
Psychologists and Pediatricians

Opportunities for Collaboration in Primary Care

Terry Stancin

MetroHealth Medical Center, Cleveland, Ohio, and Case Western Reserve University

Ellen C. Perrin

The Floating Hospital for Children and Tufts Medical Center, Boston, Massachusetts

Despite an early interest in pediatrics among psychologists and a natural partnership between psychology and pediatrics, psychologists' impact on services for children in primary care settings could be much greater than it is. The purpose of this article is to describe the special contributions of pediatric psychologists and pediatricians in the development of comprehensive, integrated systems of health care for children; the importance of health behavior change as a preventive measure in the lives of children and adolescents; and how psychologists, through their leadership in clinical, research, and advocacy efforts, can harness the important resources of family relationships to promote the health of children.

Keywords: pediatric psychology, primary care, integrated care, collaborative care, child mental health

In his presidential address to the American Academy of Pediatrics, J. L. Wilson (1964) asked a question that was an emerging concern for pediatricians of the day: "Who is to attend to the common emotional or behavioral problems of children?" (p. 988). Wilson (1964) believed that psychologists were part of the answer, saying

I feel very strongly that one of the things I would do if I could control the practice of pediatrics would be to encourage groups of pediatricians to employ their own clinical psychologists . . . Such an approach, it seems to me, is the only practical step to aid us in solving many of the problems in childhood and adolescence. (p. 988)

As the practice of pediatrics shifted in the 1960s away from a focus on infant and child morbidity and mortality toward concerns about child development and behavior, pediatricians like Wilson were joined by psychologists such as Jerome Kagan, Logan Wright, Dorothea Ross, Lee Salk, and others in launching a new specialty of "pediatric psychology" (Mesibov, 1984; Routh, 1975) that included practice models for integrated and primary care. Far ahead of its time, the concept of a "medical home" was first introduced by the American Academy of Pediatrics in 1967 (American Academy of Pediatrics, Council on Pediatric Practice, 1967), and early practice models were shaped by close psychologist/pediatrician collaborations that focused on child development, family supports, health promotion, and disease prevention.

Despite the early interest of psychologists and a natural partnership between psychology and pediatrics, psychologists' impact on the range of services for children in

primary care settings has not maximized its potential. The purpose of this article is to describe the special contributions of pediatric psychologists in the development of comprehensive systems of health care for children. We also describe the importance of behavior change as a preventive and therapeutic resource for the health of children. As experts in assessment, development, and mental health and through their leadership in clinical, research, and advocacy efforts, psychologists can be effective partners in harnessing the important resources of family relationships to promote children's health.

Traditional vs. Primary Care Case Illustration

Consider the following case scenario to highlight the impact that primary care psychologists can make in a pediatric office. A single mother brings her four-year-old son and two-year-old daughter for scheduled well-child care appointments. Both children are healthy, but the boy is overweight (at the 90th percentile for his age). The mother expresses concerns that her son's behavior is difficult for her to manage: He is active, defiant, and aggressive toward his sister. Unlike her brother, the little girl is underweight and small for her age. She is not talking, makes minimal eye contact, and tends to line up toys rather than play interactively with them. In a traditional primary care practice, the pediatric primary care provider (PPCP) may spend 11–20 minutes or fewer (Halfon, Stevens, Larson, & Olson,

Editor's note. This article is one of 11 in the May–June 2014 *American Psychologist* "Primary Care and Psychology" special issue. Susan H. McDaniel, PhD, and Frank V. deGruy III, MD, MSFM, provided the scholarly lead for the special issue. The articles are the products of collaborations between psychologist and primary care physician authors.

Authors' note. Terry Stancin, PhD, Division of Child and Adolescent Psychiatry and Psychology, MetroHealth Medical Center, Cleveland, Ohio, and Case Western Reserve University; Ellen C. Perrin, MD, MA, Division of Developmental-Behavioral Pediatrics, The Floating Hospital for Children, Boston, Massachusetts, and Tufts Medical Center, Boston, Massachusetts.

We thank Lynne Sturm and Lisa Y. Ramirez for their helpful suggestions during manuscript preparation.

Correspondence concerning this article should be addressed to Terry Stancin, Division of Child and Adolescent Psychiatry and Psychology, MetroHealth Medical Center, 2500 Metrohealth Drive, Cleveland, OH 44109. E-mail: tstancin@metrohealth.org



Terry Stancin

2011) with each child, during which time the focus is likely to be on updating vaccinations, monitoring height and weight, and discussing safety. The PPCP may indicate his or her concern about the boy's behavior and encourage the mother to contact a mental health resource in the community, where the waiting time for an appointment is a few months. The mother may be instructed to increase caloric intake for the girl and to return for a weight check in 2 months. More than likely, services for the children will not be initiated, nor will there be any improvements in the children's conditions at the next primary care visit.

In an integrated primary care setting, the responses to this clinical scenario would be quite different. A formal developmental-behavioral screening protocol would be in place so both children might have been identified as needing further evaluation by a behavioral health provider even before the visit took place. The mother would be encouraged to participate in on-site parent education groups or individual interventions focused on parent-child interactions to decrease the boy's aggressive behavior. Family-centered, evidence-based interventions for childhood obesity would be recommended that could be implemented on site and led by the psychologist. A developmental evaluation for a possible autism spectrum or other neurodevelopmental disorder and a feeding assessment would be conducted by the psychologist in the primary care clinic to identify early intervention services for the little girl. The primary care team would have access to all records and collaborate in the treatment planning; follow-up visits likely would involve the PPCP and the primary care psychologist. One of the team members (possibly the psychologist or another provider under the direction of the psychologist and PPCP) would be in contact with community resources involved with the family such as schools and

early intervention programs to assist with coordination of care.

Pediatric Primary Care Priorities

Fortunately, most children are healthy and obtain health care services in outpatient primary care settings, not in hospitals or specialty care clinics. In the United States, PPCPs are usually pediatricians, family medicine physicians, or advanced practice nurses, nurse practitioners, or physician assistants. In the medical home framework, the PPCP serves as the coordinator of all the health care that the patient receives, including behavioral health care. However, a medical home model does not necessarily presume that mental health services are available on-site. As in adult medicine, pediatric settings that include on-site behavioral health programs are referred to as "co-located," "collaborative," or "integrated" primary care settings depending on the extent to which services are integrated into the practice (Stancin, 2005; Stancin, Perrin, & Ramirez, 2009).

