statements of empathy and for feedback to family at end of interview.)

Explain purpose of meeting together with the whole family - try to get across that we find what happens to one family member affects the other family members. As families are going through experiences together they are also sending each other messages about their feelings of pleasure, pain, happiness, sadness, worry, etc. We are going to explore with them how they get these messages across to each other. Early in the interview help them understand that we operate on the basic philosophy that parents are trying to do the best job they can in terms of their own circumstances and understanding - that we are not going to be judging or blaming or trying to determine who is right and who is wrong.

Observe family communication system and family alliances, how they arrange their seating, who speaks for whom, who supports whom.

It is important very early in the interview to discuss issues that include all family members so that the identified patient is not singled out as the only one talked to or talked about. As much as possible (considering that this is the first interview and perhaps the first time this family has discussed such issues together) encourage statements one family member makes about another to be directed to that member.

Remember this is an evaluation interview. The problems brought up should not (and cannot) be solved in this 1½ hour interview. But they can be pinpointed as important and that they can be discussed more on Thursday at the Summary and Planning meeting as to what might be done to start working on them.

Give the family members permission to have feelings, especially "negative" feelings.

e.g. One way to start becoming aware of the family communication system might be to state we all have times when we feel good about ourselves and times when we feel bad - can each member tell the others in turn how s/he can tell if the other has had a successful or hard day at school or work -- what signals does he get -- how does he find out what happened?

This may open up avenues to explore:

1. How husband, wife, children know when each are upset and worried? Do they find out the cause for such? How? What do they do? or How would they like it to go instead?
2. How much parents and sibs are aware of what child may be feeling in classroom when he/she can't do the assignments. How would they feel in such a situation? Have them check out if child feels this way.

Family Evaluation Interview (cont'd)

If family can't come forth with empathy, this may be an area where the trainees can be supportive and verbally empathize with patient's situation and feelings and check this out with the child.

We find many children with learning problems react to frustration, embarrassment, criticism and teasing with much anger:

3. Explore how this anger is expressed (what options does the child have for expression in school - at home). Can parents accept this? How others in family express anger? How do parents find out the cause of the anger?
4. Ask parents -- "When you were a child, what did you do when angry? Whom did you go to for help when you were worried or frightened? The answers may show what practice or help parents had in expressing anger or talking about worries or fears as they grew up.
5. When the patient and/or sibs are young men or women what do they parents want them to do when angry? (Are parents aware of their goal in this important area of parenting?)

Sometime in the interview -- especially if the discussion has been concentrating on more "negative" kinds of feelings -- it is important to look at more positive areas. Children, like adults, need to have feelings of success. In childhood much of this feeling is the result of the parents' reaction to the child.

6. Ask patient and sibs in turn: "Can you tell when mother/father are proud of you? How can you tell? Tell him or her some of the things that make them proud of you."

7. Ask each parent to tell child and sibs what they do that makes them proud. What do they feel are their good points?

In both question 6 & 7 if no answer is forthcoming it is tempting to "save" the child or parent by offering your own view of the child's successes. It might be more helpful to parents to ask what it is like for them to (a) hear child say he can think of nothing parents are proud of or (b) for them not to see any success for their child, and then suggest this is something that might need some attention and help.

8. As a family what do you do for fun? Do patient and mother or patient and father have any special pleasurable activities they share? Do parents have any pleasurable time with each other? Do parents have time to pursue any of their own interests?

9. Ask each parent to tell:

Where each was brought up?

How many in family and where s/he fit chronologically?

Does s/he remember his/her childhood as basically happy or unhappy and why?

How far did each go in school? How was school in terms of success or difficulty?

*Is there any way each would like to parent (raise) their own children differently than the way they were raised? How has it worked out?

*This is often a key question re the parents' "dream" of their role as parents and whether the dream is coming true.

Family Evaluation Interview (cont'd)

10. Parents sometime disagree on some aspect of management of their child.
How do the parents differ in the management and discipline of the children? What happens? Who is mainly responsible for discipline?
11. Who helps with homework? How does it go?
12. When the parent says "no" to the child and/or sibs about something they want, what happens?
13. What responsibilities do the children have? What happens if they won't do them?
14. Who in the immediate family do patient and sibs take after? In what way?
15. How do parents understand child's school problem? Do they see it as motivation, lack of ability, lack of teaching? Do they blame themselves, child, teachers? Are they confused by labels such as neurologically handicapped, perceptual problem, dyslexia, brain damage, etc.?

Despite our effort to avoid being judgemental or blaming, parents frequently have unvoiced questions after the interview as to how we are seeing them as parents. It is important to try to end the interview on a positive note by asking each participant, including the students, where they were especially touched by any family member, family situation. (E.g. most of these families are very caring for each other - but their messages of caring don't seem to be coming across to each other.)

INTERVIEW FOR CHILDREN
Child Study Unit
Department of Pediatrics
UCSF

This is only a guide. Some questions may not be appropriate for your child - especially if he has language difficulties. These questions can be asked in any order.

1. Favorite things you like to do.
2. What do you dislike to do?
3. Think of your favorite friend - what you do together - why you like him.
4. Think of a person you don't like. What things about him don't you like?
5. What do you especially like to do with father? With mother? With brothers and sisters?
6. How do you feel about school?
7. Think of a time you were happy. Tell me all about it. What was it like? What did you do? Angry, Afraid, Sad
8. Suppose you were going away to live on a desert island, and could only take three people with you. Whom would you choose?
9. If you had three wishes which would be granted, what would you wish for?
10. Is there any way that you would like to be different?
11. Is there any way that your mother/father would like for you to be different?
12. Describe what you do on a school day from the time you get up in the morning until you go to bed at night.

Start child off by asking what time he/she wakes up, who awakens child, what happens first, next, etc.

From Child's description, you may get some ideas about:

1. Child's ability to tell in understandable words a sequence of events.
2. What is omitted may be significant, e.g. leaving out the time in class or lunch time, or recess where child may be having trouble.
3. Whether or not he/she has friends to play with.
4. Type recreation - active/passive.
5. Responsibilities and chores.
6. Scheduled or unscheduled homelife.
7. Time with parents.

EDUCATIONAL SCREENING

42

Child Study Unit
Department of Pediatrics
UCSF

This is a screening experience, not a diagnostic testing situation!

Ask child:

General Information, Reasoning and Writing Skills

What is an orange? (6 yr/8yr)
Is it morning or afternoon--how can you tell?
Count by 2's and 5's. (7 yr)
What day is it today? (7 yr)
Name days of week. (7 yr)
Name months of year. (9 yr)

Ask child to print/write name.

Copy forms.

Age - write.

Tell his birthday and attempt to write month (abbreviated), day.

Tell address - ask child to attempt to write it, see if he/she has any idea about sound & letter associations.

Tell telephone number and write it.

Print alphabet in small letters.

Oral Reading

See form. Ask some questions to see if child understands what he/she read. *L. J.*

Grade level 1 - might ask what do you think happened next?

Grade level 4 - how many boys came home happy?

Silent Reading - see form

Have child read silently - if he/she asks for help tell the child to do the best they can. After he/she has tried to carry out the directions, ask child to underline the words he/she can't read and then help him/her. These are often the key words for comprehension for the directions.

Spelling

See sentences on oral reading form. Usually sentence dictation is more informative. Note how many times and what causes need for repetition of dictation of sentences.

Carry Out Oral Commands (see forms)

This may illustrate child's problem in classroom with oral directions.

Visual Sequence Memory

Start with three objects - increase by one, if successful;
then three shapes - increase by one, if successful
then three letters - increase by one, if successful.

Educational Screening (cont'd)

If child has trouble ask him/her to say names orally as s/he looks. See if child can convert task to an auditory memory process.

If there is time, try some Math Combinations

e.g.

- 7 year old - add and subtract 1 digit numbers
- 8 year old - learning borrowing and carrying
- 9 year old - simple multiplication
- 10 year old - simple division
- 12 year old - long division, fractions.

End interview by giving child some feedback regarding successes and difficulties. Be sure to go over the rest of the week's schedule with him/her. Clarify what lies ahead for this child.

Explain about the TV demonstration on Thursday.

Recognize the child's efforts verbally before s/he leaves.

in the child who is chronically ill or mentally handicapped or socially or emotionally disturbed).

For example:

1. Pediatricians may be superbly trained in neonatology and able to monitor blood gases, resuscitate a depressed newborn, perform an exchange transfusion, but how can they help the teenage mother who is worn out, overwhelmed, lacking social and economic resources, and feeling she is a failure because of her inability to soothe her extremely irritable week-old baby who seems to cry constantly?
2. The pediatrician agrees with the anxious parents that their 3½ year old is not talking. How is he/she to counsel the parents? After ruling out hearing loss should the doctor try to allay their anxiety by reassuring that the child will outgrow it? Should further diagnostic studies be pursued, and if so, what studies and by whom? How will the pediatrician then counsel the child's parents?
3. Pediatricians are confident of their ability to manage convulsive seizures, but what do they do when a twelve year old boy refuses to take his medication, and his over-worked single parent is at her wits' end and can't take any more time off work to supervise him?
4. Pediatricians may be at ease with their knowledge of translocations, trisomy, and an infant presented to them for care and yet be totally unnerved by how, when, and what to tell the infant's frightened young parents.
5. It is quite evident that this 8 year old is unable to read. His school and both separated parents complain of his behavior and his laziness, but secretly worry that their divorce might be the cause. How does this pediatrician proceed? What studies are necessary? How does he/she work with the child and family and intervene effectively with the school?
6. A four year old's global developmental retardation is clear to everyone but her 42 year old parents who have no other children. What does the pediatrician do to help them with their concern that "if she only learned to talk, everything would be all right"?
7. A pediatrician may be an expert in the complete diagnostic evaluation of a child with recurrent abdominal pain. But how does this pediatrician proceed when all the studies are negative and the frustrated parents are sitting in the office with their child still complaining of pain and refusing to go to school?

This list of clinical situations could continue for many pages. The physician's helplessness and frustration in dealing with them is evident. In each of the cases listed above the "medical" facts of the situation are clear. Medical school and residency training provide these facts generally quite well.

From reading, lectures and rounds, the pediatrician may be aware of the importance of the behavioral aspects in the above clinical situations. Failure to provide the appropriate care usually compounds problems and increases medical, economic, and social costs in both the short and long run. Pediatricians, especially, are aware they carry the double responsibility of treating present and preventing future problems in children, which if carried out will conserve both human and financial resources. But this awareness is not enough. The doctor must know how to evaluate such situations, how to communicate his findings, how to work with the psychosocial (behavioral) aspects of each child's condition and those of the family as well. These situations and many others that present daily to physician's offices and community clinics need pediatricians or family practice physicians skillful and comfortable with the behavioral aspects of their patients and families.

Awareness of This Lack in Pediatric Education By Leaders in Academic Medicine and Pediatrics

In the past five years there has been a growing awareness of the importance of this aspect of health care. There now appears to be acceptance by academic medicine of the real need for training physicians to understand and work with the psycho-social aspects of medical care of patients.

In 1977 George Engel wrote his classic article, " The Need for a New Model: A Challenge for Biomedicine".⁹ He states that:

" concentration on the biomedical and exclusion of the psychosocial distorts perspectives and even interferes with patient care.... the biochemical deficit constitutes but one factor among many, the complex interaction of which ultimately may culminate in active disease or manifest illness." He emphasizes that:

" the physicians' basic professional knowledge and skills must span the social, psychological, and biological for his decision and actions on the patients' behalf involve all three...." and he proposes:

" a bio-psychosocial model that would take all these factors into account."

Concerning residency training designed to inculcate psycho-social knowledge and skills appropriate for their future work as clinicians and teachers, Dr. Engel notes:

" today, interest among students and young physicians is high and where learning opportunities exist they quickly overwhelm the available meager resources. It would appear that, given the opportunity, the younger generation is ready to accept the importance of learning more about the psychosocial dimensions of illness and health care. Clearly the gap to be closed is between the teachers ready to teach and the students eager to learn."

Dr. Bruce Graham, this year's President of the American Academy of Pediatrics in the August 1980 issue of News and Comments¹⁰ writes:

" Our country changes, society changes. Pediatricians have to change too, have to become better, as we deal in the social and behavioral areas of health care, a field once minor- now major- in our concern for the welfare of children. We must be equipped to treat the whole child"...

" As we are going through important changes in the care of children, we need to look at what goes into the training of residents. We need input from other professional disciplines, so that we, as pediatricians are better able to blend with others, to shoulder our leadership role."

This same issue has recently been raised by a task force, made up of leaders in pediatrics representing universities, the American Academy of Pediatrics, American Board of Pediatrics, the major national pediatric societies, the American Medical Association Residency Bureau Committee, and representatives from child psychiatry. This task force was formed to review pediatric education and to make recommendations for its future. Their report The Future of Pediatric Education¹, published in 1978, states that:

" In certain subjects the educational content of many residencies is inadequate. The most significant of these are biosocial and developmental aspects of pediatrics and adolescent medicine. "In a national survey of practicing pediatricians" about half (54%) of young pediatricians rated their residency as providing insufficient experience with psychosocial and behavioral problems; 36% said their training in the management of mental and emotional disorders was insufficient, and 37% said their training in neurology and learning disabilities was inadequate. It is understandable, therefore, that pediatricians are expressing a desire for additional training in the biosocial and developmental areas."

As the Task Force surveyed unmet needs in childrens' care, leading the list of issues that " repeatedly emerged at the core of current problems in pediatric education" is the following:

" Biosocial and developmental problems such as early family adjustment difficulties and school failure adversely affect the health of many children and adolescents. These problems are serious and very widespread. All pediatricians should have the skills to cope with them."¹³

What Is Needed In Pediatric Education

We feel that what is required to meet these problems is a physician who, in addition to having medical skills, is a perceptive listener, a skillful interviewer, and an effective counselor. From our experience we find that these skills must be and can be specifically taught. Along with knowledge of normal and disturbed development in children, the pediatrician needs to learn skills in interviewing children and families in order to evaluate and cope with these biosocial and developmental problems. The incorporation of such skills into a physician's style and practice cannot be assumed, nor merely talked about in a curriculum, nor should they be discounted as being " unteachable". They are very teachable if the trainee is provided with a teaching program that allows him to learn by doing with careful and sympathetic supervision.

