# Society of Pediatric Psychology Task Force Report: Recommendations for the Training of Pediatric Psychologists

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**Objective** To provide an overview of the types of training experiences considered most important to the development of competency in pediatric psychology. **Methods** This is the work of a task force commissioned by the Society of Pediatric Psychology, Division 54 of the American Psychological Association. **Results** Twelve topic areas, adapted from Roberts et al. (1998), deemed important for obtaining knowledge and expertise in pediatric psychology, were identified. These topics include life span developmental psychology; life span developmental psychopathology; child, adolescent, and family assessment; intervention strategies; research methods and systems evaluation; professional, ethical, and legal issues pertaining to children, adolescents, and families; issues of diversity; the role of multiple disciplines in service-delivering systems; prevention, family support, and health promotion; social issues affecting children, adolescents, and families; consultant and liaison roles; and disease process and medical management. Each area is briefly described and recommendations for obtaining training in these areas are offered. **Conclusions** The Society of Pediatric Psychology offers this document as a comprehensive review of the ideal types of training experiences most important to developing competencies in pediatric psychology. These recommendations can be used by graduate students and graduate programs in shaping a training plan for students interested in pediatric psychology training.

**Key words** pediatric psychologist training; psychologist training.

Recent reports have articulated the didactic and clinical experiences believed necessary for psychology trainees preparing to work with children, adolescents, and families. Roberts et al. (1998) published recommendations from the National Institute of Mental Health (NIMH) work group established in 1992 to define clinical training guidelines for services to children and adolescents. The 11 areas of training reviewed as essential to specialty training are (1) life span developmental psychology; (2) life span developmental psychopathology; (3) child, adolescent, and family assessment methods; (4) intervention strategies; (5) research methods and systems evaluation; (6) professional, ethical, and legal issues pertaining to children, adolescents, and families; (7) issues of diversity; (8) the role of multiple disciplines in service delivery systems; (9) prevention, family support, and health promotion; (10) social issues affecting children, adolescents, and families; and (11) specialized applied experiences (Roberts et al., 1998).

More recently, the American Psychological Association (APA) Practice Directorate Task Force on Professional Child and Adolescent Psychology (La Greca & Hughes, 1999) identified five critical competencies for clinical child psychologists that overlap with the training recommendations of the NIMH group (Roberts et al., 1998): (1) multicultural competencies; (2) delivery and evaluation of comprehensive and coordinated systems of care; (3) collaborative and interprofessional skills; (4) empirically sup-

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ported assessment and treatments for promoting behavioral change in children, families, and other systems; and (5) entrepreneurial and supervisory skills (La Greca & Hughes, 1999). La Greca and Hughes note that three broad themes from the NIMH and APA task forces include a developmental framework, exposure to interdisciplinary and comprehensive models of care, and the need for a multicultural perspective.

With regard to particular child subspecialties, La Greca and Hughes (1999) recommend developing guidelines to include a series of core competencies that can be adapted to each child subspecialty. The training guidelines for pediatric psychology presented in this report are articulated with this recommendation in mind. Pediatric psychology is a child subspecialty defined as "an interdisciplinary field addressing physical, cognitive, social, and emotional functioning and development as related to health and illness issues in children, adolescents, and families" (APA, 1999). Pediatric psychologists must be prepared to provide general psychological services to children, adolescents, and families but, in addition, need to receive training regarding health and illness and other areas related to pediatric populations.

The Society of Pediatric Psychology (SPP), Division 54 of the APA, is the primary professional organization representing the interests of pediatric psychology. The last SPP survey on training in pediatric psychology was published in 1988 (La Greca, Stone, Drotar, & Maddux, 1988). However, there are no recent guidelines regarding training experiences deemed necessary or sufficient for students interested in developing expertise in pediatric psychology. Therefore, at the midwinter meeting of the SPP Executive Committee in 1999, the SPP board requested that a task force be formed to update training recommendations for pediatric psychologists. Anthony Spirito, PhD, was appointed chair of the task force, and its volunteer members included Ronald Brown, Eugene D'Angelo, Alan Delameter, James Rodrigue, and Lawrence Siegel. The task force prepared several drafts of the document in the fall and winter of 1999/2000 and received valuable input from a number of other members of SPP (see Acknowledgments for a list of contributors). Members of the task force, as well as several SPP members and student members (see Acknowledgments for members), helped finalize the document at a meeting held at Brown University in July 2000. The report was completed in the fall of 2000.

This report is a summary of the task force report. It is designed to provide an overview of the types of training experiences considered important to the development of competencies in pediatric psychology. Although both research and clinical skills are reviewed, there is a particular emphasis on the skills necessary to provide professional psychological services within primary care pediatric settings and tertiary health science centers that serve children and adolescents with health-related problems and chronic disease.

This task force report is prepared with the needs of several groups in mind. First, it is a training document appropriate for students interested in a career in pediatric psychology. We anticipate that students will use this document as a guide to identify experiences and courses that will best prepare them for a productive career in pediatric psychology. Second, program directors at the graduate, predoctoral, and postdoctoral fellowship levels may use these guidelines as part of their own self-study as they prepare, refine, and develop new training experiences and courses for students interested in careers in pediatric psychology. We recognize that training programs, particularly graduate programs, are bound by many APA accreditation criteria and state licensing requirements that unfortunately leave little room for additional courses and practica. While there are no practical solutions to this dilemma, we believe that if a trainee is committed to working in pediatric psychology, focusing on the core child competencies with additional work in pediatric psychology as outlined in this document will provide the best pathway to this career option. Finally, we also anticipate that these guidelines will assist other professionals, such as pediatricians and health care policy makers, to understand the type of training experiences that an individual must acquire prior to identifying oneself as a pediatric psychologist and to be able to provide optimal psychosocial services for children and families seen in general and specialty health care settings.