Psychologists in adult primary care settings tend to concentrate on strategies to reduce morbidity and improve health outcomes related to chronic illness. Likewise, pediatric psychology has focused on the psychosocial aspects of chronic physical health conditions among children, their siblings, and their parents. Behavioral health priorities in pediatric primary care settings tend to be broader, with a much greater emphasis on prevention and early intervention for developmental and behavioral conditions as well as management of chronic pediatric conditions and health risks, as outlined in Table 1.

It is worth noting that the epidemiology of chronic illnesses in pediatrics varies a great deal from what is seen in adult medicine. In adults, there are a few illnesses that are very common (e.g., diabetes, hypertension) so that primary care sites are able to organize efficient interventions around them. In pediatrics, the overall prevalence of chronic conditions is low, currently about 17% to 20% (Bloom, Cohen, & Freeman, 2010). This overall prevalence comprises many disparate physical illnesses, and none of them is very common. Even asthma, the most prevalent of the chronic physical illnesses in childhood, affects only about 9% of children under age 17. Other chronic physical conditions are found in less than 1% of children (e.g., congenital heart disease, seizure disorders, and diabetes). In contrast, the conditions with the highest prevalence and the most rapid growth in incidence among children are social, behavioral, and neurodevelopmental conditions—conditions in which psychologists have a critical role in prevention, ongoing care, and treatments to encourage behavior change.

Physical health status is linked to behavioral health issues in children as well as in adults. For example, children with fair or poor health status are nearly five times more likely to have a learning disability and more than twice as likely to be diagnosed with attention-deficit/hyperactivity disorder (ADHD) than are children with excellent or very good health (Bloom et al., 2010). Therefore, a noncategorical approach that addresses behavioral health in



Ellen C. Perrin

the context of overall health care is the optimal way to make programs work in most pediatric primary care settings. A co-located mental health clinician can assist parents with coordination of care and address the complex needs for preventive and therapeutic medical and psychosocial interventions. In a medical home, the practice maintains a registry of patients with ongoing conditions and designates a “point person” to be available for questions and frequent check-ins with their families. Regular meetings between parents and professionals serve to predict and plan for upcoming challenges and necessary consultations or variations in the child’s educational or medical care plan. In many such practices, members of the office staff maintain systems for improved access to preventive and therapeutic mental health services. Although some programs include psychologists, many programs with opportunities for collaboration await participation by psychologists in greater numbers.

Early Psychology–Pediatrician Efforts With Integrated Care

A model pediatric practice with co-located mental health activities was described in 1967 (Smith, Rome, & Freedheim, 1967), but Carolyn Schroeder deserves credit for first envisioning and describing the potential scope and impact of a comprehensive pediatric primary care psychology practice (Schroeder, 1979, 2004). Schroeder established an integrated pediatric psychology practice that included clinical, teaching, research, community advocacy, and public health components. Among the earliest activities offered were telephone “call-in hours” for parents, evening parent education groups, brief “come-in” sessions for parents to discuss individual concerns, and a developmental screening program. She later expanded services to include prevention

programs (e.g., a parent resource library and a series of parent handouts on common behavioral concerns such as toilet training) and provision of direct clinical care for a variety of problems (e.g., negative behaviors, anxiety, ADHD, adjustment issues). These interventions were shown to be cost-effective and efficient; they emphasized brief, problem-focused treatments, protocols for more commonly seen problems (e.g., enuresis, sleep problems, negative behaviors), and parent–child groups.

Others would follow to advocate for psychologists to develop primary care mental health services for children (e.g., see Christophersen, 1982; Drotar, 1995; Perrin, 1999; Roberts & Wright, 1982; Routh, Schroeder, & Koocher, 1983; Stancin, 1999). Major pediatric psychology textbooks began including chapters on primary care (Drotar, Spirito, & Stancin, 2003; Stancin et al., 2009). Others (e.g., Black, 2002; Spirito et al., 2003; Guevara, Greenbaum, Shera, Bauer, & Schwartz, 2009; Stancin, 2005; Wildman & Stancin, 2004; Williams, Shore, & Foy, 2006) recommended expansions of pediatric primary care services by pediatric psychologists.

Opportunities for Clinical Collaboration

Between 20% and 25% of children experience social-emotional problems that cause concern to their parents (U.S. Department of Health and Human Services, 2009). Many more children have clinically significant problems, though these may not (yet) rise to the level of diagnosis of a psychiatric disorder (Briggs-Gowan et al., 2003). However, fewer than half of the children and parents needing mental health support actually receive it, and at least half of adults with a diagnosed mental health disorder had symptoms of the disorder before the age of 14 but were not diagnosed or treated (Anda et al., 2007). With more than 90% of children in the United States seeing a PPCP each year, the primary care setting is ideal for screening and early intervention, but pediatricians struggle to find ways to identify, prevent, and assist with the mental health needs of children in primary care. Despite their increasing recognition of developmental-behavioral morbidities, pediatricians lack confidence in managing/treating mental health problems in children other than ADHD (Stein et al., 2008).

There is a striking shortage of qualified child mental health clinicians, especially for children younger than age 5 and for families in mid- and low-income groups and/or of minority background. For example, despite a growing evidence base for the benefits of parenting education programs and other social-emotional interventions for parents of young children, these programs are rarely accessible, affordable, and offered in comfortable and nonstigmatizing settings (Barlow & Parsons, 2003). Pediatric primary care settings provide the most accessible and least stigmatizing resource for many families who have concerns about their children’s development and/or behavior. A systematic package of mental health oversight is described in the *Bright Futures* (Hagan, Shaw, & Duncan, 2008) guidelines for pediatric care, which have been incorporated into the