History of the Child Study Unit Training Program

Since 1948 the Child Study Unit has been developing such a training program and has a long experience in providing future pediatricians with knowledge and skills to deal with the psychosocial (behavioral) aspects of children's health care and maintenance. In addition to providing daily consultations and evaluations for patients with psychosocial and developmental problems to health professionals working in the Pediatric Department's

5

hospital wards and outpatient clinics, the Child Study Unit has also developed more intense teaching rotations of varying lengths for medical students, pediatric housestaff, graduate nursing students, post-residency fellows, and other health professionals.

For the past 16 years this endeavor has grown and developed with essential support from the present Maternal and Child Health Training Bureau of Community Health Services, Department of Health and Human Services. We have documented evidence from our medical students, graduate nursing students, and pediatric residents that in addition to our consultations with them as they see pediatric patients, throughout the department, their respective rotations (one week for medical students, graduate nursing students, and 1st year pediatric residents, and two months for 2nd year pediatric residents for more intense training), are considered one of their most valuable learning experiences. A sample of their comments is found on pages A1-14.

Similar reports have been made in an informal survey we conducted of 20 former residents now in practice in the Bay Area. Also in contrast to the national survey conducted by the Task Force on pediatric education (see page 4), of these same former residents none rated their residency as insufficient in providing experience with psychosocial and behavioral problems; 10% said their training in the management of mental and emotional disorders was insufficient; and 10% said their training in neurology and learning disorders was inadequate.

We also see the need to train pediatricians to be able to teach these behavioral aspects of pediatric care in other university and community health settings. We have already demonstrated that we can train pediatricians to provide this care for their patients and also that with additional training, we can train our fellows to be able to teach the behavioral aspects of pediatric care to other health professionals. Within our training program, when faculty time has needed to be replaced or increased, former fellows who returned to the Child Study Unit as faculty have become very effective teachers of behavioral pediatrics with additional on-the-job training in our unit.

Proposal

As the need for such training in the behavioral aspects of pediatric care is now being given recognition nationally, we are in a position to serve as a model program for this kind of training, having developed resources and expertise that are already available. Since 1965, a formalized training program addressing many of the above issues and funded by grant MCT-2001-CA has been operating in the Child Study Unit. The second renewal of this grant will terminate in June, 1981.

We propose continuation and further development of this successful training program for medical students, graduate nurses, pediatric housestaff, and other health professionals from other institutions. We also propose to increase the fellowship training to two years to prepare these Child Study Unit pediatric fellows to be effective teachers in the behavioral aspects of children's care. Thus they can assume leadership roles promoting cost-effective health care that considers the developmental and biosocial needs of the child.

The purpose of this project is to provide an intensive rotation in bio-psychosocial (behavioral) pediatrics of varying degree and intensity to trainees, as presented in Table 1.

The Task Force on Pediatric Education in the forward to their document, The Future of Pediatric Education, states that the issues of biosocial and developmental problems, and care of chronic handicapping conditions :

6.
"are at the core of current problems in pediatric education. They can only be addressed by commitment of talent, space, and money" 13

We have the talent and commitment for this educational need. And we have been referred to as a pioneer in this area of physician training, having continuously offered specific training in biosocial pediatrics since 1948! - long before the terms "behavioral" or "psycho-biosocial" were even coined. In those days we simply considered ourselves to be teaching comprehensive pediatrics. We consider that still to be the case. Our request now is for new funds to continue and to further develop new programs. With our experience and the capability to move in new directions, we propose to:

1. serve as a national model in teaching health professionals to meet the changing biopsychosocial health needs of children and families in the 1980's.
2. serve as a training center for future teachers in behavioral pediatrics to work in and/or develop these important programs elsewhere.

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11. Reference 1 above, page 19.
12. Reference 1 above, page 20.
13. Reference 1 above, Page IX

TABLE I

Summary of Proposed Trainees and Purpose of Training

Approximate Number	Type of Trainee	Length of Training	Purpose of Training
90	3rd year UCSF medical students	1 week	a) appreciate biopsychosocial factors that impact on childrens' development and learn prevention and/or management strategies by collaborating with other health professionals; become child advocates.
17	UCSF graduate nursing students	1 week	see (a) above
15	1st yr UCSF pediatric residents PL I	1 week	see (a) above
11	2nd yr UCSF pediatric residents PL II	2 months	see (a) above b) knowledge and clinical skills in behavioral aspects of pediatric practice
6	2nd yr primary care residents	1-2 months	see (a) above see (b) above
17	Mt. Zion pediatric residents PL II, III	1 month	see (a) above see (b) above
30	Other health professionals including: Fellows in Adolescent Medicine, Fellows in Public Health, Maternal and Child Health, Nurses, Social workers, Psychologists, and Nutritionists	varying 1 week to 1-2 mos.	variable: core experience (a) or teaching seminars in (b)
3	PL III Electives	1 month	more clinical skills in (b) above
4	Post-residency pediatric fellows 2 1st year fellows 2 2nd year fellows	2 years	see (a) and (b) above (c) skills in teaching both knowledge and clinical skills in behavioral aspects of pediatric practice (d) evaluating effectiveness of teaching and patient care.
2	Post-doctoral trainees in pediatric psychology	1-2 years	see (a), (b), (c) , (d) with especial reference to psychology.

II. Program Description

A. Purpose of the Project

Pediatricians caring for children in the 1980s are, on the whole, more expertly trained to understand and treat a wider range of children's physical illness than ever before. However, all too often, today, the ability to use this expertise falters in promoting healthy development and preventing problems that adversely affect children's healthy development. Health professionals¹ studying this dilemma agree that changes in children's health problems coupled with major deficiencies in pediatric education may be the main cause.

Changes in Children's Health Problems

More and more children are developing health problems associated with changing family structures, changing lifestyles, deteriorating school systems and increasing poverty. It is estimated that:

1/3 of all children under six years of age have a mother in the labor force, making the time for mother-child interaction very precious.²

9 million children live in single parent families, usually with mothers, who are often the main family support and are often under great stress and fatigue.³

600,000 children per year are borne by high-risk teen-age mothers.⁴

7 million children suffer from handicaps and of these less than one-half are adequately served.⁵ At the same time, advances in medical technology allow children with serious chronic or terminal illness to be maintained for longer periods.

The number of children living in poverty has increased in the 1970's so that more than 3 million children under the age of six now live in poverty.⁶

Over 1/2 of children in our large city school systems are reading considerably below grade level.⁷

Only 10% of American children and adolescents in need of care or treatment are served by the present mental health system.⁸

Deficiencies in Pediatric Education

Pediatricians superbly trained to deal with physical aspects of illness may, too often, be confused, frustrated, and feel helpless to deal with biosocial and developmental aspects of pediatrics (early adjustment problems, school failure, and problems deriving from abnormal growth and development

Pediatric Resident. PL II
2 mo rotation

A - 1.

CSU Critique:

I consider the Child Study Unit a unique and invaluable aspect of my training. I entered the unit expecting a review of development and its attendant behavioral problems, and while these issues were addressed, the bulk of the rotation was quite a surprise. The idea of "the family is the patient" was presented, and - based upon this philosophy - my concepts of and my approach as a physician to behavioral pediatrics was changed. The major difference between this exposure to others in the past was that it did not stop at philosophy: indeed, it was a "nuts-and-bolts," "how-to" course in how we can efficiently and effectively help our patients - the family - in times of behavioral, emotional, and medical stress. After making these specific techniques available, we were given the chance to observe them being used, and then use them ourselves, in supervised clinical situations. Finding that "they worked" had the same impact for me that discovering I could actually diagnose a pneumonia with a stethoscope did as a medical student.

I attribute the success of the CSU to many factors; among them:

1. The presentation of the skills in an organized, inter-related, step-by-step fashion with required background reading beforehand.
2. A 2-month period of study and clinical application devoted exclusively to this field. It is very difficult to invest the large amount of time and thought required to learn and use these complex skills when you are also responsible for very sick children on the wards or clinics. Although we realize the import and impact of behavioral problems, the fact that they are not the direct immediate physical threat that leukemia, meningitis, or osteomyelitis are, invariably gives them less importance in terms of time investment; yet, the problems posed by behavioral pediatrics are often more complicated in terms of time investment, and are at least as time consuming. Over the past 2 months, I've not only developed these skills, but have had the opportunity to become practiced enough to achieve some goals quickly and efficiently. This aspect is very important; otherwise one could never use them practically.
3. Timing of the rotation in relation to residency training. Part of this relates to #2: I am, as a 2nd year resident, more comfortably medically and don't feel guilty that I may harm a patient next week if I don't read about meningitis this week. More importantly, having seen a spectrum of behavioral problems already, I realized a) how common they are, and b) how devastating they can be to a child and family. This certainly serves as incentive to devote the time and thought required.

4. Seeing first-hand and working closely with the related specialists - in psychology, language and speech, education, and social work. This knowledge of their talents will allow me to work appropriately with them as a referring doctor.
5. The faculty of the CSU.

Finally, the CSU rotation has had an unexpected and exciting benefit for me. My relationship with difficult patients and families - the ones you dread to see in your clinic - has changed. I now, for the first time (in some cases, for over a year) can productively talk to these people because I know how to ask about their problems: what had been a vague sense of family difficulties can now, to some extent at least, be defined. Perhaps I would have, in time, developed some of these techniques on my own. However, in the same way that it would be senseless for me to develop independently my own diagnoses and treatment regimens for complex medical diseases from scratch based on some fundamental knowledge of pathology, I see now that the skills I have learned in the CSU are the complex results of years of experience and study from a group of specialists. The unexpected part is how much easier, not to mention gratifying, it has made my job as a physician dealing with my patients. Very difficult family interactions and behavioral problems no longer give me a helpless sense of being uncomfortable stemming from "I hope I'm doing the right thing" as a doctor. What used to be very difficult admissions in terms of parental guilt/fright - such as failure to thrive in a first-born - have now become productive interchanges that are a relief and, I believe, beneficial not only to the "whole patient" - the child and family - but also for me, the physician.

Bob Zaglin, M.D.
Pediatric Resident
December 18, 1980

II PROGRAM DESCRIPTION

A. PURPOSE OF PROJECT

The purpose of the project is to improve the care and outcome of the increasing number of children and families now living with chronic physical handicaps by including in their care prevention of and intervention in associated behavioral (psycho-social) complications.

The Problems to be Addressed

Changes in Childrens Health Needs -

Due to rapid changes in medical knowledge and technology, pediatricians are more expertly trained to treat a wide range of children's physical illness. They are now able to save many infants and children who until recent years, would have succumbed at an early age to perinatal insults, congenital defects, physical handicaps or serious illness. This has resulted in an increased number of children living longer with handicapping conditions (chronic illness, physical handicaps and developmental disabilities). It has been estimated that 7 million children suffer from handicaps and of these less than one half are adequately served.¹

These children with handicapping conditions can present their families, health providers and schools with problems in understanding and managing their disturbed behavioral growth. Frequently such children, as they grow to adulthood, are more severely handicapped by these disturbances in behavioral (psycho-social) growth than they are by the physical disabilities themselves. This is recognized nationally as an essential element in improving the care of these children. According to the Office for Maternal and Child Health,² "there is increasing evidence that a more comprehensive approach to the total management of children with chronic handicapping conditions results in improved outcomes both in quality and costs."²

Two recent meetings sponsored by the office of Maternal and Child Health^{3,4} addressed the professional's role in care of handicapping problems in children. In both of the meetings, the participants emphasized that the primary problem in caring for children with handicapping conditions was the staff's difficulty in working with families to provide comprehensive care for these children.

Deficiencies in Pediatric Education

Pediatricians superbly trained to deal with the physical aspects of illness may, too often, be confused, frustrated and helpless in dealing with these bio-social and developmental aspects of pediatric care. For example:

An intense, slow to adapt, 7 month old boy with predominantly negative mood, all features of a normal (if difficult) temperamental style in infants, was born 6 weeks prematurely. He is now healthy and developing

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1. Vanderbilt University, The Future of Children: A Report on Classification of Exceptional Children. Nashville, Tennessee, Vanderbilt University, 1974.
 2. Concept Paper. Maternal and Child Health Services Special Project of Regional and National Significance (Title V) Dec. 11, 1981, O.M.C.H.
 3. National Conference on "Interpersonal Competence and Quality Health Care" Annapolis, Md., September, 1981.
 4. National Workshop "The Role of the Primary Care Provider in the Treatment of Handicapped Children" Nashville, Tennessee, September, 1981.

normally. His mother feels she is "doing something wrong and failing as a mother because he is so fussy and highstrung". What does the pediatrician, superbly trained in neonatology, do to promote a healthy mother-child relationship in this situation?

A four year old girl with multiple congenital anomalies, (arrested hydrocephalus, seizures, poor vision, gait disturbance and delayed language development,) requires regular visits to her pediatrician, neurologist, neurosurgeon, orthopedist, ophthalmologist, physical therapist and therapeutic preschool. How does the pediatrician prevent this family from developing a family system where the child becomes an almost impossible burden, her older brothers become alienated to her, and her parents are unable to provide their daughter with validation and limits- due to their confusion, resentment and guilt?

The pediatrician may be expert in managing children with renal disease but how does s/he help a bilingual 10 year old girl on hemodialysis who refuses to go outside her house or go to school, and who has become so withdrawn, apathetic and mute that the staff of the Renal Unit are concerned that she may be either depressed, retarded or deteriorating medically?

This list of clinical situations could continue for many pages. In each case the physician's helpless frustration in not being able to provide a comprehensive approach is evident. Often there appears to be an imbalance in competencies so that the effectiveness of the physician's expertise in physical treatment is severely diminished by lack of expertise in dealing with the psycho-social aspects of pediatric care. Health professionals studying this dilemma agree that these recent changes in children's health problems coupled with major deficiencies in pediatric education may be the main cause.⁵

Failure to provide the appropriate care usually compounds problems and increases medical, economic, and social costs in both the short and long run. Pediatricians, especially, are aware they carry the double responsibility of treating present and preventing future problems in children, which if carried out will conserve both human and financial resources. But this awareness is not enough. The doctor must know how to evaluate such situations how to communicate the findings, how to work with the psychosocial (behavioral) aspects of each child's condition and those of the family as well. Often this "how" is missing in pediatric residency and fellowship programs.

A task force, made up of leaders in pediatrics representing universities, the American Academy of Pediatrics, American Board of Pediatrics, the major national pediatric societies, the American Medical Association Residency Bureau Committee, and representatives from child psychiatry, was formed to review pediatric education and to make recommendations for its future. Their report The Future of Pediatric Education, published in 1978, states that:

"In certain subjects the educational content of many residencies is inadequate. The most significant of these are biosocial and developmental aspects of pediatrics and adolescent medicine. About half (54%) of young pediatricians rated their residency as providing insufficient experience with psychosocial and behavioral problems."