## Underlying Principles of Training

The first premise of this report is that clinical child psychology is the foundation for developing skills and expertise in pediatric psychology. This premise is open to debate. One could argue that pediatric psychology should be more closely tied to health psychology and public health in the future and that the training recommendations presented here should reflect these ties. The consensus of the task force was that clinical child training remains a key underpinning of the field, given the frequent requests for pediatric psychologists to evaluate and manage behavioral and emotional difficulties of children with health-related problems. Nonetheless, pediatric psychologists also share many aspects of their training and professional identity with health psychologists. Many of the recommendations reflect this close tie to health psychology (e.g.,

research methods and systems of evaluation, social issues affecting children, adolescents, and families). For greater detail regarding the training necessary in the specialty area of health psychology, the reader is referred to the document on the health psychology specialty prepared for the Committee for the Recognition of Specialty Providers in Professional Psychology (CRSPPP) recognition and approved by the APA Council of Representatives.

The training domains described in this document correspond to those selected by the NIMH work group as training necessary to work with children (Roberts et al., 1998), with the exception of "consultant and liaison roles" and "disease process and medical management," which are specific to this document. The reader is referred to the model by Roberts et al. (1998) that carefully delineates the implementation goals for child clinical psychology training. A document on clinical child psychology as a specialty prepared for the CRSPPP and approved by the Council of Representatives of the APA (Section on Clinical Child Psychology, 1998) is also useful. These documents, which may be obtained from the Education Directorate of the APA, contain details regarding training experiences necessary for clinical child psychologists. The training opportunities described in this document are examples of specific experiences recommended for students in pediatric psychology. These are not to be construed as mandatory experiences necessary for competence in pediatric psychology because similar training experiences specific to the training settings in pediatric psychology may serve the same training purpose. Nonetheless, trainees are expected to have some exposure to all areas.

## Breadth and Depth of Training

This document emphasizes the range of experiences important in the training of pediatric psychologists. Different opportunities available to implement these training experiences are presented at the graduate school, internship, and postdoctoral levels. While some individuals may enter the field of pediatric psychology in graduate school training programs, others may establish background skills during internship or postdoctoral training. Regardless of the level of entry into the field, the trainee should obtain the necessary background experiences to develop the basic foundation to function successfully in the training setting. At graduate school, the focus of training is typically on the acquisition of general child clinical skills. Where possible, the student may obtain additional experiences in pediatric psychology content through course work, directed readings, practicum experiences, student membership in relevant organizations, and research exposure. The predoctoral internship typically offers intensive experience in health care settings. Internships are available that provide programmatic focus in pediatric psychology. Development of expertise within specialized areas of pediatric psychology practice is expected at the postdoctoral level.

We recognize that this document represents an ideal course of study. The breadth of training in pediatric psychology described here will not be easily accomplished, nor is it mandatory. Psychologists in training will not participate in all of these experiences across a typical graduate school, predoctoral, and postdoctoral training sequence. Therefore, it is especially important that trainees adhere to the *Ethical Principles of Psychologists and Code of Conduct* (APA, 1992) pertaining to practicing only within psychologists' area of competence.

## Scope of Practice

Pediatric psychology practice includes psychological applications to developmental issues in primary care, screening of psychopathology in primary care settings, chronic disease, acute illness, health promotion, and disease prevention, as well as the development of policy in psychosocial aspects of pediatric health care. Opportunities to practice pediatric psychology exist in tertiary care centers, ambulatory care clinics, community-based health clinics, primary care settings, schools, and through telehealth. Given the assumption that the careers of pediatric psychologists will involve multiple responsibilities and tasks, we emphasize training in a variety of skills. Training should go beyond direct service to include research, consultation, program evaluation, and program development, at the local, state, private, and national levels. There will be new areas of practice in the future, such as consultation regarding ethical issues that arise with biomedical advances (e.g., genetic testing), advocacy for children within the health care system, supervision of clinical programs staffed by master's-level providers, paraprofessionals, and other treatment providers, as well as program development and public health policy, including prevention and intervention programs. The training opportunities described in this document are sufficiently broad to provide pediatric psychology students the experiences necessary to participate in these new areas.

## Training Paths

To develop an area of expertise, we advocate training in one or two specific areas of interest, despite the emphasis on training in multiple skills. For example, primary career

areas might include chronic illness, public policy, epidemiology, program evaluation, expertise in multicultural assessment and treatment, health disparities and health utilization, and preventive pediatric health psychology. The priority assigned to each training area will vary for each trainee according to interests. Exposure to at least two areas of concentration is recommended during the predoctoral fellowship with an opportunity for specialization in one of these areas. Students should be encouraged to consider developing a specialty area, given the breadth of knowledge and training necessary in clinical child and pediatric psychology. The postdoctoral fellowship especially should provide an opportunity for specialization and development of a specific expertise.

## Primary Care

There is an emphasis on the role of pediatric psychologists in pediatric primary care settings throughout this document. Although pediatric psychology practice in primary care has been advocated for many years (e.g., Routh, Schroeder, & Koocher, 1983), expansion of our efforts in primary care is strongly recommended. Strosahl (1998) has delineated key areas of mental health practice in primary care that apply to pediatric psychology, including the improvement of clinical outcome via enhanced detection, treatment, and follow-up; managing children and adolescents and their families who are at-risk; educating primary care providers regarding the use of psychosocial treatments as well as psychotropic medication; managing "high utilizers" of health care services for the purpose of reducing inappropriate medical utilization and promoting better outcomes; and identifying and referring patients who require specialized mental health treatment. In pediatrics, practice in primary care settings also allows psychologists greater opportunities for the prevention of behavioral and health problems, including obesity and injuries. This model of integrating mental health care and medical health care requires a new training emphasis. The APA has delineated competencies pertaining to education and training guidelines for psychologists to function in primary care settings (APA, 1998), and a committee soon will develop a curriculum for training psychologists to practice in primary care.