Table 1
Pediatric Primary Care Psychology Priorities, Activities, and Resources

Priorities	Description of activities	Selected resources
Prevention, screening, and early intervention	Systematic developmental screening of young children Global behavioral screening Targeting screening of adolescents for substance abuse, depression/anxiety Identification and provision of support for suspected child abuse and neglect Parent education and family involvement to promote optimal child development	Briggs et al., 2012 Drotar, Stancin, Dworkin, Sices, & Wood, 2008 Kuhlthau et al., 2011 Perrin & Sheldrick, 2012 Seid, Opipari-Arrigan, & Sobo, 2009
Interventions with child behavioral problems and disorders	Individual or group parent-focused interventions for subclinical or mild behavior problems: - e.g., sleep, tantrums, fears, defiant behavior, elimination and toileting problems, problematic feeding/eating behaviors Brief, symptom-focused interventions for mild to moderate psychiatric disorders: - e.g., attention-deficit/hyperactivity disorder (ADHD), disruptive behavior disorders, depression, anxiety disorders	Berkovits, O'Brien, Carter, & Eyberg, 2010 Kolko, Campo, Kilbourne, & Kelleher, 2012 Lavigne et al., 2008 McMenamy, Sheldrick, & Perrin, 2011 Meltzer, 2013 Perrin, Sheldrick, McMenamy, Henson, & Carter, 2014 Sanders, 1999 Sobel, Roberts, Rayfield, Barnard, & Rapoff, 2001
Chronic health conditions	Health promotion interventions with chronic health conditions (e.g., obesity, diabetes, asthma, sickle cell disease, seizures, headaches)	Barlow & the Expert Committee, 2007 Berkowitz et al., 2013 McMenamy & Perrin, 2004 McQuaid & Abramson, 2009 Steele & Cushing, 2013 Wysocki, Buckloh, & Greco, 2009
Developmental disorders	Assessment, interventions, and care coordination to address behavioral and developmental concerns in children with developmental disorders (e.g., ADHD, autism, intellectual disability, learning disorders, language disorders, sensory impairments, traumatic brain injuries) Advocate for educational and community services	Clay & Stern, 2005 Ozonoff, Goodlin-Jones, & Solomon, 2005 Pelham, Fabiano, & Massetti, 2005 DuPaul, Power, & Shapiro, 2009
Identification of family resources	Identification of resilience, stress, coping, parental mental health issues (e.g., depression, substance abuse)	Foy & American Academy of Pediatrics, 2010

Patient Protection and Affordable Care Act (2010) as a standard of care. *Bright Futures* is a set of principles, strategies, and tools that serve as guidelines for maintaining the optimal health and well-being of children, adolescents, and families. These guidelines, endorsed by the American Academy of Pediatrics, include advice regarding health supervision, screening, and interventions for primary care providers in all health care settings and in communities, with a notable focus on mental health and resilience. Some pediatricians are adapting to changing demands by changing their practice structure to incorporate nonphysician colleagues in the standard care model. A national survey reported that 17% of pediatricians had a mental health

clinician working in the primary care practice setting (Guevara et al., 2009). In a recent survey of Massachusetts pediatricians, 34% reported that they had one or more mental health colleague(s) in their office suite (Levy, Hill, Sheldrick, & Perrin, 2013; Perrin & Sheldrick, 2012).

Based on the growing recognition of the mental health needs in pediatrics, the American Academy of Pediatrics recently assembled a large Task Force on Mental Health to encourage more comprehensive and effective identification, prevention, and care for mental health disorders in pediatric practice. Recognizing the size and complexity of the needs, its report (Foy & American Academy of Pediatrics, 2010) recommended a number of innovations to

improve pediatric care—including the collaboration of pediatricians with psychologists, social workers, psychiatrists, and others in the community. The task force also addressed the barriers to developing an effective collaboration, such as fiscal and insurance constraints that limit its business viability, but this work is ongoing.

In more traditional outpatient child mental health settings, providers often intervene with children who present with multiple, severe problems with complex psychosocial factors at play. Dictated in part by demand, pediatric primary care interventions by psychologists tend to target specific behavior problems of milder severity involving less complex psychosocial factors that are amenable to briefer approaches. Disruptive behaviors (e.g., tantrums, oppositional behavior, noncompliance, and aggression) are the most frequently referred problems in primary care, followed by mood- and school-related matters. The most common diagnoses made by psychologists in primary care settings are oppositional defiant disorder (22%–49%), anxiety disorder (23%–47%), ADHD (22%–45%), and adjustment disorders (14%), with many children having more than one diagnosis (Kolko, Campo, Kilbourne, & Kelleher, 2012; Sobel, Roberts, Rayfield, Barnard, & Rapoff, 2001). Other populations benefiting from psychologist/PCP collaboration include children and adolescents who have developmental disorders, acute medical symptoms (e.g., stress-related abdominal pain), or chronic medical conditions; who are exposed to violence; whose parents are depressed or engaged in substance abuse; or whose parents have been in military combat.

Within an integrated care model, pediatric psychologists are available to address developmental and behavioral concerns as they are identified rather than having to wait for families to navigate barriers to reach them in another setting. The psychologist's level of involvement may range from being a consultant to serving as the primary therapist for the child and family. Co-located clinicians must avoid filling their time with traditional psychotherapy cases and approaches so that they can remain available for on-site consultations, brief follow-up interventions, supervision of screening and other programs, and informal consultations that are the central hallmark of a collaborative practice. On-site provision of services offers many benefits including greater patient access, continuity of care, trust by the PPCP, communication between medical and mental health clinicians, and a reduction in stigma. Furthermore, it has been shown that a much larger proportion (up to 66%) of families referred for on-site counseling follow through with mental health referrals, compared with fewer than 5% of families referred for off-site counseling (Lieberman, Adalist-Estrin, Erinle, & Sloan, 2006). Similarly, Kolko et al. (2012) reported that 95% of children obtained recommended mental health services in their primary care setting as opposed to 17% of children who were referred to outside providers; 78% of children served in-house completed their treatment as opposed to *none* of the children referred elsewhere. If psychopharmacological treatments are indicated, an office-based psychologist may ensure coordination of

the pharmacological and psychological interventions and follow-up monitoring and care.

An example of the critical importance of recognizing the complex interplay of biopsychosocial factors in the causes and treatment of disease involves the current epidemic of obesity. The incidence of childhood obesity has tripled in the past 30 years, such that now more than a third of children and adolescents in the United States are obese or overweight (Barlow & the Expert Committee, 2007). The short- and long-term health consequences (e.g., diabetes and cancer) are severe, as are secondary social and mood-related consequences that have been well documented. Multifaceted prevention and behavioral treatments are considered to be essential to addressing this health care crisis (Barlow, & the Expert Committee, 2007). Pediatric and child clinical psychologists have been on the forefront of developing and evaluating innovative prevention and treatment programs for obesity, including interventions in primary care (Berkowitz et al., 2013).