5. The Task Force on Pediatric Education, report The Future of Pediatric Education, 1978, Evanston, Illinois.

What is Needed in Pediatric Education

We believe that meeting these problems requires a physician who, in addition to having medical skills, is a perceptive listener, a skillful interviewer, and an effective counselor. From our experience, we find that these skills must be and can be specifically taught. Along with knowledge of normal and disturbed development in children, the pediatrician needs to learn skills in interviewing children and families in order to evaluate and cope with these biosocial and developmental problems. The incorporation of such skills into a physician's style and practice cannot be assumed, nor merely talked about in a curriculum, nor discounted as being "unteachable". They are very teachable if the trainee is provided with a teaching program that allows him to learn by doing under careful and sympathetic supervision.

History of the Child Study Unit Training Program

Since 1948, the Child Study Unit has been developing such a training program and has a long experience in providing future pediatricians with knowledge and skills to deal with the psychosocial (behavioral) aspects of children's health care and maintenance. Through our post-residency training fellowship program, daily consultations and evaluations are provided to health professionals working in the Pediatric Department's hospital wards and outpatient clinics regarding these problems. The Child Study Unit has also developed more intense teaching rotations for fellows from other pediatric and graduate programs, pediatric housestaff, graduate nursing students, medical students, post doctoral psychologists and other health professionals.

For the past 16 years this endeavor has developed with essential support from the present Maternal and Child Health Training Bureau of Community Health Services, Department of Health and Human Services. We have documented evidence from our trainees that they consider these teaching rotations to be one of their most valuable learning experiences. (See Page 48.)

Why supplementary support is needed for this training program

This training program requires expensive one-to-one teaching of new skills, particularly, family and child interviewing, working in a multidiscipline setting, prevention and intervention in psychosocial complications of handicapping conditions. These skills are as new to our trainees as learning to take medical histories and perform physical examinations and technical procedures once were. In these areas many are "beginning again" and need much careful and supportive supervision. The results of this training in the long-run can save money. However, support for this training is much more difficult to obtain than it is for training in highly technical life-saving procedures which, in addition, are often well supported by third party payment.

George Engel, in his classic paper "The Need for a New Medical Model: A Challenge for Biomedicine" (Science, April 1977), describes the program for teaching the needed new biopsychosocial model for medical care to appreciative medical students and pediatric housestaff at the University of Rochester. He states:

In other schools, especially in the immediate post World War II period, similar efforts were launched and while some flourished briefly, most soon faded away under the competition of more glamorous

and acceptable biomedical careers. Today, within many medical schools there is again a revival of interest among some faculty, but they are few in number and lack the influence, prestige, power and access to funding from peer review groups that goes with conformity to the prevailing biomedical structure. (page 135)

Clearly the gap to be closed is between teachers ready to teach and students eager to learn. But nothing will change unless or until those who control resources have the wisdom to venture off the beaten path of exclusive reliance on biomedicine as the only approach to health care. (page 135)

The Task Force on Pediatric Education addresses this problem:

Pediatric departments will need to cope with the serious shortages of faculty to teach in such areas as adolescent medicine, learning disabilities, care of chronically ill, ambulatory care, community pediatrics and the behavioral sciences. Faculty development in these areas will require financial support for fellowship and research positions in these disciplines. (page 53)

Proposal

As the need for such training in the behavioral aspects of pediatric care is now being recognized nationally, we are in a position to serve as a model program for this kind of training, having developed resources and expertise that are already available.

We propose training pediatricians to become effective leaders in maternal and child health programs and/or teachers in the behavioral aspects of pediatric care. Thus they can assume leadership roles in promoting cost-effective comprehensive healthcare for children with chronic illness and handicaps that considers the developmental and psychosocial needs of the child and family.

The Task Force on Pediatric Education in the foreword to their document, The Future of Pediatric Education, states that the issues of biosocial and developmental problems, and care of chronic handicapping conditions -"are at the core of current problems in pediatric education. They can only be addressed by commitment of talent, space, and money"

We have the talent and commitment for this educational need. And we have been referred to as a pioneer in this area of physician training, - having continuously offered specific training in biosocial pediatrics since 1948! - long before the terms "behavioral" or biopsychosocial" were even coined. With our experience and the capability to move in new directions, we propose to serve as a training center for future leaders who will foster comprehensive care for children with handicapping conditions.

G II. TRAINING IN INTERVIEWING SKILLS

IIA. Family Interviewing Experience

1. Family Interviewing Seminar

Trainees: Two pediatric CSU fellows (6 months each), two PL II residents (2 months each), two Mt. Zion residents (1 month each), 6 primary care resident (2 months each), nurse practitioners, social workers, three other trainees (2 months each).

Faculty: Drs. Obedzinski, Baum, Gofman, Tanner, Ms. Johnson, RN, PNP

Purpose: Geared to PL-II level residents on 2 month CSU rotation to help them appreciate the importance of the family system in a child's development. To be familiarized with family systems theory, communications theory, family rules, basic interviewing skills and concepts. To provide further training in diagnostic family interviewing and learning to use family interviewing for therapeutic purposes.

Content: Seminar meets weekly for two months coinciding with residents CSU rotation. Topics include family systems, communication, interviewing techniques and goals, presenting a difficult diagnosis, psychosomatic illness, chronic illness, common behavior problems, divorce, terminal illness, and making referrals.

Assigned reading*, didactic teaching, videotapes and role playing are used. Emphasis is on learning by experience under supervision. Much of the material is taught using role plays simulation, common clinical situations. Residents role play parents and children to experience what it feels like to be a parent or patient and thus better understand the dynamics of the clinical situation.

2. Videotape Review Sessions

Trainees: Two pediatric residents PL II (2 months each); 6 pediatric primary care residents (2 months each); 2, 1st year CSU pediatric fellows (12 months each); 2, 2nd year CSU pediatric fellows (12 months each)

Faculty: 1 Family therapy psychiatrist, A. Leveton; 3 pediatricians, J. Rowe, J. Obedzinski, B. Allmond;

Purpose: To review and criticize ongoing counselling cases of residents and fellows. To evaluate progress of trainees clinical work. To suggest specific strategies for treating psecific clinical situations.

Content: Fellows have a total of 4 hours of tape review weekly. (Two hours with Dr. Leveton and 2 hours with Drs. Obedzinski, Allmond or Rowe.) Cases include behavioral or developmental problems, chronic illness, etc.

*The Family is the Patient, Allmond, Buckman, Gofman, is the basic syllabus for this seminar.

2. Videotape Review Sessions (cont'd)

Residents have two hours per week with Drs. Rowe, Allmond or Obedzinski. They are expected to bring tapes of clinical work they are doing, e.g. family counselling, well child visits, continuity care of chronic illness. This affords an opportunity to review interviewing skills, point out aspects of normal and abnormal child and family development and to discuss management of common problems in general pediatrics.

3. Family Counselling Sessions with Faculty

Trainees: 2 PL II Residents, 1 Primary care resident; 2 1st year CSU pediatric fellows; 2 2nd year CSU pediatric fellows

Faculty: 3 pediatricians, Rowe and Obedzinski, and Allmond.

Purpose: To provide fellows with direct clinical experience in interviewing families with live supervision and support from pediatric faculty.

Content: Residents and first year fellows see cases 1-2 hours weekly with Drs. Rowe, Allmond or Obedzinski. Cases are ongoing and involve common behavioral problems - school refusal, psychosomatic problems, chronic illness, adjustment to divorce, etc. Depending on level of experience and ability, the trainee may take the major responsibility for conducting the interview - with the faculty member intervening only as needed. This format allows the trainee to assume more and more responsibility for interviewing as she/he acquires the necessary skills.

IIB. Child Evaluation and Interviewing

The Child Study Unit's teaching program has several experiences in child evaluation and interviewing. One specific child evaluation experience is outlined in the description of the Learning and Language Disorder Program. See pages 41-42. In addition, we propose to expand this teaching with a seminar and direct supervision in the playroom assessment of children.

Playroom Assessment of Children

Patients : 1-3 weekly

Age: infancy to 12 years in 3 groups; 0-3 years, 3-5 years, 6-12 years.

Trainees : 2 CSU 1st year fellows

11 UCSF PL II Residents for 2 months each

6 UCSF Primary Care Residents for 1-2 months each

2-4 UCSF graduate nursing students for 1-2 months each

Faculty: M. Glasser, M.D.

Purpose: This experience will present knowledge and clinical skills involved with the playroom assessment of children. The exposure to these skills will enable the trainee to survey the emotional needs of the child and to use the playroom to augment the physical examination, including any development and/or neurological assessment.

II B. Child Evaluation and Interviewing (cont'd)

Referrals: Patients will be those referred to the Child Study Unit for a developmental or behavioral assessment.

Service Given: The playroom assessment of these children will provide important information to the CSU physician coordinating that patient's evaluation and treatment.

Training Content: The seminar will be repeated in two month blocks and thus oriented to the pediatric resident trainees. Each trainee will gain experience assessing three different age groups of children (0-3 years, 3-5 years, 6-12 years) in a play setting. The assessment will look at multiple aspects of a child's behavior and development: emotional, neurological, cognitive, and interactional. Parent-child interaction will be observed when an infant is assessed. The seminar will be of 2 hours duration, once a week for 7 weeks. The first seminar will be didactic, presenting the major aspects of a playroom assessment. The following six seminars will include a combination of demonstration assessments by the faculty and opportunities for the trainee to do the assessment observed by the faculty through a one-way mirror.

IIC. Ward Consultations

Patients: 1-2 weekly

Age Range: infant - 16 years

Trainees:

2	CSU 2nd year fellows (6 months each)
11	Pediatric PL II residents (2 month blocks)
6	Pediatric Primary Care Residents (1-2 month blocks)

Faculty:

3 CSU Faculty:	Tanner, Baum, Glasser
6 CSU psychologists:	Crittenden, Harvin, Gillis, Lehrer, Kennedy-Light, Durendetto

Purpose: Ward consultations have been provided as a service and teaching experience dictated by the needs of the inpatient service. We plan to offer and provide a more structured experience to provide both service and teaching. Psychologists from the Child Study Unit provide developmental and behavioral assessments to assist the housestaff and attending physicians in the diagnosis and management of children hospitalized at UCSF. The pediatricians provide diagnostic family interviews to a) demonstrate the behavioral aspects with which children and families cope and b) provide assistance to the housestaff and attending physicians in the diagnosis and management of the children hospitalized at UCSF.

II C. Ward Consultations (cont'd)

Referrals: Patients are referred to the Child Study Unit from the inpatient services with the majority coming from pediatric neurology, and immunology.

Service Given: The service provided varies with the specific request from the pediatric housestaff and/or attending physician. The request may be for a developmental or behavioral assessment for which a psychologist will see the child for that assessment. S/he will then discuss his/her findings with the referring physician(s) as well as briefly meeting with the family if that is indicated. The request may be for a diagnostic family interview for which one of the pediatric faculty and/or fellow will meet with the patient and family to explore multiple aspects of that child's hospitalization and/or illness.

Training Content:

The format for this consultation experience includes time for the diagnostic family interview; if an assessment were done, communication with the psychologist who had done the assessment; and a teaching conference. This conference would be attended by other faculty, fellows, and residents from the CSU as well as housestaff from the inpatient services. Further communication with the child and his/her family would occur as depending on the individual case. Some consultations may include a recommendation for ongoing family work to deal with the problems of acute or chronic illness, terminal illness, psychosomatic illness, developmental delays, etc.

A sampling of the type of inpatient consultations include:

- a. A 4 year old child with global retardation and seizures whose family has been referred to the Pediatric Neurology service "for another opinion."
- b. A 10 year old child hospitalized for endocrinologic evaluation of short stature who in addition is having great difficulty coping with his small size.
- c. A 12 year old child with systemic lupus erythematosus who is depressed, "too quiet" with the physicians and nurses, yet in constant battle with her parents.
- d. A 7 year old child with cystic fibrosis who is hospitalized with an exacerbation of her disease and whose parents are "too involved" with the medical aspects of her care and thus a problem for the housestaff.

G III. OPPORTUNITIES FOR SELF UNDERSTANDING- Personal Growth Experience

IIIA. Staff Development Seminar

Group Leader: Alan Leveton, M.D.

Participants: Core Pediatric faculty and Pediatric fellows, Gofman, Baum Tanner, Obedzinski, Johnson, Rowe, and fellows.

Frequency: One, two hour meeting weekly.

Purpose: Supportive, educative. To develop a deeper understanding of the interplay between one's personal development as a helping professional and the emotional needs of those being helped. To appreciate behavior problems as a manifestation of adaptive and growth processes in families and children. To appreciate these same process at work in ourselves - as individuals and as a working group.

Content: Selected readings in normal growth and development, family therapy, adaptation, communication and related topics. Authors include Erik Erikson, Milton Erikson, Jay Haley, Murray Bowen, Virginia Satir and others. Format includes group discussion, case presentation, didactic teaching, live supervision with one way mirror and role playing. Under Dr. Leveton's supervision the group examines the dilemmas faced in the human growth cycle. Through recalling and sharing personal experiences with birth, death, illness, parenting, etc, group members develop a sense of the wide range of possibilities inherent in the adaptational process. Time is also devoted to examining emotional reactions to situations we face as clinicians and to use this knowledge to improve our ability to relate to patients. Mixing fellows and faculty enables trainees to appreciate that many of the personal issues they face are shared by people with more experience and training.

IIIB. Housestaff Support Group

Group Leaders: Clinic: Drs. Jane Rowe, Stewart Rowe
Ward: Drs. Baum and Obedzinski

Participants: Pediatric residents and interns. Average attendance is 6-8 in clinic and 4-6 on ward.

Purpose: To enable residents to openly discuss the difficulties they face as physicians in training. To encourage understanding of emotional reactions experienced by doctors in training and after training. To develop a healthy balance between human needs and professional demands. To encourage effective ways of dealing with stress.

III B. Housestaff Support Group (cont'd)

Content: Each group meets for one hour weekly at a preset time. Housestaff are not required to attend. Issues addressed include communication difficulties between group members, emotional isolation of the training experience, low self esteem related to unrealistic expectations about performance, conflicts between personal needs and professional responsibilities, emotional reactions engendered by difficult patients (terminal illness, complex medical or social problems, angry patients) and ways of coping with stress.