## Interdisciplinary Training

Pediatric psychologists should have opportunities to work in interdisciplinary settings with professionals and trainees from other health professions including nursing, social work, occupational and physical therapy, and pediatrics. Joint training opportunities with pediatricians are particularly encouraged. Knowledgeable interactions with pediatricians and other providers of child health services will result from increased interdisciplinary training. To prepare for such interdisciplinary training, increased knowledge of the pediatric profession is advocated, such as understanding the pediatric literature by reading scholarly journals (e.g., *Journal of Pediatrics, Pediatrics, Journal of Developmental and Behavioral Pediatrics*), becoming familiar with pediatric professional organizations (e.g., American Academy of Pediatrics [AAP], Society of Developmental and Behavioral Pediatrics), and becoming aware of the advocacy efforts of the AAP and its committees through which policy is promulgated and advanced. The student also should have a vision of the role psychologists may play in informing pediatricians on issues of mutual concern, both informally and formally through participation on AAP committees. Most important, this document emphasizes the importance of systematic training in pediatric diseases and medical management. Greater emphasis on the biological component of the biopsychosocial model to pediatric psychology training will enable pediatric psychologists to develop a greater understanding of comprehensive pediatric care.

Interdisciplinary training also is important as a means of developing skills for forging new partnerships in the health care system, including the training of pediatric residents and other health care professionals, contributing to committees that develop practice guidelines for pediatricians (e.g., Psychosocial Committee of the AAP, Committee on Quality Assurance), and, finally, enhancing pediatricians' understanding of the roles and skills of pediatric psychologists in patient care. Interdisciplinary training also has the potential to enhance employment opportunities. Interdisciplinary training programs are rare, although some have been described in the literature (e.g., Patterson, Dischoff, & McIntosh-Koontz, 1998). Increased interest in the development of new training programs should expand opportunities to work with professionals and trainees from other health care disciplines besides pediatrics, such as speech pathology, audiology, and occupational and physical therapy.

## Mentors

The role of mentors during predoctoral and postdoctoral training cannot be overemphasized. Trainees frequently follow the model often described as "see one, do one, and teach one." For example, on consultation services this sequence consists of observing faculty perform a consultation, participating in a consultation with the supervisor, and, finally, completing a supervised consultation. This

teaching sequence is advocated for training in new assessment and intervention strategies, as well as supervisory skills. Formal mentoring programs have been established at many universities (e.g., Medical College of Virginia) to assist junior faculty to manage many of the complexities of academic life, including clinical, research, and service requirements. In addition, the National Institutes of Health has recognized the importance of mentoring in all stages of psychologists' research careers and has established formal grant mechanisms by which to obtain research mentoring or provide mentoring at various stages of one's career.

## Domains of Training

In each following section, the first paragraphs provide an overview of the content of the topic area and its importance in pediatric psychology training. The final paragraphs describe ways in which the knowledge base may be obtained. For clinical topics, ways in which to obtain clinical training experiences are also described.

### *Life Span Developmental Psychology*

Life span development includes the knowledge of typical development and behavior in infants, preschool-age children, school-age children, adolescents, adults, and elderly persons within their ecological (family, school, community, and cultural) contexts. Life span development is an important foundation for the practice of child clinical and pediatric psychology. Developmental issues specific to the practice of pediatric psychology include the effects of the disease process and prescribed medical regimens on emotional, social, motor, and behavioral development, as well as physiologic maturation.

Trainees should have exposure to directed readings, seminars, videotapes, and lectures that highlight the effects of health-related issues on developmental processes. Opportunities to observe and conduct supervised activities with children at differing levels of development in health care settings should be provided. Training experiences should include supervised clinical cases across age groups in which developmental issues unique to specific areas of specialization are exemplified. For example, in chronic illness, typical developmental processes such as peer relations and autonomy from parents may affect adherence to medical regimens.

### *Life Span Developmental Psychopathology*

Pediatric psychologists are trained in models of developmental psychopathology that emphasize trajectories of adaptation and maladaptation under conditions of risk. Additionally, awareness of developmental psychopathology is beneficial to the pediatric psychologist who assists healthy children with behavioral/emotional problems who undergo diagnostic medical procedures (e.g., immunizations, computerized axial tomography scans), invasive treatments, and surgical procedures. Knowledge of psychopathology also is necessary to make a differential diagnosis between psychological conditions and health-related symptoms. Through training in life span developmental psychopathology, pediatric psychologists may also identify children at risk for problems of adaptation in primary and other health care settings, thereby promoting positive adaptation and emotional well-being.

Students should have exposure to directed readings, seminars, videotapes, and lectures that highlight the effects of psychopathology on children with acute and chronic illness, as well as general health-related issues. Training programs should include opportunities to observe and conduct supervised clinical activities with children and adolescents who have different types of psychopathology as they present in health care settings. Trainees should have supervised experience in differentiating emotional distress within acceptable limits for children with acute and chronic medical conditions versus psychopathology independent of the health condition.