Let us return to opportunities to intervene with childhood asthma, unquestionably a highly prevalent (and increasing) public health problem with considerable morbidity and health care costs (McQuaid & Abramson, 2009). As experts in the care of children with chronic health conditions, pediatric psychologists are uniquely suited to address the complex family issues contributing to problems with treatment adherence and disease management and to implement interventions to foster skills necessary to cope with treatment. Psychological interventions that have been shown to improve asthma outcomes can be adapted for use in primary care settings, such as self-management training, problem-solving techniques, family-based interventions, motivational interviewing, and relaxation training/biofeedback (McQuaid & Abramson, 2009). The same may be said for other medical conditions affecting children such as diabetes, seizures, cancer, sickle cell anemia, Crohn's disease, migraine headaches, and so forth.

Effective interventions to address child behavior problems in pediatric primary care settings may utilize the pediatric psychologist as a supervisor of less highly trained clinicians. For example, Lavigne et al. (2008) compared three interventions for children with oppositional defiant disorder. Twenty-four pediatric practices with a relatively educated parent population were randomized to receive (a) nurse-led or (b) psychologist-led group manualized parent training treatment or (c) a minimum intervention consisting of just the companion treatment book. Results indicated sustained behavioral improvements in all three conditions, with better results for parents who attended more intervention sessions. Likewise, Berkovits, O'Brien, Carter, and Eyberg (2010) combined systematic screening and evidence-based preventive interventions with a sample of 3- to 6-year-old children with subclinical disruptive behavior problems. Parents were randomized to receive either group sessions or written information on effective parent-child interactions. Results indicated that both interventions were effective in decreasing child behavior problems and ineffective parenting strategies, with results maintained at a 6-month follow-up. Perrin, Sheldrick, McMenamy, Hen-

son, and Carter (2014) also demonstrated that a psychologist could train pediatric office nurses to act as co-leaders of parent training groups held in pediatric office settings. These studies suggest that intensive, face-to-face, interventions may not be necessary or the first-line treatment of choice for all children identified with behavior problems in primary care, and they demonstrate the important role of pediatric psychologists in developing and supervising innovative programs.

Education and Training

One strategy to address the unmet mental health needs of children is to enhance training of physicians to treat psychosocial issues during primary care visits. The earliest efforts to enhance training for collaboration arose in curricula for family medicine training programs. In fact, the American Academy of Family Practice has required residency programs to include behavioral health faculty since the 1960s. The formal recognition of developmental-behavioral pediatrics as a subspecialty in 2000, and the requirement that all pediatric residents receive dedicated instruction in this discipline during their training, has increased pediatricians' awareness of the complexity of developmental and behavioral conditions affecting growing numbers of children and families. For many years, pediatric psychologists have had a major role in pediatricians' training. Among the more recent efforts to educate PPCPs to better address psychosocial concerns in primary care are incorporating motivational interviewing techniques in practice and placing postdoctoral psychologists in pediatric resident continuity clinics to provide on-site consultation and oversight (Pisani, LeRoux, & Siegel, 2011).

The publication of guidelines for primary care physicians for the evaluation and treatment of ADHD has increased the confidence of some PPCPs in diagnosing and treating children with this disorder, but the increased prevalence, increased complexity, and chronic nature of this condition have resulted in increased interest on the part of PPCPs in collaborating with mental health colleagues in the long-term care of such children. Furthermore, PPCPs acknowledge that they are less comfortable diagnosing and treating anxiety, depression, and other behavioral problems in children (Stein et al., 2008). The Resource for Advancing Children's Health (REACH) Institute (www.thereachinstitute.org) has embraced the challenge of teaching pediatricians to identify, treat, and monitor children's psychiatric disorders with only occasional consultation from mental health specialists.

Specialized training of psychologists is necessary in order to have a workforce that is adequately prepared to be effective in primary care settings (Rozensky & Janicke, 2012). The Society of Pediatric Psychology has recognized the importance of developing competency standards and is finalizing recommendations for a broadly defined scope of pediatric psychology practice (Palermo et al., 2013). However, specific competencies necessary to successfully function in pediatric primary care settings that can then be translated into training goals and objectives have yet to be established. A priority for an American Psychological As-

sociation (APA) Division 54 (Society of Pediatric Psychology) Task Force on Integrated Care is the melding of the Pediatric Psychology Competencies (Palermo et al., 2013) and the Competencies for Psychology Practice in Primary Care (McDaniel et al., 2014, this issue) to delineate specific competency and training recommendations for psychologists in pediatric primary and integrated care settings (Sturm & Stancin, 2013).

Models of Collaborative/Integrated Practice

Collaborative practice models have been studied and reviewed much more extensively for internal medicine and family medicine practices than for pediatric practices (Collins, Hewson, Munger, & Wade, 2010). In pediatrics, as in adult settings, *co-location* signifies proximity of mental health providers but does not necessarily imply integration. *Collaborative care* suggests a greater degree of interdisciplinary and coordinated patient care, usually directed toward children with behavioral, developmental, or medical needs and with providers who may or may not be part of the same office staff. Fully *integrated* care implies that mental health services are a component of primary care, with behavioral health services available to all children. Therefore, psychologists in integrated practices tend to have large client loads, offset by more flexible time limits, briefer treatments, and open-ended treatment plans (i.e., treatment as needed over time). These providers are truly an integral part of the pediatric practice; that is, they attend regular staff meetings, they use the same medical chart, and scheduling and billing are accomplished by the pediatric office staff (Stancin et al., 2009).

A number of programs have developed comprehensive care models based on the integration of mental health clinicians and pediatricians (e.g., Perrin & Sheldrick, 2012). In a randomized controlled trial using "care managers" (trained master's-level mental health clinicians) in pediatric practices, Kolko et al. (2012) demonstrated parental satisfaction with and clinical success in the care of children with ADHD and other externalizing problems. More children began and continued treatment protocols in the experimental group than among controls, and outcome measures documented greater improvements in symptoms.

The Massachusetts Child Psychiatry Access Program (MCPAP) is an example of an *off-site* collaborative consultation program. In this program, a range of mental health consultation services is available to enrolled PPCPs, usually by telephone. PPCPs may call to ask diagnostic questions, receive consultation on medication, or obtain guidance about community mental health resources. MCPAP is financed using state funds and is available to patients at no cost, regardless of insurance status. The program has been evaluated (Sarvet et al., 2010; Sheldrick, Mattern, & Perrin, 2012), modified, and replicated in various forms in over 20 other states.