The groups are well received by housestaff and are an established part of their training experience. They have been meeting weekly for four years.

Child Study Unit fellows will be attending as participants the first year and as group leaders for part of the second year.

IV. CLINICAL SKILLS

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IV A. See pages 32-43

IVB. School Age Clinic*

Patients: 6 to 8 weekly

Age Range: 3-13 years

Trainees:

2	CSU fellows - 1st year for 12 months each
11	Pediatric residents PL II - for 2 months each
6	Pediatric residents primary care for 1-2 months each
17	Pediatric residents, Childrens & Youth Project, Mt. Zion PL I, II, III for 1 month each
2	Psychologist post-doct. fellow for 3 months
approx 5	Nurses, for 1 month each

Faculty:

4	CSU pediatricians; Tanner, Obedzinski, Rowe, Gofman
1	Mt. Zion pediatrician; Bergman
1	Psychologist consultant; Lehrer
2	CSU Fellows - 2nd year, 6 months each

Purpose:

This is a newly organized clinic which has been in operation since September, 1980 in the Child Study Unit. The clinic meets for four hours weekly for the purpose of direct clinical experience in the evaluation and management of children from 3 to 13 years referred with a variety of behavioral and developmental difficulties that might present to the pediatrician for help. These have, so far, included interactional problems at home and school, neurodevelopmental, psychosomatic disturbances and emotional and developmental (psychosocial) problems related to chronic illness, divorce or death in the family.

Referrals:

Children are referred to this clinic by housestaff and faculty in general pediatric and continuity clinics, by Bay Area pediatricians, schools and social agencies, and parents. The patients represent the many ethnic groups in the Bay Area, particularly San Francisco, and so far the clinic population has been approximately 1/5 Black; 1/3 Hispanic and less than 1/2 Caucasian in origin.

Service Given:

The child is seen for developmental screening regarding his neurodevelopmental, cognitive, communicative and behavioral strengths and weaknesses; an evaluative family interview is conducted to appreciate the role the child

*in this definition we include children of nursery school age; children entitled to special programs in public education.

The Impact of Training in Behavioral Pediatrics: A Study of 24 Residency Programs

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ABSTRACT. Three groups of residency programs were compared: 11 externally funded to provide mandatory behavioral training, seven not externally funded but providing mandatory training, and six controls not requiring training. At the beginning and end of 1980-1981, 569 residents (70%) completed questionnaires assessing attitudes regarding behavioral disorders, physical disorders, and "mixed" disorders (with physical and behavioral aspects). Behavioral knowledge was tested by 60 multiple-choice questions. Virtually all significant effects of program type occurred in the PL-2 year. For three attitudinal measures, "competence in management," "ability to advise parents," and "future relevance," only Funded residents demonstrated higher change scores for both behavioral and mixed disorders, relative to physical disorders; Funded and Not Funded residents were superior to Controls regarding behavioral disorders. For "knowledge of resources" and "facility interest," Not Funded change was superior to Control. Given higher Funded ratings initially, Not Funded ratings approximated Funded ratings by the end of the year. Regarding knowledge, Funded and Not Funded residents showed greater improvement than Controls. These data suggest that: (1) changes in attitudes and knowledge are related to mandatory training; (2) Funded programs generate the most consistent changes in both behavioral and "mixed" disorders; and (3) the impact of training is most evident in the PL-2 year.

The recent surge of interest in the developmental and behavioral aspects of pediatrics has prompted many pediatric programs to institute formal training in this area.^{1,2} As a relative newcomer to the field of pediatrics during an era of accountability, behavioral pediatrics faces the challenge of documenting the usefulness of these training experiences. Several investigators have reported the results of internal program evaluations which revealed significant changes in residents' attitudes as a function of training.^{3,4} However, to date there has been no comparison of groups of pediatric programs with different levels of emphasis upon training in behavioral pediatrics.

The purpose of this study was to assess both attitudes and knowledge regarding behavioral pediatrics of housestaff in 24 general pediatric programs. To determine the impact of specific, formal training in behavior, three groups of residency programs were compared: (1) 11 schools which were funded by the W. T. Grant Foundation to institute required training in behavioral pediatrics; (2) seven schools which were not funded to

do so but which provided mandatory training in behavior; and (3) six schools which did not require behavioral training for residents. Attitudes and knowledge were measured at the beginning and end of the academic year in order to contrast the amount of change observed in each group of schools.

METHODS

Procedure

The 24 schools participating in the study were selected as follows. In 1978, 50 schools submitted applications in response to the W. T. Grant Foundation's request for proposals to institute formal residency training in behavioral pediatrics. The criteria for eligibility were that this training be offered to all residents and that at least some aspect of such training be mandatory. Eleven schools were funded by the Foundation, and all subsequently elected to participate in an evaluation of their behavioral training. These were designated as the group of *Funded* schools.

A group of 13 "comparison" schools were initially selected to represent schools which did not place a significant training emphasis upon behavioral pediatrics. In making these selections, the authors began with the 248 pediatric residency programs in the United States and deleted the 50 schools which had applied for

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TABLE 1. The 12 Clinical Entities, by Category, Which Were Presented to Residents

Physical	Behavioral	Mixed
Meningitis	School phobia	Failure to thrive
Beta-hemolytic <i>Streptococcus</i> pharyngitis	Childhood psychosis	Down's syndrome
Chronic glomerulonephritis	Conversion reactions	Well-child care
	Suicidal behavior	Enuresis
		Terminal illness

funding by the W. T. Grant Foundation (thus evidencing an interest in developing behavioral programs). The remaining list of 198 schools was then reviewed independently by four individuals familiar with pediatric residency programs, who deleted from the list any schools which they believed had a significant component of training addressed to behavioral and/or developmental issues. From the final list of 166 schools, 15 were selected so as to parallel the distribution of schools within the Funded group, with regard to geographic location and size of the residency program. Of the 15 schools invited to participate in the evaluation study, 13 accepted.

During the first year of the evaluation study, all "comparison" programs were contacted to ensure that they had not introduced mandatory training in behavioral pediatrics subsequent to their inclusion in the study. This survey, however, revealed that seven schools had, in fact, done so. The 13 schools were thus subdivided into two groups. One group of seven schools, while not funded to do so, had instituted either a "block" rotation or continuous training in behavioral pediatrics which was required for all residents; these schools were designated as the *Not Funded* group. In the remaining six schools, such training was either elective or was not formally offered; these schools were designated as the *Control* group.

Instruments

To assess attitudes and knowledge, an Inventory* was administered to residents in all 24 schools, both at the beginning and at the end of the 1980-1981 academic year. Of the 802 residents enrolled in all programs, 569 (71%) completed the Inventory at both test points. The PL-1 residents generally demonstrated a higher response rate than did more senior residents. However, chi-square analyses revealed that there were no significant differences in the response rate among the three school groups for any PL year. The rates were 72, 69, and 71%, respectively, for the Funded, Not Funded, and Control programs.

The Inventory consisted of three sections; the first two sections assessed attitudes, and the third assessed knowledge.

Attitudes. Section 1 was a single rating of "current interest" in behavioral pediatrics, using a five-point scale ranging from 1 ("no interest") to 5 ("extreme interest").

Using a "critical incident" approach, Section 2 as-

sessed attitudes towards 12 clinical "entities" which would be representative of different patient ages and degree of illness/problem severity (see Table 1). These entities were grouped into three categories shown in Table 1 prior to any data analysis. The categorization was performed by six professionals knowledgeable about behavioral pediatrics (the two senior authors and four behavioral pediatricians). Each judge was asked, independently, to place the 12 entities into the appropriate group. "Physical" entities were defined as those which, for diagnosis and/or management, require attention primarily to physical issues. "Mixed" entities were defined as those which, for diagnosis and/or management, require approximately equal attention to behavioral and physical aspects. "Behavioral" entities were defined as those which, for diagnosis and/or management, require attention primarily to behavioral issues. With regard to the judges' categorization, all of the six agreed regarding the appropriate grouping for 11 of the entities, and five of the six agreed with regard to the remaining entity (enuresis).

Section 2 of the Inventory presented residents with each of these clinical entities and asked them to respond to each entity by completing a 5-point rating scale to indicate their current self-perception of, for example, overall competence in diagnosing this entity. The rating scale ranged from "None" (1) to "Extreme" (5). Each resident completed nine ratings for each clinical entity. These included: (1) competence in *diagnosis*; (2) competence in *management*; (3) competence in *referral*; (4) ability to *counsel and advise parents*; (5) knowledge of hospital and community *resources* which could assist with diagnosis and/or management; (6) the *interest of the pediatric faculty* in this clinical entity; (7) the resident's perceived *need to learn more* about this entity; (8) the *future relevance* to their career of the ability to *manage* this entity; and (9) the *future relevance* to their career of the ability to *identify and refer* this entity.

Knowledge. Section 3 of the Inventory consisted of 60 multiple-choice questions designed to assess *knowledge* of behavioral pediatrics. All used the "one best answer" format with five alternatives presented. These questions were selected to incorporate knowledge previously designated as important by the directors of the behavioral training programs and covered three age groups (infancy, school age, and adolescence), as well as general issues (such as interviewing and statistics).

Statistical Analysis

All measures, regarding both attitudes and knowledge, were assessed by analysis of variance to compare

* Available upon request.

difference scores (end of year minus beginning of year performance) to detect significant differences in the amount of change between the three types of programs.[†] For those measures where the *F* ratio was statistically significant at the 0.05 level or better, Scheffe post-hoc analysis was employed. All results reported as statistically significant achieved the 0.05 level or better, unless otherwise indicated.

RESULTS

Section 1: Interest

Examining ratings of "current interest in behavioral pediatrics" revealed mean scores which ranged from 3.29 to 3.80 at the beginning of the year and 3.21 to 3.71 at the end of the year. These indicated "moderate" to "definite" interest on the part of the residents. PL-1 residents entering the Funded programs displayed the highest mean score (3.80). This suggests a self-selection factor, with residents who are more interested in behavioral issues tending to enroll in programs which emphasize behavioral pediatrics. However, there were no significant differences among the three program groups in the amount of change observed over the year, for any PL year.

Section 2: Attitudes

PL-1 Residents. Section 2 of the Inventory, assessing the residents' attitudes regarding the clinical entities, revealed only one significant effect related to program type for PL-1 residents. The results of self-rated *ability to counsel and advise parents* are shown in Table 2. While all residents displayed some improvement during the first year, residents in Funded and Control programs demonstrated significantly greater change over all entity groups than did Not Funded residents. There was also a significant overall effect of entity group, for all programs, with significantly greater improvement found for mixed and for physical entities than for behavioral entities. This suggests that PL-1 residents are largely oriented towards learning related to physical (or more "medical") issues and may best learn about those behavioral topics which represent a "mixture" of physical and behavioral issues, rather than those which are more "purely" behavioral.

PL-2 Residents. Ratings of PL-2 residents demonstrated significant differences related to program type for five measures. The amount of change found for self-reported *competence in management* is shown in the top section of Table 3. There was a significant interaction of program type and entity group. The relevant comparisons are shown in the top section of Table 4, presenting a summary of significant findings by type of

TABLE 2. PL-1 Residents' Ratings of "Ability to Counsel and Advise Parents": Mean Amount of Change during the Academic Year (End of Year Score Minus Beginning of Year Score), by Program Type and Entity Group

	Funded Programs	Not Funded Programs	Control Programs
Physical entities	0.36	0.32	0.59
Mixed entities	0.46	0.27	0.52
Behavioral entities	0.24	0.06	0.28

TABLE 3. PL-2 Residents' Ratings of "Competence in Management," "Ability to Counsel and Advise Parents," and "Future Relevance—Ability to Manage": Mean Amount of Change During the Academic Year (End of Year Score Minus Beginning of Year Score), by Program Type and Entity Group

	Funded Programs	Not Funded Programs	Control Programs
Measure: Competence in Management			
Physical entities	0.07	0.28	0.16
Mixed entities	0.22	0.22	0.22
Behavioral entities	0.27	0.20	0.03
Measure: Ability to Counsel and Advise Parents			
Physical entities	0.10	0.29	0.20
Mixed entities	0.20	0.17	0.24
Behavioral entities	0.30	0.33	0.03
Measure: Future Relevance—Ability to Manage			
Physical entities	-0.24	0.04	-0.09
Mixed entities	0.02	-0.16	-0.04
Behavioral entities	-0.09	-0.06	-0.23

entity. The top section of Table 5 presents a summary of significant findings by type of program.

Similar results were found for changes in the PL-2 residents' reported *ability to counsel and advise parents* (see the middle section of Table 3). Significant findings are summarized in the middle section of Table 4 by type of entity and in the middle section of Table 5 by type of program.

PL-2 residents' prediction of the *future relevance* of their ability to manage these entities generally showed either no change or a decrease over time (see the bottom section of Table 3). This finding of a *decline* over time in ratings of "future relevance" replicated the results of an earlier study.³ The statistical findings are summarized in the bottom section of Tables 4 and 5.

The pattern of results was thus similar for PL-2 residents for three measures: competence in management, ability to advise parents, and prediction of future relevance. Funded and Not Funded residents demonstrated significantly greater improvement, or less decrease, for behavioral entities than did Control residents. Also, relative to their ratings for physical disorders, Funded residents consistently displayed greater improvement, or less decrease, for both behavioral and mixed disorders. It should be noted, however, that the

[†] The analysis reported in this paper grouped all residents within the same program type (e.g., all residents in Funded programs were treated as a group). To ensure that these results were not distorted, a second analysis was performed whereby residents were grouped within their own school, and the schools, in turn, were "nested" within a program type. Comparable results were obtained by these two approaches.

TABLE 4. A Summary of Significant Findings for the Amount of Change in PL-2 Residents' Ratings of "Competence in Management," "Ability to Counsel and Advise Parents," and "Future Relevance—Ability to Manage": Results by Type of Entity^a

Measure: Competence in Management	
Physical entities	Not Funded programs greater than Controls; Controls equivalent to Funded
Mixed entities	No significant differences
Behavioral entities	Funded and Not Funded programs equivalent; both greater than Controls
Measure: Ability to Counsel and Advise Parents	
Physical entities	Not Funded programs greater than Controls; Controls were equivalent to Funded
Mixed entities	No significant differences
Behavioral entities	Funded and Not Funded programs equivalent; both greater than Controls
Measure: Future Relevance—Ability to Manage	
Physical entities	Funded equivalent to Controls and Controls equivalent to Not Funded, although Funded decreased more than Not Funded
Mixed entities	Not Funded equivalent to Controls and Controls equivalent to Funded, although Not Funded decreased more than Funded
Behavioral entities	Control programs decreased more than Funded; Funded equivalent to Not Funded programs

^a "Equivalent" indicates that no significant differences were found between groups.