### *Child, Adolescent, and Family Assessment*

Pediatric psychologists must be knowledgeable in the use of health-related assessments currently available, as well as measures that become available as this literature develops. Examples of such health-related topic areas include health and wellness such as health beliefs, health disparities, adherence, quality of life, and coping; special topic areas in pediatric psychology, such as pediatric pain; and behavioral health assessments including substance use, weight control, and exercise. Finally, assessments for chronically ill children should include the identification of behavioral factors that exacerbate chronic illness as well as coping and adaptation to chronic illness. The student must be able to apply these assessment systems to specific pediatric conditions and populations (e.g., observation of parent–child interaction during medical procedures).

Pediatric psychologists should be well versed in family assessment of general family functioning, given the impact of family functioning on health-related conditions. Pediatric psychologists should have a working knowledge of adaptive and maladaptive functioning as it affects children's overall emotional and behavioral functioning and health-related conditions. For example, it is important to identify how family strengths and vulnerabilities may affect adaptation and treatment outcomes.

When pediatric psychologists are evaluating children

and adolescents with chronic health conditions, they must consider emotional and behavioral symptoms in the context of illness. When available, pediatric psychologists should use assessment tools with norms appropriate to children with chronic illness to differentiate the symptoms associated with disease and treatment versus those symptoms secondary to poor psychological adjustment (for a review of specific instruments available for children with chronic illness, see Rodrigue, Geffken, & Streisand, 2000). Pediatric psychologists must be well versed in measures of coping and adaptation (e.g., DiGirolamo, Quittner, & Stevens, 1997), in addition to assessment instruments that assess psychopathology. Expertise in screening instruments is a particularly important skill for pediatric psychologists working in a primary care setting. Similarly, it is necessary to assess health promotion, health-risk behaviors, health disparities, and access to care in a developmentally appropriate fashion for prevention in primary care populations.

Students should receive seminars, lectures, and course work on how individual and family processes affect child adaptation to health care and illness, as well as increase their familiarity with the valid tools that assess individual and family functioning in health-related contexts. These same didactics should be utilized to increase knowledge of screening and to learn how best to assess coping, adaptation, and behavioral health. The student should consider gaining familiarity with the *Diagnostic and Statistical Manual-Primary Care Version* (Wolraich, Felice, & Drotar, 1996), as it provides diagnostic nomenclature for conditions within the primary care setting. Supervised training experiences should include application of standardized assessment instruments to specific pediatric populations in various settings, such as clinics and hospitals; selection of instruments, both generic and disease-specific, for screening; and thorough assessment of coping, adaptation, and behavioral health in both primary and tertiary health care settings. Students should receive supervised experience in family interview techniques that identify family strengths and problems, as well as problem-solving abilities to assist the child in coping with a health-related stressor. Additionally, there should be supervised experience in the preparation and writing of assessment reports, providing brief yet cogent case presentations, and communicating reliable feedback to pediatricians.

### Intervention Strategies

Pediatric psychologists should receive training in theory-driven, empirically supported treatments for a variety of childhood problems. Because most of the empirically supported treatments to date are behavioral or cognitive-behavioral, adequate training in individual and family-based behavioral intervention strategies should be provided at the graduate level. However, it is equally important for trainees to have exposure to other treatment approaches, such as family therapy, that may have less demonstrated empirical support with chronically ill pediatric populations now but are promising for the future because of their established efficacy with other populations. Trainees should be encouraged to contribute to the treatment literature on promising but, as yet, unsupported treatments.

Pediatric psychologists need to understand a child's disease status and implement psychological interventions within the context of the child's medical condition and treatment. For example, if a child with congenital heart disease is referred for sleep-onset difficulties, implementing ignoring techniques that may be appropriate for healthy toddlers may not be appropriate because prolonged crying episodes may be contraindicated due to the underlying medical condition. Alternatively, specific interventions developed for nonmedical problems (e.g., parent training for child disruptive behavior) must be modified when implemented within a medical system (e.g., hospital) or when a psychological condition is comorbid with a medical condition (e.g., cancer). Similarly, pediatric psychologists need to have a basic working knowledge of pediatric psychopharmacology that includes an understanding of the potential differences in efficacy and adverse effects of specific psychotropic agents administered to children. Finally, conducting psychotherapy with children and adolescents in medical settings presents unique challenges (e.g., maintaining therapy confidentiality while collaborating with medical personnel who might be treating the child for medical issues) that require supervised experience during training.

Students should obtain course work and directed readings in empirically supported treatments relevant to pediatric psychology. For example, the empirically supported treatment series in the *Journal of Pediatric Psychology* reviews databased interventions for severe feeding problems (Kerwin, 1999), enuresis (Mellon & McGrath, 2000), encopresis (McGrath, Mellon, & Murphy, 2000), pain conditions such as recurrent abdominal pain (Janicke & Finney, 1999), disease-related pain (Walco, Sterling, Conte, & Engel, 1999), headaches (Holden, Deichmann, & Levy, 1999), procedure-related pain (Powers, 1999), obesity (Jelalian & Saalens, 1999), sleep (Mindell, 1999), regimen adherence (Lemanek, Kamps, & Chung, 2001), and other disease-related symptoms and comorbidities such as those in asthma, diabetes, and cancer (McQuaid & Nassau, 1999). Trainees should have the opportunity to observe clinical supervisors (in vivo or via videotape) as

they conduct interventions for children with medical conditions and view video, electronic, and, when available, virtual reality–based pediatric psychology interactive training materials developed by experts in the field. Course work, seminars, lectures, and readings on basic clinical psychopharmacology should also be provided.