Other innovative models of care that include psychologists working alongside pediatricians are the Guiding Appropriate Pediatric Services (GAPS) project, which fo-

cused on the care of children with chronic health conditions (McMenamy & Perrin, 2004), and the ongoing Advanced Parenting Education in Pediatrics (APEP) project, which focuses on providing parenting advice and support within the pediatric primary care setting to parents of toddlers with early evidence of disruptive behavior (McMenamy, Sheldrick, & Perrin, 2011; Perrin et al., 2014). Still other programs include strategies for pediatric practices to provide brief mental health interventions in their offices for children with disruptive behaviors, primarily through manualized treatment protocols for working with their parents, either individually or in groups (e.g., the “Triple P” program, Sanders, 1999; Lavigne et al., 2008).

Developmental and Behavioral Screening

There is increasing national interest in—and a growing mandate for—developmental-behavioral screening as a routine part of pediatric health care (Stancin et al., 2009). Several states have begun to require (and pay for) systematic screening for Medicaid recipients, and many private payers are agreeing to similar policies. The proportion of pediatricians who report administering a validated screening instrument as part of their encounter has increased from 23% in 2002 to 47% in 2009 (Radecki, Sand-Loud, O’Connor, Sharp, & Olson, 2011), and routine screening has been shown to lead to increased identification and referrals (Kuhlthau et al., 2011). Follow-up of routine first-level population screening, usually not an appropriate role for a psychologist, can be done by pediatric office staff. However, with training in psychometrics as well as medical collaboration, pediatric psychologists are uniquely qualified to guide pediatricians in selecting valid and feasible methods for developmental and behavioral screening and to coordinate a systematic screening program and its requisite follow-up activities (Drotar, Stancin, Dworkin, Sices, & Wood, 2008).

There is evidence that co-locating a psychologist promoted effective developmental screening in a large cohort ($N = 3,169$) of children in a busy pediatric practice (Briggs et al., 2012). Children who screened positively on standardized measures and received intervention from the psychologist showed significant improvement on developmental measures compared with those who did not receive intervention.

Unique Contributions of Psychologists in Primary Care

Clinicians trained in many disciplines, including child and adolescent psychiatrists, clinical social workers, case managers, child life workers, health educators, and nurse clinicians, have much to offer to the primary care setting, but psychologists bring a unique perspective, knowledge base, and skill set. Psychologists may be involved in direct service provision (e.g., coordinating developmental-behavioral screening and follow-up programs, running discussion/information and therapeutic groups, conducting short-term psychotherapy with parents and/or children, facilitating

effective referrals to community-based mental health and developmental resources), but other behavioral health providers (e.g., counselors, social workers, marriage and family therapists) may provide many of these services at lower cost. There have been few evaluations of the success of providers with different professional backgrounds and/or levels of experience working in integrated practice models. In an era of cost containment, it is possible that in many primary care settings, psychologists will be considered to be most valuable in leadership roles and/or in direct service provision to only the most complex patients.

Pediatric psychologists offer more than substantial clinical expertise. To more fully appreciate their potential contributions in pediatric primary care, they should be considered broadly as “health care providers” rather than “behavioral health providers,” because the scope of the skills and expertise they offer is much more expansive. Not only do pediatric psychologists focus on the behavioral and emotional problems of children, but they also are experts on health promotion, disease prevention, chronic illness, and neurodevelopmental disorders. Moreover, training in pediatric psychology facilitates the necessary and fundamental paradigm shift from a provider–patient model to a team–patient, interprofessional model in which a team shares not only care but also roles (Kirkpatrick, Vogel, & Nyman, 2011); blurred role boundaries between disciplines are acceptable (within the limits of professional scope of practice) in working toward shared goals of providing needed care. Also, because they are doctoral-level providers, psychologists are more likely to be considered as co-equal colleagues with physicians in an integrated care model.

Psychologists are well equipped to lead needs assessments and guide program development, to develop and carry out screening programs, to develop evidence-based treatment protocols, to design and conduct quality improvement and outcomes research, and to provide education, training, supervision, and evaluation of other behavioral health practitioners. Psychology training emphasizes application of evidence-based assessment and intervention appropriate to the clinical needs and context of care. Psychologists’ advanced training generally allows for more flexibility in interpreting and individualizing evidence-based models of care. For example, psychologists could help create and run programs on emerging innovations in eHealth care such as telehealth interventions (Palermo & Wilson, 2009; Wade et al., in press) or the use of cell-phone technologies (Mulvaney et al., 2012) to improve medical adherence. Psychologists may be valuable in helping to coordinate the medical, mental health, and community care of children with chronic health conditions and their families. Psychologists bring a consultant perspective to the primary care practice, offering expertise in understanding how human factors affect health care quality, research methods, and system design. In this way, psychologists provide substantial “value added” beyond what other behavioral health providers can offer.

Opportunities for Research

There is emerging evidence that greater integration in health care leads to increased engagement of patients in mental health care, better outcomes, and greater medical cost offsets (Collins et al., 2010). An important role for psychologists in the changing health care environment is in conceptualizing and carrying out outcomes-based research. One result of health care reform is growing awareness of the need to incorporate interprofessional, medical-home, and integrated-care concepts into more clinically relevant research (Rozenky & Janicke, 2012). Evidence-based assessment and treatment studies conducted in real-world pediatric primary care settings that have more direct applicability to clinical practice have been encouraged (Roberts, Canter, & Odar, 2012). The new scholarly journal *Clinical Practice in Pediatric Psychology*, which aims to emphasize work that incorporates evidence from the science base while providing a forum for clinicians to report on their activities and inform future research activities, is a promising outlet for disseminating research on pediatric primary care services.

To this end, there are at least these three research priorities for pediatric psychologists:

1. Demonstration of the efficacy and effectiveness of interventions in pediatric primary care. There have been a few randomized controlled trials that have demonstrated the efficacy of primary care interventions compared with other service systems in pediatrics (Bower, Garralda, Kramer, Harrington, & Sibbald, 2001). Outcome studies have generally shown increased access to mental health providers and increased communication between mental health and medical providers in primary care (Campo et al., 2005; Connor et al., 2006; Sobel et al., 2001). Early evidence of efficacy demonstrates that children are much more likely to receive mental health services in primary care than if they are referred out for behavioral services (Kolko et al., 2012). With respect to health behavior change, a growing literature on empirically supported treatments in pediatric psychology exists, but these treatments have yet to be transported into primary care settings. For example, Channon et al. (2007) used a randomized controlled trial to demonstrate that motivational interviewing was effective in facilitating positive behavioral changes in teenagers with Type I diabetes and subsequent improvement in glycemic control. Researchers face challenges to demonstrating efficacy: There are few agreed-upon methods for assessing proximal outcomes, and it is difficult to prove the impact of services because many important health outcomes are distant in children (e.g., cardiac disease).