TABLE 5. A Summary of Significant Findings for the Amount of Change in PL-2 Residents' Ratings of "Competence in Management," "Ability to Counsel and Advise Parents," and "Future Relevance—Ability to Manage": Results by Type of Program^a

Measure: Competence in Management	
Funded programs	Behavioral entities equivalent to Mixed, both greater than Physical
Not Funded programs	Physical entities equivalent to Mixed and Mixed equivalent to Behavioral, although Physical greater than Behavior
Control programs	Mixed entities equivalent to Physical, with both greater than Behavioral
Measure: Ability to Counsel and Advise Parents	
Funded programs	Behavioral entities greater than Mixed, Mixed greater than Physical
Not Funded programs	Behavioral entities equivalent to Physical, both greater than Mixed
Control programs	Mixed entities equivalent to Physical, both greater than Behavioral
Measure: Future Relevance—Ability to Manage	
Funded programs	Physical entities decreased more than Behavioral; Behavioral decreased more than Mixed
Not Funded programs	Mixed entities decreased more than Behavioral; Behavioral decreased more than Physical
Control programs	Behavioral entities decreased more than Physical; Physical decreased more than Mixed

^a Equivalent indicates that no significant differences were found between groups.

Funded group showed less improvement (or greater decrease) for physical disorders than did the Not Funded group.

A different pattern of results was found for two other measures for PL-2 residents. With regard to *knowledge of resources*, Not Funded residents improved significantly more than Funded residents, who in turn improved significantly more than Control residents (see

the top section of Table 6). This was the case over all entity groups. Since the absolute ratings of Funded residents were the highest of all three groups at the beginning of the year, these changes resulted in the absolute ratings of Not Funded residents becoming nearly as high as those of Funded residents by the end of the academic year.

Similar effects were found for PL-2 residents' ratings

of *faculty interest* (see the bottom section of Table 6). With regard to behavioral disorders, Not Funded residents demonstrated significantly greater improvement than did Funded residents, whose ratings decreased but who, in turn, decreased marginally less than did Control residents. This yielded absolute ratings by Not Funded residents which were almost as high as those of Funded residents by the end of the academic year.

Results were thus similar for PL-2 residents for two measures: residents' knowledge of resources and their perception of faculty interest. Absolute ratings at the beginning of the year were highest for the Funded group but, by the end of the year, the Funded and Not Funded residents were equivalent, and both had higher ratings than did the Control group, at least with regard to behavioral entities.

PL-3 Residents. Third year residents did not demonstrate any significant effects related to program type for Section 2 of the Inventory.

Section 3: Knowledge

The results of Section 3, assessment of changes in *knowledge* related to behavioral pediatrics, are shown in Table 7. There was a trend in all three residency years for Funded and Not Funded residents to demonstrate greater improvement during the academic year than did Control residents. This effect was significant in the PL-2 year and marginal in the PL-3 year. The resultant end of year performance was consistently superior for the Funded and Not Funded groups, compared to the Control group. This difference was mar-

TABLE 7. Mean Scores (Percent Correct) at the Beginning and End of the Academic Year, and Mean Difference Scores, on Section 3 of the Inventory (Knowledge of Behavioral Pediatrics), by PL Year and Program Type

	Funded Programs	Not Funded Programs	Control Programs
PL-1 residents			
Begin year	59.53	60.15	58.99
End year	63.67	63.90	60.93
Difference score	04.14	03.75	01.93
PL-2 residents			
Begin year	63.23	62.78	62.15
End year	67.55	67.26	62.82
Difference score	04.33	04.48	00.67
PL-3 residents			
Begin year	67.05	66.23	61.07
End year	68.89	70.09	61.15
Difference score	01.84	03.86	00.09

ginal in the PL-1 year and significant in the PL-2 and PL-3 years.

DISCUSSION

Self-reported attitudes, which focused upon specific clinical entities, demonstrated only one effect of program type in the first year and none in the third year. It thus appears that virtually all significant change *related to the type of program* occurred during the PL-2 year. Three measures demonstrated a clear advantage of training: self-reported competence in management, reported ability to advise parents, and prediction of the future relevance of residents' ability to manage behavioral and mixed entities. The fact that Funded and Not Funded residents' ratings of behavioral entities revealed significantly greater improvement, or less decrease, than did those of Control residents presumably reflects the impact of mandatory training in behavioral pediatrics—whether or not such training is externally funded. The more consistent effects of training for both behavioral and mixed disorders shown by Funded residents may be a function of a broader focus on a variety of topics made possible by external funding.

A different pattern of results emerged for two other attitudinal measures: knowledge of resources and perceived faculty interest. The fact that Funded residents displayed higher absolute ratings for behavioral entities at the beginning of the year may reflect higher expectations and the impact of training during the PL-1 year. Training in Not Funded programs, however, produced the greatest change over the course of the second residency year, resulting in both "mandatory training" groups being equivalent by the end of the year, and both superior to the Control programs. These data suggest that the presence of required training in behavioral pediatrics, whether externally funded or not, will assist PL-2 residents to locate relevant resources in their environment to assist them with diagnosis and/or management of *all* types of clinical entities. Such mandatory training also appears to enhance the degree to which

TABLE 6. PL-2 Residents' Ratings of "Knowledge of Resources" and "Faculty Interest": Mean Amount of Change During the Academic Year (End of Year Score Minus Beginning of Year Score) and Resultant Mean Scores at the End of the Year, by Program Type and Entity Group

	Funded Programs	Not Funded Programs	Control Programs
Measure: Knowledge of Resources			
Physical entities			
Difference score	0.32	0.59	0.18
End year score	3.91	4.02	3.90
Mixed entities			
Difference score	0.36	0.43	0.29
End year score	3.56	3.46	3.53
Behavioral entities			
Difference score	0.39	0.54	0.14
End year score	3.20	3.17	2.98
Measure: Faculty Interest			
Physical entities			
Difference score	-0.04	0.03	-0.05
End year score	3.82	4.20	3.78
Mixed entities			
Difference score	0.00	-0.03	-0.11
End year score	3.48	3.32	3.36
Behavioral entities			
Difference score	-0.09	0.28	-0.20
End year score	2.78	2.70	2.44

residents perceive the pediatric faculty as being interested in behavioral issues; this effect seems especially pronounced in the Not Funded programs, whose behavioral focus may be less salient than it is in programs whose external funding often enhances the "visibility" of behavioral pediatrics.² Residents in Not Funded programs may thus not become fully aware of the behavioral interests of the faculty until they have had mandatory training in behavioral pediatrics in their second year.

The effects of training shown in the attitudinal measures were paralleled by the results of the knowledge measure, based upon 60 multiple-choice questions. The Funded and the Not Funded residents consistently showed greater, though modest, improvement in their knowledge of behavioral and developmental issues during the academic year than did the Control residents, and this effect was most pronounced in the PL-2 year.

Several limitations of this study should be noted. The attitudinal data are based upon self-report, with no objective corroboration that residents' competence has actually increased. Also, these results represent relatively short-term changes. Ideally, we should assess the impact of training for these residents some years later and determine whether their patients' health has improved as a consequence of the specific training received regarding behavioral pediatrics. Finally, although the effects reported are statistically significant, the absolute magnitudes of change observed are not dramatic. While it is encouraging to find evidence of attitudinal change, and of increased knowledge, it is hoped that residents have been affected more than is shown by these results.

One obstacle to documenting the effects of training is the large variance between programs—even within the same program "group." It seems reasonable to suppose that some of the "mandated training" schools were better able than others to impact upon their residents. For example, a previous evaluation of residency training at the University of Maryland (one of the Funded programs), using a very similar assessment instrument, revealed attitudinal changes which were from three to five times greater than those reported in this paper. The present results represent a composite of *all* schools in a given group.

A second challenge which confronts the program evaluator is the relative homogeneity of pediatric residents. Those of us who teach residents generally view them as a highly varied group, overlooking the fact that they are a highly selected population of intelligent, "test-wise" individuals. As an example, consider the percentile rankings provided by the American Board of Pediatrics for their In Training Exam: in 1981, scores of 67% correct and 55% correct translated to percentile ranks of 56 and 14, respectively. This illustrates the fact that residents whose relative rankings are very different actually score quite similarly when we consider the absolute magnitude of performance. This homogeneity among pediatric residents makes it difficult to demon-

strate striking differences in performance as a function of different training experiences.

While our findings are in the expected direction, the order of magnitude of the changes observed are disappointing. It would certainly be of interest to evaluate other areas of residency education (e.g., cardiology, neonatology, infectious disease) to determine whether our results reflect problems unique to the behavioral area, or whether all areas of pediatric training experience common difficulties in documenting attitudinal and educational change. We would hypothesize that similar problems will be observed across content areas in pediatric education.

Since our findings do not represent dramatic differences in the amount of change in attitudes or knowledge attributable to training in behavioral pediatrics, we are hesitant to make dogmatic statements regarding the most appropriate approach to residency training in this area. Nevertheless, our data strongly suggest that *mandated* training in behavioral pediatrics will produce desired changes in attitudes towards the psychosocial aspects of pediatric care, in residents' perceived competence in this area and in their knowledge base. External funding for such training in a residency program appears to add only a few advantages, such as attracting those residents who are particularly interested in behavioral pediatrics and providing an opportunity to address a greater variety of topics. It should be noted, however, that there are additional advantages of external funding with regard to faculty development and the training of fellows.²

We have argued in a previous paper that the teaching of behavioral pediatrics should begin in the PL-1 year.³ However, data presented in this paper indicate that the second year of residency may be the more critical year with regard to residents' receptivity to behavioral issues. Clearly, those changes in attitudes, perceived competence, and knowledge which were a function of required training were seen predominantly in the PL-2 year.[‡] The effects which were observed in the PL-1 year suggest that residents will be more receptive to learning about "mixed" entities, those which require attention to both behavioral and physical aspects, in contrast to those entities which are more "purely" behavioral (see Table 1 for examples).

In summary, the present study represents one approach to assessing the short-term impact of training in behavioral pediatrics. Three conclusions may be drawn from these results. First, these data demonstrate that changes in residents' attitudes and knowledge with regard to behavioral pediatrics are related to the presence of *required* training during the residency years: residents who have had mandatory training show greater change than control residents. Second, programs which are funded to provide such training appear to generate the

‡ We examined the data for a hypothesized "cumulative impact" for those PL-2 residents who had had mandatory training during their PL-1 year as well, and were unable to document such an effect.

most consistent attitudinal effects with regard to *both* behavioral and "mixed" disorders. Third, these results suggest that the impact of behavioral pediatric training is most apparent in the PL-2 year.

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evaluation and the faculty members in each program who assisted us in obtaining these data. We also thank Mrs. Charlene Johnson for her help in all phases of the project and J. Richard Hebel, Ph.D., and James F. Gardner, S.C.M., for their expert assistance with data processing. We would also like to express our appreciation for the support of the William T. Grant Foundation.

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Behavioral and Developmental Pediatrics

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A Nationwide Survey of Behavioral Pediatric Residency Training

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ABSTRACT. This survey assessed the prevalence of behavioral pediatric residency training in the U.S., the professional background of faculty, training methods utilized, curriculum content, and barriers to expansion of behavioral training. Questionnaires were returned by 60% of 246 accredited pediatric residency programs; of these, 49% had a "formal" behavioral training program, 38% offered some training, and 13% offered none. Formal programs identified 419 faculty members involved in teaching behavioral pediatrics to residents: physicians (48%), psychologists (21%), social workers (19%), nurses (8%), other (4%). Mandatory training was more frequent than elective training; continuous training was more likely than block rotations to be mandatory. "Inadequate funding" and "lack of appropriately trained faculty" were most frequently cited as barriers to expansion of the teaching of behavioral pediatrics.

Since 1978, when the Task Force on Pediatric Education¹ recommended inclusion of training in biosocial pediatrics in all pediatric residency programs, interest in the development of biosocial or behavioral training programs has grown. Reports describing residency training programs in behavioral pediatrics are increasing in the literature, including two program reports from our own institution,^{2,3} and findings from a descriptive study of the 11 programs funded by the William T. Grant Foundation to provide this training for their residents.⁴ A subsequent phase of the later study⁵ also included 13 "comparison" residency programs initially selected because they did not formally require behavioral training for their residents. Interestingly, between 1979 and 1981, seven of these 13 residency programs implemented mandatory training programs in behavior. This development of new programs in a relatively small sample suggested that it would be useful and informative to ascertain the current prevalence of behavioral training for pediatric residents in the United States. A mail survey was conducted for this purpose, and also to determine the professional background of involved faculty, training methods utilized, curriculum content, and perceived barriers to further expansion of behavioral training for residents.

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METHOD

In November, 1982, two copies of the survey questionnaire* were mailed to the program directors of the 246 accredited pediatric residency programs listed in the 1982-1983 American Medical Association directory.⁶ The accompanying cover letter requested that the chairman and chief resident (or equivalent) each independently complete and return a separate copy of the survey. In January, 1983 a second mailing was conducted to all programs which had not yet returned questionnaires. The final response rates were 60% for chairmen (N = 147) and 50% for chief residents (N = 124). This report is based only on faculty responses, as the data from the two groups were, for practical purposes, equivalent.

Chi-square tests, incorporating the Yates correction for continuity,⁷ were employed for data analyses. Due to the large number of multiple comparisons which were made, the level $p < 0.01$ ($\chi^2 > 6.64$, $df = 1$) was selected as the criterion for statistical significance; results of tests described in this paper as statistically significant attained this p level.

RESULTS

Characteristics of Responding Programs

Respondents were asked to select a program type which best represented their institution, as listed in Table 1. Programs described as University-based or -affiliated constituted the majority (57%).

* A copy of the questionnaire is available from the authors upon request.