Training in interventions unique to the pediatric setting can be obtained via practica, internships, and fellowships. These interventions might include, for example, helping children cope with stressful medical or surgical procedures or to prepare for these procedures; management of pain and disease-related symptoms; adherence to medical regimens as part of the treatment and recovery process; stress and anxiety management, including anxiety symptoms secondary to receiving medical care; medical crisis counseling, such as assisting in adaptation to a recent diagnosis of a medical condition; family therapy to assist families in managing the impact of illness on child and family lifestyle; specific applications of biofeedback for certain biobehavioral conditions, such as imperforate anus, dysfunctional voiding, and headaches; bereavement counseling on issues related to death of a patient, death of a patient's family member, making end-of-life decisions by both children and their family members; assisting the children in families with a terminally ill adult; and providing psychological support to health care providers who take care of children and their families in the terminal stages of illness.

### *Research Methods and Systems Evaluation*

In all aspects of training and professional activities, pediatric psychologists strive to maintain an empirical orientation. Pediatric psychologists conduct assessment, treatment, epidemiological, and prevention research. Training in the processes necessary to conduct clinical research and treatment outcome studies is particularly important. Between-groups design studies frequently require multisite collaborations, as the low incidence of certain diseases precludes sufficiently large sample sizes to adequately test empirical questions at a single site. Experimentally controlled single-subject research designs, such as reversal and multiple baseline designs, allow empirically valid research at a single site with a small number of participants. Training in qualitative research methods also is useful. Applying this research knowledge base in the review of manuscripts submitted for publication is another important component of training. Pediatric psychologists need to know how cultural diversity and developmental issues affect research outcomes and should design studies accordingly.

Given the interdisciplinary nature of the research conducted by pediatric psychologists, they need to be aware of advances in medical care as these technologies relate to changes in pediatric psychology practice. Pediatric psychologists also should gain familiarity with biomedical research concepts and terminology, as well as medical cost offset issues associated with access to care and health disparities.

Students should receive course work and seminars in clinical trials, experimental design, and advanced statistics. Course work and seminars should be conducted so that students gain knowledge of health-related assessments including health outcome measures, measures of disease severity, quality of life, medical cost offset, and other indicators of functional status. Additionally, course work and seminars should provide information on health care service assessment, including patient and parent satisfaction, perception of treatment, access to care, health disparities, and referral source satisfaction. Seminars on program evaluation are important so that the student can assess quality improvements of hospital-based services for children, as well as health-services research, which affects the delivery of care at a population level. Trainees should attend research seminars and lectures, receive exposure to commonly used biomedical research methods such as clinical trials, and observe faculty collaborating on interdisciplinary research projects that involve the careful coordination of other disciplines, such as pediatric subspecialties.

Trainees should have the opportunity to conduct clinical research that includes analogue, observational, cross-sectional, prospective longitudinal designs and retrospective designs, as well as controlled treatment outcome research. There also should be opportunities for students to design qualitative research and single-subject experimental methods that may be applied to low-incidence diseases. Students should be aware of the most recent ethical and regulatory guidelines as they apply to clinical research. They should complete training in the treatment of human subjects and have experience with writing protocols and consent/assessment documents for hospital and university institutional review boards.

Pediatric psychology training programs might offer a writing group or seminar designed to facilitate preparing research projects for presentation at national meetings and publication in refereed journals. Trainees at all levels should be provided with opportunities to prepare grant applications in pediatric psychology that range from student awards such as dissertation grants, hospital or university internal grants, local or national foundation grants, and federal grant proposals. Students should have sequentially supervised experience from graduate school

**Table I.** Sample Topics Specific to Pediatric Psychology in Each Domain of Training

| Domains of Training | Training Topics |
|---|---|
| Life span developmental psychology | Effects of disease process and medical regimen on emotional, social, and behavioral development |
| Life span developmental psychopathology | Differentiate emotional distress within normal limits for children with acute and chronic medical conditions |
| Child, adolescent, and family assessment | Experience with the assessment of health-related concerns such as health promotion, health risk, health outcome, and quality of life |
| Intervention strategies | Exposure to and experience with empirically supported interventions specifically applicable in pediatric psychology and delivered in health care settings |
| Research methods and systems evaluations | Exposure to research design issues especially pertinent to pediatric psychology such as health services research and clinical trials |
| Professional, ethical, and legal issues | Knowledge and experience with issues such as health care delivery, practice of psychology in medical settings, and rights of caregivers vs. children when making decisions regarding medical care |
| Diversity | Experience with patients from diverse ethnic and cultural backgrounds, as well as sexual orientations, in health care settings and understanding of nonmainstream health practices influenced by a family's cultural or religious beliefs |
| Role of multiple disciplines in service delivery systems | Experience on multidisciplinary teams delivering health care services |
| Prevention, family support, and health promotion | Understanding the principles of behavior change as they relate to healthy development, health-risk behavior, and prevention of disease in adulthood |
| Social issues affecting children, adolescents, and families | Exposure to and experience with advocacy in pediatric health care including social issues that affect health care delivery |
| Consultation and liaison roles | Exposure to different consultation-liaison models and supervised experience providing consultation in health care settings |
| Disease process and medical management | A basic understanding of various diseases and their medical management |

through postdoctoral fellowship training in the review of manuscripts related to pediatric psychiatry. This experience should enable students to develop the skills necessary to adequately participate in the review process of manuscripts and grant applications in pediatric psychology.

## Professional, Ethical, and Legal Issues Pertaining to Children, Adolescents, and Families

Pediatric psychologists need to be aware of professional, ethical, and legal issues pertinent to children and adolescents with specific physical, emotional, and learning challenges and to those with chronic illnesses, their families, and the health care system. For example, it is important to understand the rights of caregivers and children in making decisions regarding medical care. Pediatric psychologists need to know the complex issues involved in serving the best interests of children and at the same time attend to the needs of families in a variety of situations (e.g., end-stage care for terminal illness, use of sibling donors). Similarly, when consulting with other health care professionals and providers who refer patients and families to pediatric psychologists, special ethical issues may arise regarding situations of privileged communication, definition of the primary client (e.g., referring physician, child, caregiver, or family member), and delineation of the respective roles and boundaries of patient care among the providers.