2. Documentation of quality of services. Program evaluation and quality improvement studies in the primary care setting are vital to providing documentation of quality of services and are increasingly tied to reimbursement (Unützer et al., 2012). Quality indicators include such things as increased identification of and access to services and patient satisfaction (Walders et al., 2000). What do families and collaborating physicians say about important features such as convenience, time to first appointment,

stigma/comfort, communication, and perceived benefit of primary care services? Research evaluating patient and provider satisfaction and effectiveness of mental health services in pediatric primary care has been largely supportive of co-located and integrated models of care.

3. Increase focus on cost offset of treatments in primary care settings. There is a critical need to document the cost offset of psychological treatments provided in pediatric primary care settings for mental health conditions (e.g., ADHD, depression) as well as for chronic health conditions (e.g., obesity, sleep disorders, asthma, headaches, and diabetes). Recently, for example, Volkenant and Hosterman (2012) presented preliminary data on pediatric psychology interventions in primary care clinics with youth who presented in crisis, mostly with suicidal concerns. In 6 months, these pediatric psychologists intervened with 17 youths who previously would have been sent to an emergency room for assessment. After primary care assessment and interventions, only one teen required more expensive emergency room services and eventual hospitalization. All of the others obtained follow-up services in the primary care clinic. The cost savings impressed hospital administrators and led to increased support for the pediatric psychologists' services in the primary care clinic.

Economic Factors

A major impediment to the development, implementation, and sustainability of pediatric primary care psychology programs is financing. Lack of adequate payment mechanisms for collaborative care is perhaps the greatest obstacle to implementation of co-located integrated pediatric primary care models (Tynan, Woods, & Carpenter, 2013). Coding and billing are complex issues and are particularly troublesome for behavioral health services in primary care. While billing and reimbursement requirements and patterns will likely change in coming years with implementation of the Affordable Care Act, service reimbursement by third-party payors is typically driven by diagnostic codes and procedures, and less formal behavioral health services delivered in integrated settings have not yet been assigned reimbursable codes. Moreover, reimbursement rates for interventions (e.g., psychotherapy) are usually the same for master's-level clinicians and doctoral psychologists despite recognition of their differing levels of training and expertise. Payers impose restrictions on payment for services represented by various codes; for example, the "Health and Behavior" codes are not always paid, or paid adequately, although they were designed to cover the psychosocial care of children with physical health conditions.

Another barrier is that reimbursement is generally not available for telephone, e-mail, or electronically mediated care, for administration and interpretation of health risk assessments, or for collaboration between providers. Collaboration often requires joint and/or sequential appointments for the child/family with the pediatrician and the psychologist—but some payers do not pay for two services performed on the same date with the same diagnosis. Parent education groups are among the most effective evidence-based treatments for disruptive behavior disorders, and yet there is no mechanism

available to pay a psychologist to run such groups in a pediatric practice. Activities such as consultation and teaching, screening, prevention, and care coordination are even more challenging to fund. Payment may be denied because services are provided for conditions that do not meet diagnostic criteria for a mental disorder. These problems with adequate payment for behavioral health care face PPCPs as well as psychologists: PPCPs frequently are not paid for visits associated with mental health or behavioral concerns because they are not recognized as behavioral specialists by Medicaid or third-party payors; and payment is not available for preventive or family-based services. Other economic challenges have been described, including increased billing paperwork for office staff, increased demand for clinic space, and long-term salary sustainability (Williams et al., 2006).

The American Academy of Child and Adolescent Psychiatry Committee on Health Care Access and Economics and the American Academy of Pediatrics Task Force on Mental Health (2009) created a joint position paper to try to improve the mental health and wellness of children by reducing administrative and financial barriers to access and collaboration. They outlined recommendations relevant to psychologists and behavioral specialists for reimbursement for the range of services and activities necessary to provide adequate services in the primary care setting to address the mental health needs of children and adolescents (e.g., support payment for standardized screening for mental health problems, sessions with parents when the child is not present, non-face-to-face interventions such as communication with teachers, telemedicine, and team conferencing). In addition to the above recommendations, health and behavior codes are likely to be a key payment mechanism for working with medically ill children and families and could be instrumental to the financial sustainability of integrated primary care psychology practice.

Integrated care models in adult settings have demonstrated economic benefits including reduced medical costs, greater patient satisfaction, lower provider turnover, and increased productivity (Blount et al., 2007), but data about comparable cost savings in pediatric settings are less readily available (Rozensky & Janicke, 2012). Further research will be needed to demonstrate the necessity and cost-effectiveness of primary care interventions in order to justify payment. Under the Affordable Care Act, an emphasis on the value of behavioral health services within medical homes for Medicaid and Federally Qualified Health Centers provides some hope for potentially higher reimbursement rates for some activities, but models are still in development.

Concluding Remarks

Despite early initiatives in pediatric primary care beginning in the 1960s, the evolution of behavioral health services in primary care for children has been slow, with efforts driven more by pediatricians than by psychologists (Perrin, 1999). We are more aware than ever that too many children have unmet mental health needs and that families struggle with managing children's health-related behaviors. This recog-

nition has generated interest in developing models to meet demands. Alternative approaches that place psychologists as health care partners with physicians in the primary care setting and that can demonstrate effectiveness and economic viability are needed. Electronic technology, practice consolidation and coordination, and personalized medicine will likely increase the pace of change in health services for primary care, including services by psychologists.

Where will psychologists fit into the future of pediatric primary care? Psychologists possess a unique skill set and knowledge base for advancing the development of innovative and responsive evidence-based clinical screening and intervention programs in pediatric primary care settings. Furthermore, pediatric psychologists bring a knowledge base of child and adolescent medical conditions and the biopsychosocial model that is necessary for effective participation on an integrated care team. They are equipped to provide consultation on complex cases and supervise master's-level therapists. Moreover, psychologists are able to guide quality improvement and outcomes research and foster an educational atmosphere that encourages intraprofessional practice and cross-training. In medical settings, psychologists who demonstrate both clinical *and* scientific acumen will find that their contributions are highly valued.