TABLE 1. Behavioral Training Offerings by Program Type

Program Type	Nature of Training Offered			Total (%) (n = 147)
	Formal Training Program (%) (n = 72)	Some Training Offered (%) (n = 56)	No Training Offered (%) (n = 19)	
University hospital-based and university-affiliated	26	26	5	57
Childrens hospital	6	3	2	11
Community hospital	7	3	4	14
Military	4	3	1	8
Other	6	3	1	10
Total	49	38	13	100

TABLE 2. Disciplines of Behavioral Pediatric Faculty in 72 Programs Offering Formal Training

Discipline	Faculty Members Designated		% of Programs Designating this Discipline
	Number	%	
Physician	200	48	85
Psychologist	90	21	63
Social worker	79	19	47
Nurse	33	8	33
Other ^a	17	4	17
Total	419	100	

^a Primarily comprised of educators, speech/audiology specialists, and disciplines other than the traditional health/mental health professions.

TABLE 3. Specialized Training of Physician Faculty in 72 Programs Offering Formal Training

Training Areas	Number ^a	%
Pediatrics	262	70
Child development		60
Neurology		51
Behavioral pediatrics		45
Adolescent medicine		39
Developmental disabilities		35
Infant development		32
Child psychiatry	75	20
Other	36	10
Total	373	100

^a In several cases one physician was said to represent more than one subspecialty.

Extent of Training Offered

Two questions were posed to determine if the institution offered a "formal" training program in behavioral pediatrics, and, if not, if *any* training was offered, either required or elective. Thus, three groups of programs could be defined, namely, programs offering: (1) *formal* behavioral training (required or elective), (2) *some* training (required or elective), or (3) *no* behavioral training. Responses are summarized in Table 1.

Behavioral Pediatric Faculty

In order to determine the composition of behavioral pediatric faculty within the 72 programs offering *formal* training, these respondents were asked to indicate by

TABLE 4. 405 Training Experiences Identified by 128 Programs Which Offer Behavioral Training

Type of Training	Residency Year			
	PL-1 (%) (n = 111)	PL-2 (%) (n = 151)	PL-3 (%) (n = 143)	Total (%) (n = 405)
Continuous training				
Mandatory	16	16	14	46 ^{a,b}
Elective	1	2	3	6
Block rotations				
Mandatory	9	11	7	27 ^a
Elective	2	8	11	21
Total	28	37	35	100

^a Mandatory experiences were offered significantly more frequently ($p < 0.01$) than electives.

^b Continuous training was significantly more likely ($p < 0.01$) to be mandatory.

discipline the number of faculty members devoting 25% or more time to teaching in behavioral pediatrics. Table 2 depicts the disciplines represented by faculty members in these 72 programs.

The same respondents also indicated the number of *physician* faculty members who had completed formal training in a number of subspecialty areas judged to be relevant to behavioral pediatrics. It can be seen in Table 3 that pediatricians, distributed across several subspecialty areas, comprised the majority of physician faculty.

Training Methods Utilized

Respondents from the 128 programs offering "formal" or "some" behavioral training completed check lists to indicate when two types of training experiences were offered, namely "block" rotations and continuous training (e.g., continuity clinic). Further, they indicated whether each training experience identified was mandatory or elective. The 405 training experiences identified by these 128 programs are described in Table 4.

Curriculum Content

In order to ascertain the most frequently offered curriculum topics in the training programs, respondents were requested to complete a checklist to indicate which of 26 topics were offered in each of the three residency years. Inspection of the completed questionnaires revealed that some respondents appeared to have been

conscientious in indicating which topics were formally covered. However, nine respondents checked *all* topics for all years, several commenting that they thought all topics were at least *informally* covered sometime during the year, at continuity clinic for example. These nine respondents were deleted from the analysis, though it is unknown whether the remainder considered formal or informal topic coverage to be the criterion for their responses. Thus, the results might be most parsimoniously interpreted as opinions of what topics *should* constitute a behavioral pediatric curriculum for residents.

Of the 26 curriculum topics, some were closely related. Since the frequency of inclusion for all such topics were not significantly different, they were each collapsed to form a composite topic. The net result of this procedure was the final list of 11 topics presented in Table 5.

Marginally significant differences were noted, however, for all topics which referred to the age of the pediatric population under consideration; i.e., all topics related to adolescence were included *less* frequently than those for infancy and preschool.

Another checklist was used to determine which of ten *modalities of intervention* were being taught to residents. A problem was encountered here in that some respondents suggested that residents were *familiarized* with these modalities, while others indicated that actual *training* was offered. Thus, the results in Table 6 can be most conservatively interpreted as an indication of which modalities respondents considered to be most *relevant* to the field of behavioral pediatrics.

Barriers to Expansion of Behavioral Training

All respondents were asked to indicate which of eleven potential barriers they perceived to exist in their own departments; they were free to select all items which were applicable. Table 7 provides a listing of the barriers selected. Significant differences were found between "inadequate funding" and "lack of appropriately trained faculty," and between each of these two barriers and all remaining barriers.

In response to a final question, 93% of all respondents expressed the desire to initiate or further develop a behavioral pediatric residency training program in their department (if the barriers they listed could be overcome).

TABLE 6. Inclusion of Intervention Modalities (n = 128)

Modality	% of Programs Including Modality ^a
Anticipatory guidance	82 ^b
Parent counseling	79 ^b
School consultation	66
Behavior modification	57
Pharmacotherapy	55
Family therapy	51
Psychodynamically-oriented child therapy	38

^a In at least one PL year.

^b Included significantly more frequently ($p < 0.01$) than all other modalities except "School consultation."

TABLE 7. Selection of "Barriers" to Initiation or Further Development of Behavioral Programs (n = 147)

Barrier	% of Programs Selecting Barrier
Inadequate funding	66 ^a
Lack of appropriately trained faculty	50 ^b
Inadequate space	34
No "room" in curriculum	32
Lack of housestaff interest	20
Housestaff resistance to program	18
Lack of faculty interest	16
Other	15
Lack of appropriate training sites	14
Faculty resistance to program	12
Resistance of medical school/hospital administration to program	6

^a Selected significantly more frequently ($p < 0.01$) than the remaining 10 items.

^b Selected significantly more frequently ($p < 0.01$) than the remaining 9 items.

TABLE 5. Inclusion of Curriculum Topics (n = 119)^a

Topic	% of Programs Including Topic ^b
Diagnosis of developmental, emotional, and learning disorders	91 ^c
Normal psychosocial development	87 ^c
Management of developmental, emotional, and learning disorders	87 ^c
Normal neurological development	82
Interpretation of psychological test results	82
Indications of psychosocial abnormalities	81
Interviewing techniques	80
Psychosocial aspects of illness and hospitalization	76
Referring to behavioral specialists	76
Death and dying	66
Consultation with school personnel	65

^a Nine programs indicating that *every* topic was included in *each* PL year were eliminated from this analysis.

^b In at least one PL year.

^c Included significantly more frequently ($p < 0.01$) than the last two topics.

DISCUSSION

The survey findings indicate that a substantial number of residency programs are offering behavioral training to residents, with only 13% stating that no training is offered. We were surprised to note the number of programs reporting behavioral training to be *mandatory* for residents. Although similar data from the period prior to the publication of the 1978 Task Force report are not available, it would appear that the residency programs responding to this survey are, as a group, attempting to respond to the report's recommendations regarding behavioral training for residents.

A substantial number (28%) of the training experiences in Table 4 were scheduled in the PL-1 year. Whether this should be done has been a subject of recent debate. In the descriptive study of 11 behavioral pediatric programs,⁴ faculty members interviewed frequently expressed the belief that behavioral pediatrics should *not* be taught in the first year. Yet, in four programs mandating behavioral block rotations in the PL-1 year, faculty and housestaff almost universally concurred that behavioral training *should* be introduced at this time. Data from a subsequent phase of the study,⁵ which assessed the impact of training upon residents' attitudes and knowledge regarding behavioral topics, suggested that the greatest impact of training occurred in the PL-2 year. Thus, the question of when behavioral training should optimally be introduced and subsequently offered remains open.

As might be expected, physicians are the primary providers of behavioral teaching (48%), yet representatives from all other disciplines combined (especially psychology and social work) constituted 52% of faculty identified in Table 2. To the extent that this provides an interdisciplinary model to trainees, these findings are encouraging; one of the major challenges in behavioral training (and practice) is enhancing interdisciplinary understanding and collaboration in approaching complex clinical problems. On the other hand, there is much to be said for the value of behaviorally-oriented pediatricians as role models for residents. Clearly, an appropriate balance needs to be maintained. The fact that 85% of programs designated physicians as behavioral faculty members suggests this is the case.

It was similarly encouraging to see such strong representation from pediatricians among *physician* faculty. Although child psychiatrists were frequently designated as teachers of behavior, the remaining 80% of physician faculty represented other (principally pediatric) subspecialties (Table 3). This is important with respect to the role model issue previously discussed. It is also of interest to note that the 75 child psychiatrists identified constituted only about 18% of the total of 419 faculty members listed in Table 2, and that psychologists and social workers were each identified in equal or greater numbers.

With regard to curriculum topics, the trend toward de-emphasis of adolescence reached only marginal significance. This trend was consistent, however, with similar findings noted in the description of 11 behav-

ioral training programs for residents,⁴ and with concerns voiced by the Task Force on Pediatric Education.¹ The fact that anticipatory guidance and parent counseling were so frequently included as intervention modalities was not surprising, as many would consider these modalities as core skills in both general and behavioral pediatric practice.

Finally, the selection of perceived barriers to initiation or further development of behavioral training programs revealed that lack of funding was the most salient problem faced by respondents. This finding probably reflects, in part, the relatively low rate of insurance reimbursement usually provided for behavioral and mental health services. Thus, as a clinical service, behavioral pediatrics rarely generates a significant level of revenue.

The second-ranked barrier selected, lack of appropriately trained faculty, suggests a nationwide shortage of faculty trained in behavior, and the need to increase the number of academic specialists in this field. One obvious strategy to address this shortage would be encouragement of additional fellowship opportunities in behavioral pediatrics. (Only 18 of the 147 programs surveyed in this study stated that a behavioral pediatric fellowship program was offered). However, the current status of behavioral pediatrics within academic medicine may presently be inhibiting residents from pursuing such fellowships. In the previous description of behavioral pediatric programs,⁴ it was noted that the academic behavioral pediatricians interviewed often faced a unique dilemma: departmental chairmen on one hand held that behavioral pediatrics should not be seen as a specialty field, but rather as a content area which should permeate *all* aspects of pediatric practice. Yet, at the same time, the field of behavioral pediatrics was criticized by these same chairmen for failing to develop a sound foundation in research. According to Friedman et. al.,⁴ this creates a "double bind" for behavioral pediatric faculty members. They are encouraged to remain "generalists," yet are also expected to develop and demonstrate *special* expertise through conducting research and publishing. When chairmen waver between these two expectations, criteria for academic recognition become unclear, often resulting in insecurity among these faculty members.

It is clear that in the long run, the field of behavioral pediatrics will need to demonstrate more meaningful research productivity if it is to attain requisite status in the academic pediatric pantheon. In fact, the William T. Grant Foundation, the foremost supporter of behavioral pediatric *training* in the recent past, has shifted its emphasis to support of *research* in the field, partly for the reasons discussed above. Thus, if increased fellowship training is selected as a strategy, it is essential that such programs include a strong emphasis on research.

CONCLUSIONS

This survey revealed that a substantial number of residency training programs are offering behavioral training to housestaff, and that many are mandating

such training. While pediatricians were most involved as teaching faculty, the contributions of other disciplines (particularly psychology, social work, and child psychiatry) were noteworthy. This study points to in-

sufficient funds and a shortage of appropriately trained faculty in the behavioral field as the major problems confronting future development of behavioral pediatric residency training programs.

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Residents' Knowledge of Behavioral Pediatrics

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ABSTRACT. Four groups of residency programs (4433 residents) were compared regarding performance on the In-Training Exam of the American Board of Pediatrics and a 30-item addendum assessing behavioral knowledge: 10 programs *funded* to provide mandatory training, 6 *not funded* but requiring training, 4 *control* programs not requiring training but participating in an evaluation of behavioral training, and *all other* programs (221) whose residents took the exam. Three measures were calculated for each resident: percent correct on "organic" items; percent correct on "behavioral" items; and a ratio (behavioral to organic). Moderate positive correlations were found between organic and behavioral scores. There were no significant differences in organic performance related to program type. Ratio scores were higher for PL-1-funded residents than for any other PL-1 group. For PL-2s, Funded, Not Funded, and Control residents performed better than the All Other group. By the 3rd year, Funded residents performed better than All Other residents; Not Funded and Control scores fell in between. These data suggest that: (1) behavioral knowledge is only moderately related to organic knowledge; (2) requiring behavioral training increases behavioral knowledge but does *not* decrease the level of organic knowledge; and (3) funded programs attract residents more knowledgeable about behavior who, during their training, remain more knowledgeable than residents in programs not participating in an evaluation of behavioral training.

During the past decade, an increasing number of residency programs have instituted a significant amount of formal training in the developmental and behavioral aspects of pediatrics.^{1,2} This interest has been accompanied by the challenge of documenting the impact of such training experiences. Recent reports of internal program evaluations have shown significant changes in residents' attitudes as a function of training.^{3,4} In addition, a preliminary report of data from a formal evaluation of 24 pediatric programs indicates that the greatest amount of change in attitudes and knowledge related to behavioral pediatrics, during the academic year 1980 to 1981, was found in programs with mandatory training in developmental and behavioral pediatrics.⁵ To date, however, there has been no analysis of residents' performance on a nationwide assessment of knowledge, such as that conducted by the American Board of Pediatrics as a function of their program's commitment to behavioral pediatric training.

The purpose of this study was to compare knowledge regarding both behavioral and organic aspects of pedi-

atrics among residents who participated in the In-Training Exam administered by the American Board of Pediatrics in July, 1981.* Four groups of residency programs were compared: (1) 10 programs which were funded by the W. T. Grant Foundation to institute required training in behavioral pediatrics, (2) 6 programs which were not funded by the Foundation to teach behavioral pediatrics but which provided mandatory training in behavior, and (3) 4 comparison programs which did not require behavioral training. Each of these three groups also participated in a separate evaluation of residents' attitudes and knowledge regarding behavioral pediatrics.⁵ The fourth group included all other programs whose residents took the In-Training Exam. It was hypothesized that residents' knowledge of behavioral issues would be superior in the first two groups, which had instituted required training in developmental and behavioral pediatrics.