Ethical and legal issues particularly important to pediatric psychologists also encompass health care delivery issues that include changes in the delivery of care (e.g., telehealth, managed care), public policy, access to care, and health disparities. Knowledge of the assets and liabilities involved in the use of technology in the delivery of health care information and treatment will become increasingly important for pediatric psychologists.

Pediatric psychologists also need to be aware of professional issues related to the training and practice of psychology in medical settings at the state, provincial, and national level. For example, in some hospitals, psychologists are appointed to the full-time staff and may practice independently, whereas in other health science centers, they are members of the affiliate or scientific staffs. Psychologists may be organized by functional units (e.g., psychology or developmental pediatrics, divisions within pediatrics) or by the primary discipline (e.g., mental health, psychiatry, or psychology).

Appropriate communication in health care settings, including adequate documentation in medical records, is an important professional skill. Many ethical and legal issues arise in the communication of information to the patient, family members, and health care providers that need to be addressed during training.

Training programs for pediatric psychologists should offer seminars, lectures, and directed readings on the ethical and legal issues specific to pediatric psychology, such as those associated with the emerging fields of telehealth and genetic testing for disease markers. Students should attend medical rounds that focus on ethical issues related to medical practice and hospital policies and receive presentations from hospital risk management teams that describe their roles and functions. Seminars, lectures, and directed readings should be provided on the business of psychology, managed care and insurance companies, confidentiality issues associated with obtaining third party reimbursement, and providing justification for use of a particular therapeutic approach and disposition that considers the best interests of patients and their insurance coverage. Additionally, training programs should provide students with supervised interaction with hospital risk management staff and their procedures.

Supervision of trainees should include discussion of caregiver and child rights and privileges of significant concern. Students should have the opportunity to observe supervisors providing clinical data and feedback to other health care professionals. Additionally, there should be supervised opportunities for the student to provide information to other health care professionals in team meetings and to prepare consultation reports and medical chart notes. Students should have supervised exposure in establishing the limits of confidentiality unique to health care settings and applying policies and regulations in a local health care setting.

### *Issues of Diversity*

Pediatric psychologists need to be aware of the cultural and ethnic context in which medical and psychological services are delivered to children and families. Pediatric psychology training should enhance clinicians' sensitivity to ethnic, cultural, and religious factors that affect health beliefs and medical treatment, as well as family, health care, and professional relationships. In addition, pediatric psychologists should incorporate factors related to patients' cultural backgrounds and religious beliefs into intervention programs that assist patients and families to cope with stressful medical situations that include terminal illness. Pediatric psychologists need to be aware of the problem of access to health care in certain minority and ethnic groups. Also important is an understanding of the nonmainstream health practices influenced by a family's cultural or religious beliefs, the association between spirituality and health, and how cultural beliefs affect recommendations to seek and comply with medical care.

Enhanced understanding of issues pertaining to gender is also essential in the training and practice of pediatric psychology. The epidemiological health profiles of women and men share some common ground, but many important differences have implications for research and practice. For instance, while we can expect some health conditions (e.g., cerebrovascular disease, diabetes) to result in death in women at a higher rate than in men, mortality rates associated with unintentional and intentional injury as well as liver disease are considerably lower for women than for men. Moreover, the morbidity associated with many chronic health conditions (e.g., arthritis, hypertension, urinary disease, chronic fatigue syndrome) is higher for women. These gender differences in adult health outcomes have important ramifications for how pediatric psychologists approach health promotion and the modification of health-compromising behaviors and medical utilization patterns of boys and girls during childhood and adolescence.

It is important for pediatric psychologists to be sensitive to issues related to sexual orientation in the families with whom they work. These issues become particularly important in work with adolescent clients, as confusion and distress with sexual identity can occur during this developmental period. In addition to their own awareness of diversity issues in the context of providing services to children and their families, pediatric psychologists often need to assist other pediatric health care providers in addressing issues of diversity in their patient care. Health care providers often fail to address these issues due to a lack of information as to how these issues affect health and illness or because of their own discomfort.

Training programs for pediatric psychologists should offer formal course work and readings on diversity that include training about prejudice, cultural and religious beliefs relevant to health and illness, and issues of sexual orientation and the potential impact of these issues on adjusting and coping with health-related problems. The growing literature on the effects of religious beliefs on mental and physical health should be presented in courses or seminars and be incorporated as a part of the clinical supervision experience. Students should gain an understanding of community resources outside of the health care system, such as religious organizations, ethnic com-

munity centers, and the use of language translators that may facilitate or impede medical treatment with culturally and ethnically diverse client populations. Training activities should include supervised clinical experience with patients of diverse ethnic and cultural backgrounds and different sexual orientations in a variety of health care settings. Students should also conduct evaluations in health care settings with the assistance of an interpreter when providing services for non-English-speaking children and families.

### *The Role of Multiple Disciplines in Service Delivery Systems*

Children and adolescents served by health care systems often require evaluation by multiple disciplines. It is important for pediatric psychologists to understand the roles and hierarchy between the different disciplines and service systems in the delivery of health care. Additionally, it is necessary to have an understanding of the role of primary care physicians and their relationship to subspecialists, especially pediatric psychologists, in the care of children's health problems. For example, pediatric psychologists often function as team members but at times act as team leaders, with physicians consulting to them. The pediatric psychologist must have effective communication skills to function within health care environments.