Conversations about integrated systems of care for children are taking place with intensity as the nation braces for the next wave of health care reform. At the national, state, and local levels, there is a great need for psychologists to be present in those discussions to advocate for children's programs. In the past, psychologists have been underrepresented in important policy discussions. For example, involvement by psychologists on the American Academy of Pediatrics Task Force on Mental Health was minimal at best, whereas psychiatrist input was strong. Psychologists' opinions are generally highly valued by pediatric providers, but there appear to be few psychologists who make themselves available for participation in key policy discussions, such as those taking place in important arenas including the Centers for Medicare and Medicaid Services. To remedy this lack of input, professional organizations of child and pediatric psychologists at the state and national levels need to mobilize efforts, something that several divisions of APA (including Divisions 37, 53, and 54) are already undertaking. Moreover, psychologists with knowledge and experience are encouraged to become more active in pediatric societies such as the American Academy of Pediatrics and the Society for Developmental and Behavioral Pediatrics, where they will have an opportunity to inform thought leaders and champions of child developmental and behavioral health. Psychologists' voices must be heard in advocacy arenas, or there will be limited opportunities for meaningful participation in integrated systems of care for children.

A comprehensive system of care that includes a focus on primary care, on prevention, and on early intervention is critical to address the unmet health needs of children and adolescents. Such a system is not likely to be achieved by merely training future psychologists to provide direct traditional clinical services; rather, it will require training models that "emphasize organizing services, using evidence-based

practice, and working with other professionals in prevention, consultation, education and other areas in addition to direct treatment” (Tolan & Dodge, 2005, p. 611). For the sake of children in the future, psychologists are needed to help fulfill this mandate. After all, psychology is the basic science of behavior change, and psychologists should be taking a lead role in guiding the efforts of other health care professionals in this work.