METHODS

Procedure

The 241 programs participating in the study were selected as follows. In 1978, 50 programs submitted applications in response to the W. T. Grant Founda-

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* It should be noted that the American Board of Pediatrics was not responsible for the design, analysis, and conclusions of this report.

tion's request for proposals to institute formal residency training in behavioral pediatrics. The criteria for eligibility were that this training be offered to all residents and that at least some aspect of such training be mandatory. Eleven programs were funded by the Foundation, and all subsequently agreed to participate in an evaluation of their behavioral training. Further details regarding the nature of this training have been reported previously.² Ten of these programs participated in the In-Training Exam, and these were designated as the group of *Funded* programs.

A group of 13 "comparison" programs were initially selected to represent programs which did not place a significant training emphasis upon behavioral pediatrics. In making these selections, the authors began with 248 pediatric residency programs in the United States and deleted the 50 programs which had applied for funding by the W. T. Grant Foundation (thus eliminating an interest in developing behavioral programs). The remaining list of 198 programs was then reviewed independently by four individuals familiar with pediatric residency programs, who deleted from the list any programs which they believed had a significant component of training addressed to behavioral or developmental issues. From the final list of 166 programs, 15 were selected so as to parallel the distribution of programs within the *Funded* group, with regard to geographic location and size of the residency program. Of the 15 programs invited to participate in the evaluation study, 13 accepted.

During the 1st year of the evaluation study (1980 to 1981), all "comparison" programs were contacted to confirm that they had not introduced mandatory training in behavioral pediatrics subsequent to their inclusion in the study. This survey, however, revealed that seven programs had in fact done so. The 13 programs were thus subdivided into groups. One group of seven programs, while not funded to do so, had instituted either a "block" rotation or continuous training in behavioral pediatrics which was required for all residents. Six of these programs participated in the In-Training Exam, and these programs were designated as the *Not Funded* group. In the remaining programs, behavioral training was either elective or was not formally offered. Of these six programs, four participated in the In-Training Exam, and these programs were designated as the *Control* group. Of the four *Control* programs, three offered elective training in behavioral pediatrics.

The final group of programs consisted of all other pediatric programs in the United States which participated in the In-Training Exam. Note that none of these 221 programs had been involved in the evaluation study of residents' attitudes and knowledge regarding behavioral pediatrics. These programs were designated as the *All Other* group.

Instruments

Knowledge of *organic* aspects of pediatrics was assessed using all *nonbehavioral* items included in the In-Training Exam administered by the American Board

of Pediatrics in July 1981. These included multiple-choice questions with a "one best answer" format, with five alternatives presented, and also "true-false" type questions. An "organic" score was obtained by deleting from the In-Training exam all questions judged by the staff of the American Board of Pediatrics to relate to behavior and child development. An overall score (percent correct) was then calculated for the remaining nonbehavioral items.

Knowledge of *behavioral* aspects of pediatrics was assessed by a 30-item Addendum administered at the conclusion of the In-Training Exam.[†] All items were multiple-choice questions using the "one best answer" format, with five alternatives presented. The questions were written by two of the authors (S.P. and S.B.F.) and were reviewed by the Board. The behavioral items covered three age groups (infancy, school-age, and adolescence), as well as general topics such as interviewing and statistical analysis.

Based on *all* residents, the mean score for the 30-item Addendum was 15.71 (for 52% correct), and the SD was 5.47 (approximately 18%). The internal *Reliability*, as estimated using a KR-20 formula, was 0.89. This is unusually high for such a small set of items, probably owing to the relatively low mean and high degree of variability. The variance for a comparable test in general pediatrics is usually around 10 to 15% (SD 3 to 4%).

For each program group, residents' scores for organic and behavioral items were obtained from the American Board of Pediatrics, using code numbers such that no resident was identified. Code numbers were also employed for individual programs such that a particular program could not be identified without written permission by the Chairman to "break the code" and release overall performance statistics for that program (individual residents would still remain anonymous).

Response Rate

Table 1 presents the number of residents taking the In-Training Exam and the number who also completed the Behavioral Pediatric Addendum. The response rate for the Addendum was uniformly high for all levels of training and for all four program groups. The total rate across all residents was 97.1%.

Statistical Analysis

Correlations between organic and behavioral scores were computed using Pearson's *r*, and then compared using an *r* to *z* transformation. Comparisons of performance between the different program groups were conducted by analysis of variance. When the resultant *F* ratio was statistically significant at the 0.05 level or better, Newman-Keuls post hoc analysis was employed. All results reported as statistically significant achieved the 0.05 level or better.

[†] While 30 is a relatively small number of questions, this was the maximum number recommended by the Board, given that this Addendum was an *optional* task presented at the conclusion of a 4-hour examination.

TABLE 1. Percentage of Residents Who Took the In-Training Exam Who Also Completed the Behavioral Pediatrics Addendum, by Pediatric Level (PL) and Program Group

	PL-1		PL-2		PL-3		Total	
	%	Total (N)	%	Total (N)	%	Total (N)	%	Total (N)
Funded programs (<i>n</i> = 10)	100	(119)	98	(91)	98	(64)	98	(274)
Not funded programs (<i>n</i> = 6)	100	(52)	100	(47)	100	(42)	100	(141)
Comparison programs (<i>n</i> = 4)	100	(42)	100	(43)	100	(35)	100	(120)
All other programs (<i>n</i> = 221)	96	(1700)	97	(1285)	98	(1044)	97	(4029)

RESULTS

For all three PL years, small to moderate positive correlations were found between organic scores (percent correct) and behavioral scores (percent correct), as shown in Table 2. While correlations for the All Other group were highest, the only significant difference between program types was found in the PL-3 year, where the correlation for Funded programs was significantly lower than that for the All Other group; the correlations for the other two groups fell in between these two values. This finding indicates that behavioral knowledge was more independent of organic knowledge for Funded residents than it was for All Other residents.

Residents' performance (percent correct) on *organic items* is presented in Table 3. Analysis of variance found no significant difference in performance related to program type.

In contrast, performance on *behavioral items* (shown in Table 4) revealed significant effects of program type. In the PL-1 year, Funded and Control residents demonstrated significantly better scores than did Not Funded and All Other residents. (This difference for Control residents was not observed for ratio scores, as presented below). Since performance was assessed at the beginning of the PL-1 year, this presumably reflects a resident selection bias, as these residents were just entering their respective programs and had not yet experienced any differences in training. In the PL-2 and PL-3 years, residents in the Funded, Not Funded, and Control groups performed significantly better than did residents in the All Other group.‡

To consider the possibility that the Funded, Not Funded, and Control groups represented "better" programs than did the All Other group, and that this was responsible for the significant differences found in behavioral performance, a *ratio score* was computed. Each resident's behavioral score was divided by his organic score, so as to control for organic knowledge. This ratio score is considered to be the most accurate reflection of behavioral knowledge. These data are presented in Table 5. In the PL-1 year, ratio scores were significantly

‡ It should be noted that organic and behavioral scores cannot be compared directly since the organic score represents a combination of one best answer questions and true-false questions, whereas behavioral items were all one best answer questions.

TABLE 2. Correlations between Organic Scores (Percent Correct) and Behavioral Scores (Percent Correct), by Pediatric Level (PL) Year and Program Type

	PL-1	PL-2	PL-3
Funded programs	0.33	0.45	0.18
Not funded programs	0.30	0.24	0.43
Control programs	0.16	0.31	0.19
All other programs	0.52	0.46	0.48

TABLE 3. Mean Scores (Percent Correct) and SDs on Organic Items, by Pediatric Level (PL) Year and Program Type

	PL-1		PL-2		PL-3	
	Mean	SD	Mean	SD	Mean	SD
Funded programs	55.9	9.3	60.2	9.0	67.2	7.9
Not funded programs	54.0	6.4	59.8	5.4	67.4	6.8
Control programs	56.0	7.4	61.7	7.8	66.8	7.4
All other programs	52.7	8.9	59.0	9.2	64.2	8.9

TABLE 4. Mean Scores (Percent Correct) and SDs on Behavioral Items, by Pediatric Level (PL) Year and Program Type

	PL-1		PL-2		PL-3	
	Mean	SD	Mean	SD	Mean	SD
Funded programs	63.3	13.3	63.6	13.4	67.0	10.8
Not funded programs	54.8	10.6	61.9	12.1	62.7	12.8
Control programs	60.1	12.2	64.8	13.9	65.9	13.0
All other programs	51.7	16.1	52.0	15.6	55.4	15.7

TABLE 5. Mean Ratio Scores (Behavioral/Organic) and SDs, by Pediatric Level (PL) Year and Program Type

	PL-1		PL-2		PL-3	
	Mean	SD	Mean	SD	Mean	SD
Funded programs	1.21	0.72	1.06	0.22	1.00	0.19
Not funded programs	1.02	0.22	1.04	0.21	0.93	0.18
Control programs	1.08	0.24	1.06	0.24	0.98	0.21
All other programs	0.98	0.28	0.88	0.24	0.86	0.24

higher for Funded residents than for any other group. This, again, apparently reflects a selection factor. In the PL-2 year, the Funded, Not Funded, and Control residents performed significantly better than the All Other group. In the PL-3 year, Funded residents performed

significantly better than those in the All Other group; Not Funded and Control scores fell in between and were not significantly different from either Funded or All Other performance.

DISCUSSION

The correlations found between organic and behavioral performance indicate that the extent of a resident's knowledge of behavior is only moderately related to his knowledge of organic pediatrics. Performing well in the behavioral area thus is not merely a reflection of overall competence. The significant difference seen in the PL-3 year suggests that, after Funded residents participated in mandatory behavioral training, these two areas of knowledge were even more independent of one another than they were for All Other residents. In this latter group, one might speculate that the "better students," who acquired greater organic knowledge, might also "pick up" more behavioral information. This is in contrast to the Funded residents: Exposure to *required* training in both areas apparently allows for even greater individual variation, such that residents can excel in one area or the other, or both.

With regard to organic performance, it is encouraging to note that devoting time and interest to behavioral issues during residency training does not affect residents' knowledge of the more traditional, organic aspects of pediatrics. Organic scores were not significantly different for programs that required behavioral training versus those that did not. It thus appears that acquiring behavioral expertise will not be done at the expense of general pediatric knowledge. There also did not appear to be any selection bias regarding residents' organic knowledge, since scores were not significantly different at the start of the PL-1 year as a function of program group.

There was, however, a definite selection bias with regard to behavioral knowledge. Entering PL-1 residents in Funded programs performed significantly better than did those in Not Funded and All Other programs. It is unclear as to why Control residents also scored higher than did Not Funded and All Other residents. However, if organic knowledge is controlled for, the resulting ratio score was highest for residents entering Funded programs—significantly higher than for any other group. It may be that the external funding for these programs gives more "visibility" to their mandatory training in behavior, consequently attracting those residents most interested in developmental and behavioral issues.

After experience in their own training program, PL-2 and PL-3 residents in the Funded, Not Funded, and Control programs evidenced behavioral knowledge superior to that of residents in All Other programs. If organic knowledge is controlled for, ratio scores demonstrated the same finding for PL-2 residents while, in the 3rd year, only the two extreme groups (Funded and All Other) were significantly different from one another.

These findings raise the question of why significant differences in the PL-3 year were only found between

the most extreme groups (Funded and All Other). In other words, why was the Not Funded group not also significantly different from at least the All Other group? One reason may be that the All Other group included 39 programs that had applied for funding from the W. T. Grant Foundation (presumably demonstrating some interest in behavioral pediatric training) but did not receive funding, and also included an additional 32 programs that had been judged as having a behavioral training component already in place. The behavioral performance of residents in these 71 programs may have improved the overall scores of the All Other group such that the ratio scores of the PL-3 residents were not significantly lower than those of the PL-3 residents in Not Funded programs.

A related question is why the behavioral performance of PL-2 and PL-3 residents in the Not Funded programs was not significantly superior to that of the Control residents, since this would suggest that required training (albeit not funded) is not superior to an elective experience. It must be recalled, however, that Control residents had been exposed to repeated testing regarding behavioral pediatrics as a function of their participation in a separate evaluation study. This experience may well have prompted increased interest in behavior, and thus may have enhanced their performance. Without this special testing experience, the behavioral knowledge of residents in programs offering only elective training might be significantly poorer than that of residents exposed to mandatory training which is not externally funded.

It may be that the four program types represent a *continuum* of experience in behavioral pediatrics. It is unlikely that any program provides absolutely *no* experience with behavioral issues. It thus may be that most residents in All Other programs simply have the least extensive and least systematic experiences. Next, three of the four Control programs did offer electives in behavior, and residents' interest and awareness may have been heightened by their participation in a study of behavioral pediatric training, which required repeated testing regarding their attitudes and knowledge in this area. More extensive exposure would be expected in the Not Funded programs since they required training in behavior for all residents although they were not externally funded to do so. Finally, the mandatory training in Funded programs may have been enhanced by the additional visibility of external funding specifically for this purpose, as suggested above. The significant difference in ratio scores in the PL-3 year between All Other and Funded programs thus probably represents the difference between the two extremes on the continuum.

Some limitations of this study should be noted. The results represent relatively short-term effects on knowledge, as measured by responses to multiple-choice questions. Ideally, we should assess the impact of training several years later and determine whether the health of these residents' patients has improved as a consequence of the residents' training experiences in behavioral and developmental pediatrics. Also, since this is a cross-

sectional study, it is not possible to assess change over time directly. It should be noted that all statistical analyses considered only effects related to program type *within* a given residency year; no test was made of the performance of PL-1 versus PL-2 versus PL-3 residents. Finally, while the effects reported are statistically significant, the absolute magnitudes of differences are not great. These are some of the difficulties inherent in any efforts to assess the effect of training. With regard to the magnitude of effects which are observed, it is interesting to use the Norm Tables provided by the American Board of Pediatrics for the 1981 In-Training Exam to compare the percentile rank for behavioral scores generated by the two extremes of the PL-3 groups. The mean for the Funded group was 67%, and the mean for the All Other group was 55%. The corresponding percentile ranks are 66 and 37%, respectively. The same phenomenon can be observed for the organic items (one best answer format): scores of 67 and 55% translate to percentile ranks of 56 and 14%, respectively. The enormous discrepancy between actual scores (percent correct) and percentile ranks illustrates the relative homogeneity of the entire population of pediatric residents. It is clearly difficult to demonstrate a major impact of training (via test scores) in a collection of individuals who are both intelligent and "test-wise." This appears to be the best explanation for the modest effects of training which are observed, based upon scores which have not been transformed into percentile scores.