Pediatric psychology trainees should be exposed to seminars, lectures, and readings on the roles of different disciplines in health care as well as to various systems and settings, disciplines, and multidisciplinary teams. Trainees might learn about multidisciplinary services by following a family through an entire evaluation in a multidisciplinary clinic and discussing the process with attending physicians and supervisors. When feasible, opportunities should be provided for students to observe examinations conducted by primary care pediatricians and subspecialists. It is important that trainees have supervised experiences in effective means of communication and ways to form working relationships with pediatricians as well as other allied health care professionals to produce an integrated team approach to assessment and intervention.

Trainees should have opportunities to participate in multidisciplinary staffings, team meetings, teaching rounds, and hospital administration and departmental meetings. Supervised experiences also should involve health delivery issues (e.g., documentation of information in client charts, communicating with attending physicians prior to providing a specific intervention with a client). Trainees should ideally have supervised experience in conducting lectures to medical students and pediatric residents, as well as other health care professionals on psychological factors during their primary care or psychiatry rotation.

### *Prevention, Family Support, and Health Promotion*

Pediatric psychologists often work in primary care settings, and therefore may have greater opportunities than other psychologists to conduct disease prevention and health promotional activities. An important role for pediatric psychologists is promoting healthy lifestyles and preventing the development of health-risk behaviors in both healthy and chronically ill children. Particularly important in primary care is the promotion of exercise and a healthy diet to prevent childhood obesity and associated sequelae such as hypertension and type 2 diabetes. For adolescents, prevention efforts are geared toward health-risk behaviors such as unprotected sex, smoking, substance abuse, and other high-risk health behaviors including those that may result in unintentional injuries. Pediatric psychologists should be knowledgeable of physical and familial factors that may place children and adolescents at risk for disease later in adulthood and take steps to mitigate these risk factors in childhood.

Given the increased risks of psychosocial problems in children with chronic illness, pediatric psychologists should employ preventive interventions whenever possible to diminish negative emotional sequelae in these children. Pediatric psychologists should work in conjunction with pediatric health care providers to identify and intervene with families at risk for domestic violence, child abuse, or neglect.

Pediatric psychology trainees should have didactic course work, formal readings, or seminars on the science of prevention and principles of behavioral change pertinent to healthy development and prevention of disease in adulthood. Course work and lectures on healthy behavior and health-risk behavior should be offered, as well as seminars on screening and how to identify children in primary care at risk for abuse and neglect. Finally, trainees should have supervised experience in addressing multiple behavioral health issues that include the promotion of healthy lifestyles and disease prevention; safety, nutrition, weight management, and exercise; and how to address family risk factors such as family violence, sexual and physical abuse, and individual risk factors such as substance use (including nicotine).

### *Social Issues Affecting Children, Adolescents, and Families*

Pediatric psychologists frequently are exposed to social issues in health care settings. For example, pediatric psychologists often work with children who have been ex-

posed to violence or have problems with access to health care resources. By identifying and providing early intervention for children at risk for behavioral and health disorders, pediatric psychologists can help to prevent serious disorders. Advocacy for children, particularly as it relates to access to health care, should take place at the individual, local, state, and national levels.

Trainees should have readings and seminars on advocacy in pediatric health care and social issues as these affect the development of children. Publications and conferences on social issues that affect health care delivery and affect the well-being of children and families should be made available to students. Trainees might gain experience in advocacy by becoming involved in local, state, and national professional associations, including the Public Interest Directorate of APA, and learning from professional grassroots organizations experienced in advocacy, such as the National Alliance for the Mentally Ill.

### *Consultation and Liaison Roles*

Pediatric psychologists often consult with providers from other disciplines, especially pediatricians, in a variety of settings (Drotar, 1995). With increased emphasis on ambulatory care, pediatric psychologists need to be able to consult with community physicians and specialists as well as medical center–based physicians. An understanding of consultation models and the ability to complete brief, focused consultations with patients, physicians, and medical and other health staff are particularly important skills for pediatric psychologists.

Consultation extends beyond physicians to other allied health professionals (e.g., nurses, child life workers, physical therapists). Pediatric psychologists also are in a unique position to educate and consult to nonmedical professionals, such as teachers, school psychologists, and counselors regarding pediatric disease and its psychosocial sequelae. In many instances, pediatric psychologists play a liaison role with medical subspecialties. Pediatric psychologists provide support to other disciplines for issues related to the management of difficult families, stressful physician and family interactions, professional burnout, bereavement, and negotiating stressful situations. Consultation and liaison activities necessarily involve skills that have been reviewed in the previous sections on working with multiple disciplines in service delivery systems, assessment, and intervention and therefore will not be repeated.

Trainees should experience seminars and formal readings on consultation–liaison models as applied to pediatric psychology. Seminar topics should include the key elements of functioning as a health care professional, such as patient–physician communication, professional stress, and burnout. Trainees should have opportunities to observe supervisors providing consultation and attend faculty presentations to medical students and pediatricians. Participation with a staff person providing a liaison role to a subspecialty team is an important component of a pediatric psychology training program.

Pediatric psychologists should receive training in how best to teach the principles of learning, development, and behavioral health to other health care professionals and know the most effective methods to train physicians, nurses, and providers in the integration of behavioral science into health care. Trainees should have supervised experiences in providing consultation to health care professionals via participation in a consultation-liaison service and preparing medical chart notes in both inpatient and outpatient settings. A supervised practicum should be available in consulting to community-based pediatricians on common childhood problems, as well as consultation regarding psychological sequelae of children with medical problems in nonmedical settings, and consultation to health care professionals regarding job-related stress. Finally, trainees should have supervised experience in consulting with parent groups on issues related to child development and behavior and experience in communicating psychological knowledge to pediatricians, pediatric residents, and other health care professionals, as well as in educating these professionals about the best practices in pediatric psychology.