This study represents one approach to documenting the short-term effects of training in behavioral pediatrics. These data suggest that (1) the extent of residents' knowledge of behavior is only moderately related to their organic knowledge, and that these two types of knowledge may become even more independent of one another with increased exposure to mandatory training in behavior; (2) instituting required training experiences in behavioral and developmental pediatrics increases behavioral knowledge but does not decrease residents' level of organic knowledge; and (3) Funded programs attract residents with greater behavioral knowledge who, during their training, maintain a higher level of knowledge than residents in programs not participating in an evaluation of behavioral pediatric training. These two groups (Funded and All Other residents) may represent the two extremes on a continuum of pediatric programs that have a greater or lesser commitment to training in behavioral pediatrics.

Acknowledgment. We are grateful for the interest and cooperation of the American Board of Pediatrics, who made it possible for us to obtain these data. We thank Mrs. Charlene Johnson for her help in all phases of the project and J. Richard Hebel, Ph.D., and James F. Gardner, S.C.M., for their expert assistance with data processing. We would also like to express our appreciation for the support of the W. T. Grant Foundation. Finally, we appreciate the time and effort expended by the residents and faculty of the pediatric programs which provided these data.

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Editor's Note. *At the annual meeting of the American and Canadian Academies of Child Psychiatry, held in October 1984 in Toronto, Dr. Klaus Minde conducted a symposium entitled "Behavioral Pediatrics—What Has It Achieved and Where Is It Going?" I was particularly impressed with the contribution made by a pediatric resident, Dr. Harriet MacMillan, from the Hospital for Sick Children in Toronto. I suggested to Dr. MacMillan that she might submit her talk for publication in this Journal, which happily she was willing to do. Her remarks give us a resident's perspective of behavioral pediatrics, and also some of her thoughts about child psychiatry. Hopefully, her comments will stimulate further opinion from our readership.*

Commentary

Behavioral Pediatrics: What Has It Achieved and Where Is It Going? A Resident's Perspective

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Behavioral pediatrics has been extensively discussed and reviewed in the literature in the past 10 years by pediatricians, psychiatrists, and psychologists. But where is it in the eyes of the house officers?

Friedman has noted that the term behavioral pediatrics has been in use since 1970.¹ When I ask my fellow senior pediatric residents in the program at the Hospital for Sick Children whether they feel that there should be training in behavioral pediatrics they uniformly answer yes. Yet, when I go on to ask them what is behavioral pediatrics and what does it involve, I receive many different answers as to what it is and how it should be taught.

Behavioral pediatrics can be confusing to residents—both as a term and as a topic. The jargon itself is difficult—one must distinguish between behavioral versus developmental versus psychiatric versus psychosocial. But time and energy can be spent on definition; often the actual teaching goes by the wayside. That brings me to one of the greatest needs of residents—pediatricians who are good role models.

Haggerty² and Jellinek³ have discussed this in the past. I feel, however, that we need *two* sets of role models. First, as residents we need general pediatricians who not only demonstrate a sound knowledge of biomedical facts but who at the time show a concern for and knowledge of psychosocial factors. Rothenberg has proposed that *all* pediatricians should be proficient in behavioral pediatrics. Such pediatricians need to be able to recognize and treat or refer children in need of mental health care.⁵ But they also need to be able to

deal with interpersonal family relationships and with the psychosocial aspects of *physical* disease. That is not to say that such pediatricians need be skilled in psychiatric diagnosis or treatment. For example, in our program we have frequent admissions of children with asthma. Often the medical history is taken in detail; the child is treated with a β_2 agonist and a theophylline preparation and is sent home. The resident does not delve into the psychosocial features surrounding the admission, and frequently these are not probed by the attending staff physician. In such a case one needs to know why the patient is back for his/her *n*th visit. Is there a problem with compliance? What is going on in the home? What is the impact of the illness on the family, and what are their coping skills and support resources? I don't think that one needs a behavioral specialist to manage such cases; this is the domain of the general pediatrician. Yet if the residents do not have good role models, they soon learn that such issues are not important.

Before this presentation, I approached both residents and general pediatricians and asked each group what they felt such a role model should be able to manage. Interestingly, their comments did not really differ from those put forth in the literature. Haggerty² and Anders and Niehaus⁶ have clearly laid out boundary areas for pediatricians and child psychiatrists. The people with whom I discussed the idea of boundaries agreed. General pediatricians do not want to know how to make the diagnosis of a psychotic disorder according to DSM III, nor do they want to know how to treat schizophrenia. Yet they do want to be able to deal with such issues as encopresis and enuresis; they do want to be able to recognize when a child needs psychiatric help.

Next, we need a second set of role models. I feel that

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as residents we need access to specialists in behavioral pediatrics who can function as resource personnel in the areas of teaching and research. These should be pediatricians who have done specific additional training in the field of behavioral pediatrics. Such physicians would act as consultants to the general pediatricians when a patient with a behavioral problem requires referral. Not only could residents benefit from spending time with such specialists, but community and other general pediatricians could gain expertise from contact with such professionals. The division head of behavioral pediatrics would work closely with the department head of psychiatry and would need to generate interest in clinical and basic research with the aid of psychologists and epidemiologists. Residents must then be made aware of the opportunities in such a division. In their study of behavioral and pediatric residency programs, Friedman, Phillips, and Parrish found that "scientific literature germane to behavioral pediatrics was virtually unknown to the vast majority of residents, and few were even aware of behavioral research findings emanating from their own departments."⁷ Investigative skills are not enough, however; such behavioral pediatricians must be good teachers. Residents need to be "turned on" to behavioral pediatrics. It doesn't matter how good a researcher a physician is; if he/she cannot teach, most residents will not learn.

I have outlined what I feel residents need from pediatric role models—two very distinct types of pediatrician. These two groups, however, need a leader, "a physician-in-chief" who is active in making behavioral pediatrics a priority. As Fischhoff, Wooley and Faigenbaum stated, "a positive administrative aura must be all pervasive for any program to continue over a long term."⁸ If the program director or physician-in-chief doesn't put emphasis on behavioral pediatrics, how can we expect residents to do so? Particularly in this day and age of economic constraints, behavioral pediatrics needs the physician-in-chief as an advocate.

Of the group of pediatric office patients studied by Goldberg et al.,⁵ 5% were reported to have an emotional, behavioral, or school problem, and Starfield has found that "up to 15% of pediatric visits are related to behavioral, educational, or social concerns."⁹

Yet, when I look at my own training and that of my peers—the focus has not been there, and our training is clearly deficient. I am now in my third year of pediatric training, and upon completion I will have done 6 months of neonatology, 4 months of cardiology, and only 2 months of outpatient training; 1 month of the latter was done as an elective. This I can tell you has not been by choice. My training is in accordance with that of my fellow residents. I have never been exposed to formal teaching in behavioral pediatrics.

Given that the manpower needs of neonatology and other specialties have restricted residents from participating in behavioral pediatrics, even then it is not a dead end! There is the huge potential area of behavioral medicine within neonatology and within other specialties. However, it is presently: (1) not taught, (2) not

given priority, and (3) we again do not have good role models. Fortunately, in my training center, in July of this year, a proposal was laid out for a program in behavioral pediatrics. Yet it will be some time before such a program becomes operational.

I have talked about what pediatric residents need from pediatrics, but what do they need from psychiatry? I think this is an important issue. Certainly psychiatrists should and can promote the development of this field. Pediatric residents, however, generally do not look upon child psychiatrists with high esteem. This has been commented on in the literature. Jellinek spoke of "the child psychiatrist's usually low status."¹⁰ Personally, as someone who will be entering the child psychiatry program in 1985, I can tell you that most residents and most faculty members do not show most child psychiatrists professional respect.

There are many explanations put forth for the low status of child psychiatrists. Williams¹⁰ has alluded to "differences in style" as a factor. Pediatricians are active and intervene directly, usually in a short space of time; they show a flexibility toward their patients, whereas psychiatrists often do not intervene directly, and treatment spans over a much longer time frame. Pediatricians also have a different role identification, as pointed out by Gardner.¹¹

Through residency, they see themselves as physicians involved with the serious illnesses of children: "life and death matters." Even though psychiatric emergencies exist, pediatric residents do not see child psychiatrists as functioning in the true "blood and guts" field of medicine. Little do we know as residents that once out in practice our role changes drastically. We then learn, and often too late, that general pediatrics very rarely involves life and death emergencies.

Given that such differences in style do exist between pediatrics and psychiatry, the questions arise: what can be done to alter the status of child psychiatry, and how can child psychiatry be made approachable by pediatricians with the ultimate aim of furthering behavioral pediatrics?

I'm not advocating a total overhaul of child psychiatry, but there are certain features which I think become essential if these physicians are to be effective contributors in the field of behavioral pediatrics. In my opinion, child psychiatrists need to have training in pediatrics; they need to understand normal and abnormal growth and development and have a basic understanding of childhood diseases. Dr. Joe Jacobs, a pediatrician at McMaster University, goes so far as to say that he feels one cannot be a good child psychiatrist without first being a good pediatrician.¹² I do not go to that extreme, but I do believe that child psychiatrists need to understand the fundamentals of pediatrics.

Let me give you an example. Patients with anorexia nervosa when admitted are often treated on the psychiatric ward. If it is a diagnostic and investigative admission, then certain laboratory and radiographic tests are often done to evaluate endocrine and cardiac function. When I was on adolescent medicine and visited the

ward, there was an anorectic patient just being readmitted because of poor compliance. Now the psychiatric resident had reentered *every* investigative test for this patient without a clear understanding of the initial reasons for the tests. In fact, probably 90% of these did not need to be repeated. Even a year spent in pediatrics would have given this resident some understanding of the biomedical facts of anorexia nervosa.

Psychiatrists need to be in greater visibility. Friedman¹³ commented recently that most child psychiatry departments are located in a "basement, attic or annex." Psychiatrists need to participate on the ward. Often because of the acute nature of inpatient pediatric medicine and because of the demands made upon pediatric residents, it is difficult for residents to "get away from the ward." Many pediatric residents at the Hospital for Sick Children have praised the practice of a psychiatrist who actually attends full rounds with the medical team weekly. The residents have found this stimulating and worthwhile. It is noteworthy that the pediatric attending physician is present at these rounds, and it also provides exposure for him/her to a child psychiatrist. Rivara and Wasserman¹⁴ recently published data which apparently showed that daily rounds with a staff psychiatrist did not make the first year residents more aware of the psychosocial problems of their patients. However, this was concluded from assessment of the progress notes which I do not feel is an adequate measure of such a finding.

I also believe that child psychiatrists need to be flexible and sensitive to the needs of the pediatric residents. Presently frustration is often created because residents are not having their needs met by psychiatrists. They must in fact meet the needs of the residents within the activities with which the residents are involved. A problem-solving approach is needed rather than a didactic session. Let's learn about death and dying and the family's reaction to critical care while on the wards and save the discussion of autism for the clinic. Timing is so important. Another example: I was recently a senior resident on a general pediatric ward where we had weekly joint rounds with a psychiatry resident and a psychiatrist. Just prior to one session a child on the floor had a cardiac arrest, and we all worked frantically to resuscitate and stabilize the child. On the way to the session, we met the psychiatrists, who were returning from lunch. My junior residents were all frustrated at having to attend the session. That would have been a perfect time to discuss their feelings about the child who just arrested, the family, and themselves. At that time, any discussion of any other issue seemed irrelevant.

What about the liaison between pediatricians and child psychiatrists? For communication, there needs to be a common language. As much as we as residents need to expect child psychiatrists to understand the basic language of pediatrics, we need to expect pediatricians to understand the basic concepts of psychiatry. A certain basic knowledge and familiarity needs to be demanded of both groups. When I was an intern 2

years ago, I presented a case of anorexia nervosa at rounds and was quite taken aback when the psychiatrist asked me what I meant by Tanner staging of sexual development. Yet pediatricians also need to update their knowledge of psychiatry. Earlier this month we had an adolescent boy with a 4-year history of fatigue admitted for investigation. On rounds I suggested that we do a mental status examination. My attending pediatric staff physician had no idea what such an examination entailed. I think that when certain basic principles are acquired by both groups, then an effective joint effort toward establishing behavioral pediatrics will be more realistic.

A second necessity for cooperation between the two fields is that pediatricians must interact professionally with child psychiatrists. In much the same way that I indicated that child psychiatrists need to come to the ward and to the pediatricians, so do the pediatricians need to give child psychiatrists the opportunity to participate and to be involved. Eisenberg has pointed out that child psychiatrists are "not often called upon to offer what they can."¹⁵ Certainly there is an overwhelming tendency to do a "full medical workup" on patients who come under the realm of behavioral problems and then, much later down the road, involve the psychiatrists, if at all. Pediatricians need to involve their fellow child psychiatrists clinically much earlier in patient management.

I have outlined ideas as to how pediatricians and child psychiatrists can foster behavioral pediatrics and make it go places. What about the pediatric residents—what can and should we do to help ourselves in this field?

First, we need to recognize its importance. The foundations for that must be laid in medical school. Then we must ask for teaching in behavioral pediatrics—that means we need to be willing to discuss cases, to read and research the topic, and to be challenged. Just as any pediatric resident is challenged about the investigation of a first detected heart murmur, so must we be challenged about such issues as temper tantrums and encopresis. We need to request and agree to interviewing sessions. Interviewing and family counseling skills are often sadly neglected.

As residents we need to demand time, time within the residency program for behavioral pediatrics. When given such time, however, it cannot be abused as a "recreation period." If that is happening, it is our responsibility to let the powers that be know, because it means that adequate teaching is not happening.

There is a Latin expression "*quae nocent docent*"—"the things that hurt often teach." Unfortunately, that's often true, which brings me to the fellowship examinations. This is sometimes the only force which brings residents to have their interviewing assessed and to critically look at certain areas of pediatrics. The examination must then make this emphasis so that the importance of behavioral pediatrics is again underscored.

As a pediatric resident who looks forward to becoming

ing a child psychiatrist, I have outlined the path that I hope behavioral pediatrics will follow, with positive changes being made by pediatricians, child psychiatrists, and pediatric residents. The methods used to teach behavioral pediatrics and the evaluation processes

developed to assess programs are already being critically looked at in the literature. With further research and teaching, we can build the bridges needed to provide the best possible all-encompassing health care for children.

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Announcement

Fellowship in Behavioral Pediatrics—A two year fellowship is available in Behavioral Pediatrics at the University of Maryland School of Medicine beginning July 1, 1985. Applicants must be board eligible. For more information please write to:

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