### *Disease Process and Medical Management*

Pediatric psychologists must have a basic understanding of diseases because they routinely work with medical professionals. It is equally important for the pediatric psychologist to keep informed of advances in current medical treatments for childhood diseases. Understanding of the illness better prepares pediatric psychologists to foresee areas in which psychological issues will be important and enables them to design related interventions. A sufficient working knowledge of the terminology relevant to disease processes and treatments is necessary to communicate with physicians treating these patients and with their family caregivers, who rapidly can become knowledgeable about the specifics of the illness. In addition, pediatric psychologists need to understand adverse behavioral effects of common nonpsychotropic medications (e.g., steroids) and other medical interventions and management techniques.

Instruction should take the form of course work, seminars, readings, and lectures on diseases, disease processes, and medical treatment. Reviews in specialty medical jour-

nals should be read on the advances in understanding and treating childhood disorders. Trainees should attend continuing education and medical rounds offered in most major medical centers on the advances in medical knowledge and care, as well as pediatric grand rounds and bedside rounds, medical procedures, specific teaching rounds (e.g., walking rounds, tumor boards). Students should complete supervised rotations through primary care, community health clinics, and specialty clinics to gain firsthand knowledge of disease, management, and advances in treatment.

## Closing Comments

The recommendations of this SPP task force expand upon those of Roberts et al. (1998) for clinical child psychology, update training recommendations for pediatric psychology made in the 1980s, and suggest particular areas unique to the training of pediatric psychologists. These areas also further solidify an identity for pediatric psychology as a unique and separate discipline from clinical child psychology and extend this identity beyond the original conceptualizations of its founders (e.g., Wright, 1967). In the future, we envision greater involvement of families in both disease prevention and adaptation to illness, a more significant role for pediatric psychologists in helping families manage complex medical systems, a greater role for pediatric psychologists in health promotion, more frequent delivery of pediatric psychological services in the primary care setting, improved knowledge of disease processes and innovative approaches to disease management among practicing pediatric psychologists, and greater opportunities for interdisciplinary training. These newer areas not only set a training agenda for the next decade but also suggest ways in which pediatric psychology has changed.

First, a body of research indicates that families significantly influence health outcomes as well as coping and adaptation to children's illness (for a review, see Kazak, Segal-Andrews, & Johnson, 1995). Whereas the field of pediatric psychology previously focused on the child as a means of enhancing coping and adjustment to illness, and even promoting health, there is now widespread recognition that the family is an important mediator of how children adjust and adapt to the experience of illness (Kazak & Simms, 1996) and how healthy behaviors are learned. Although family assessments and interventions have been a mainstay of clinical psychology for the past three decades, only recently has the importance of the family system in understanding health outcomes been more fully realized. Clearly, training approaches that include family systems assessments and interventions are needed to enhance the well-being and quality of life of pediatric patients who suffer from both acute illnesses as well as lifelong diseases.

Given the ever increasing number of specialists employed to work with children, in both inpatient and outpatient settings, as well as the complex systems of health science centers and children's hospitals, it is important that pediatric psychologists receive training in negotiating these systems and working with the many different health care providers. It is improtant to understand the role of providers within these complex systems, as well as how each of these systems may best serve a child with a multitude of medical needs. At the same time, it is important that the child and the family do not become lost within the complex number of providers involved in the child's care; that is, the child and family need a "medical home." A medical home refers to the provision of preventive care, ambulatory, and inpatient care if necessary; continuity of care from infancy through adolescence; appropriate use of subspecialty consultation and referrals; interaction with schools and community service agencies; and a central record that contains all medical information (Green & Palfrey, 2000). An appropriate role of the pediatric psychologist in the years to come will be to ensure that all children have a medical home and are advocated for by both specialty and primary care providers.

With the focus on cost containment in health care, another important role of pediatric psychologists will be in the promotion of health and prevention of illness. Certain ethnic and cultural groups may be particularly challenged by specific disparities in routine health care. An important training role of pediatric psychologists will be in the promotion of health behaviors for children, adolescents, and their families and the development of programs to ensure that all children and adolescents have appropriate access to primary care and prevention programs.

The majority of children will receive health care in primary care. For this reason, pediatric psychologists should receive training in the provision and delivery of psychological services within the primary care setting. Specifically, it will be important to provide training experiences to aspiring pediatric psychologists in areas where health care might take place other than tertiary care centers. As important diagnostic and clinical therapies become increasingly more common in the primary care setting, pediatric psychology services need to be as accessible as possible to all children, adolescents, and their families.

Finally, advances in medical technology and medical knowledge are occurring every day. It will be important for the pediatric psychologist to have a thorough understanding of disease as well as the new diagnostic and treat-

ment techniques to assess and manage pathologies. Clearly, a working knowledge of disease etiology as well as diagnostic and intervention approaches will be imperative as we strive to communicate with pediatric providers and the children and caregivers we serve. Greater opportunities for interdisciplinary training will also be important in improving the medical knowledge of pediatric psychologists.

Our training programs must embrace our past traditions and face new challenges and opportunities to ensure that we provide optimal training for the next generation of pediatric psychologists. SPP will monitor the training of pediatric psychologists over the next decade, gradually define and publicize those training experiences and competencies deemed most important to the practice of pediatric psychology, and respond to emerging trends in pediatric health care that will shape the types of training necessary in our field.

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