REFERENCES

- American Academy of Child and Adolescent Psychiatry Committee on Health Care Access and Economics, & American Academy of Pediatrics Task Force on Mental Health. (2009). Improving mental health services in primary care: Reducing administrative and financial barriers to access and collaboration. *Pediatrics*, 123, 1248–1251. doi:10.1542/peds.2009-0048
- American Academy of Pediatrics, Council on Pediatric Practice. (1967). Pediatric records and a “medical home.” In *Standards of child care* (pp. 77–79). Evanston, IL: American Academy of Pediatrics.
- Anda, R. F., Brown, D. W., Felitti, V. J., Bremner, J. D., Dube, S. R., & Giles, W. H. (2007). Adverse childhood experiences and prescribed psychotropic medications in adults. *American Journal of Preventive Medicine*, 32, 389–394. doi:10.1016/j.amepre.2007.01.005
- Barlow, S. E., & the Expert Committee. (2007). Expert Committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: Summary report. *Pediatrics*, 120, S164–S192. doi:10.1542/peds.2007-2329C
- Barlow, J., & Parsons, J. (2003). Group-based parent training programs for improving emotional and behavioral adjustment in 0–3 year old children. *Cochrane Database of Systematic Reviews*, 2003(2), 1–30. doi:10.1002/14651858.CD003680
- Berkovits, M. D., O’Brien, K. A., Carter, C. G., & Eyberg, S. M. (2010). Early identification and intervention for behavior problems in primary care: A comparison of two abbreviated versions of parent–child interaction therapy. *Behavior Therapy*, 41, 375–387. doi:10.1016/j.beth.2009.11.002
- Berkowitz, R. I., Rukstalis, M. R., Bishop-Gilyard, C. T., Moore, R. H., Gehrman, C. A., Xanthopoulos, M. S., . . . Wadden, T. A. (2013). Treatment of adolescent obesity comparing self-guided and group lifestyle modification programs: A potential model for primary care. *Journal of Pediatric Psychology*, 38, 978–986. doi:10.1093/jpepsy/jst035
- Black, M. M. (2002). Society of Pediatric Psychology presidential address: Opportunities for health promotion in primary care. *Journal of Pediatric Psychology*, 27, 637–646. doi:10.1093/jpepsy/27.7.637
- Bloom, B., Cohen, R. A., & Freeman, G. (2010). *Summary health statistics for U.S. children: National Health Interview Survey, 2009* (Vital and Health Statistics, Series 10, No. 247). Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics.
- Blount, A., Schoenbaum, M., Kathol, R., Rollman, B., Thomas, M., O’Donohue, W., & Peek, C. (2007). The economics of behavioral health services in medical settings: A summary of the evidence. *Professional Psychology: Research and Practice*, 38, 290–297. doi:10.1037/0735-7028.38.3.290
- Bower, P., Garralda, E., Kramer, T., Harrington, R., & Sibbald, B. (2001). The treatment of child and adolescent mental health problems in primary care: A systematic review. *Family Practice*, 18, 373–382. doi:10.1093/fampra/18.4.373
- Briggs, R. D., Stettler, E. M., Silver, E. J., Schrag, R. D. A., Nayak, M., Chinitz, S., & Racine, A. D. (2012). Social-emotional screening for infants and toddlers in primary care. *Pediatrics*, 129, e377–e384. doi:10.1542/peds.2010-2211
- Briggs-Gowan, M. J., Owens, P. L., Schwab-Stone, M. E., Leventhal, J. M., Leaf, P. J., & Horwitz, S. M. (2003). Persistence of psychiatric disorders in pediatric settings. *Journal of the American Academy of Child & Adolescent Psychiatry*, 42, 1360–1369. doi:10.1097/01.CHI.0000084834.67701.8a
- Campo, J. V., Shafer, S., Strohm, J., Lucas, A., Cassesse, C. G., Shaeffer, D., & Altman, H. (2005). Pediatric behavioral health in primary care: A collaborative approach. *Journal of the American Psychiatric Nurses Association*, 11, 276–282. doi:10.1177/1078390305282404
- Channon, S. J., Huws-Thomas, M. V., Rollnick, S., Hood, K., Cannings-John, R. L., Rogers, C., & Gregory, J. W. (2007). A multicenter randomized controlled trial of motivational interviewing in teenagers with diabetes. *Diabetes Care*, 30, 1390–1395. doi:10.2337/dc06-2260
- Christophersen, E. R. (1982). Incorporating behavioral pediatrics into primary care. *Pediatric Clinics of North America*, 29, 261–296.
- Clay, D. L., & Stern, M. (2005). Pediatric psychology in primary care. In L. C. James & R. A. Folen (Eds.), *The primary care consultant: The next frontier for psychologists in hospitals and clinics* (pp. 155–172). Washington, DC: American Psychological Association.
- Collins, C., Hewson, D. L., Munger, R., & Wade, T. (2010). *Evolving models of behavioral health integration in primary care*. New York, NY: Millbank Memorial Fund. doi:10.1599/EvolvingCare2010
- Connor, D. F., McLaughlin, T. J., Jeffers-Terry, M., O’Brien, W. H., Stille, C. J., Young, L. M., & Antonelli, R. C. (2006). Targeted child psychiatric services: A new model of pediatric primary clinician–child psychiatry collaborative care. *Clinical Pediatrics*, 45, 423–434. doi:10.1177/0009922806289617
- Drotar, D. (1995). *Consulting with pediatricians: Psychological perspectives for research and practice*. New York, NY: Plenum Press.
- Drotar, D., Spirito, A., & Stancin, T. (2003). Professional roles and practice patterns. In M. C. Roberts (Ed.), *Handbook of pediatric psychology* (3rd ed., pp. 50–66). New York, NY: Guilford Press.
- Drotar, D., Stancin, T., Dworkin, P. H., Sices, L., & Wood, S. (2008). Selecting developmental surveillance and screening tools. *Pediatrics in Review*, 29, e52–e58. doi:10.1542/pir.29-10-e52
- DuPaul, G. J., Power, T. J., & Shapiro, E. S. (2009). Schools and integration/reintegration into schools. In M. C. Roberts & R. G. Steele (Eds.), *Handbook of pediatric psychology* (4th ed., pp. 689–702). New York, NY: Guilford Press.
- Foy, J. M., & the American Academy of Pediatrics. (2010). Enhancing pediatric mental health care: Algorithms for primary care. *Pediatrics*, 125(Suppl. 3), S109–S125. doi:10.1542/peds.2010-0788F
- Guevara, J. P., Greenbaum, P. E., Shera, D., Bauer, L., & Schwartz, D. F. (2009). Survey of mental health consultation and referral among primary care pediatricians. *Academic Pediatrics*, 9, 123–127. doi:10.1016/j.acap.2008.12.008
- Hagan, J. F., Shaw, J. S., & Duncan, P. M. (Eds.). (2008). *Bright futures: Guidelines for health supervision of infants, children, and adolescents* (3rd ed.). Elk Grove Village, IL: American Academy of Pediatrics.
- Halfon, N., Stevens, G. D., Larson, K., & Olson, L. M. (2011). Duration of a well-child visit: Association with content, family-centeredness, and satisfaction. *Pediatrics*, 128, 657–664. doi:10.1542/peds.2011-0586
- Kirkpatrick, H., Vogel, M. E., & Nyman, S. (2011, Spring). 5 changes psychologists must make to be successful in integrated primary care. *The Register Report*. Retrieved from the National Register of Health Service Psychologists website: http://www.nationalregister.org/trr_spr_ing11_kirkpatrick.html
- Kolko, D. J., Campo, J. V., Kilbourne, A. M., & Kelleher, K. (2012). Doctor-office collaborative care for pediatric behavior problems: A preliminary model. *Archives of Pediatrics & Adolescent Medicine*, 166, 224–231. doi:10.1001/archpediatrics.2011.201
- Kuhlthau, K., Jellinek, M., White, G., VanCleave, J., Simons, J., & Murphy, M. (2011). Increases in behavioral health screening in pediatric care for Massachusetts Medicaid patients. *Archives of Pediatrics & Adolescent Medicine*, 165, 660–664. doi:10.1001/archpediatrics.2011.18
- Lavigne, J. V., LeBailly, S. A., Gouze, K. R., Cicchetti, C., Jessup, B. W., Arend, R., . . . Binns, H. J. (2008). Treating oppositional defiant disorder in primary care: A comparison of three models. *Journal of Pediatric Psychology*, 33, 449–461. doi:10.1093/jpepsy/jsm074
- Levy, S., Hill, E., Sheldrick, C., & Perrin, E. (2013, September). *Evolving models of co-located collaborative care*. Poster presented at the meeting of the Society for Developmental and Behavioral Pediatrics, Baltimore MD.
- Lieberman, A., Adalist-Estrin, A., Erinle, O., & Sloan, N. (2006). On-site mental health care: A route to improving access to mental health services in an inner-city, adolescent medicine clinic. *Child: Care, Health and Development*, 32, 407–413. doi:10.1111/j.1365-2214.2006.00620.x

- McDaniel, S. H., Grus, C. L., Cubic, B. A., Hunter, C. L., Kearney, L. K., Schuman, C. C., . . . Johnson, S. B. (2014). Competencies for psychology practice in primary care. *American Psychologist*, 69, 409–429. doi:10.1037/a0036072
- McMenamy, J. M., & Perrin, E. C. (2004). Filling the GAPS: Evaluation of a primary care intervention for children with chronic health conditions. *Ambulatory Pediatrics*, 4, 249–256. doi:10.1367/A03-082R.1
- McMenamy, J., Sheldrick, R. C., & Perrin, E. C. (2011). Early intervention in pediatric offices for emerging disruptive behavior in toddlers. *Journal of Pediatric Health Care*, 25, 77–86. doi:10.1016/j.pedhc.2009.08.008
- McQuaid, E. L., & Abramson, N. W. (2009). Pediatric asthma. In M. C. Roberts & R. G. Steele (Eds.), *Handbook of pediatric psychology* (4th ed., pp. 254–270). New York, NY: Guilford Press.
- Meltzer, L. J. (2013, November). Making sleep a priority in pediatric primary care. *CYF News*. Retrieved from <http://www.apa.org/pi/families/resources/primary-care/sleep.aspx>
- Mesibov, G. B. (1984). Evolution of pediatric psychology: Historical roots to future trends. *Journal of Pediatric Psychology*, 9, 3–11. doi:10.1093/jpepsy/9.1.3
- Mulvaney, S. A., Rothman, R. L., Dietrich, M. S., Wallston, K. A., Grove, E., Elasy, T. A., & Johnson, K. B. (2012). Using mobile phones to measure adolescent diabetes adherence. *Health Psychology*, 31, 43–50. doi:10.1037/a0025543
- Ozonoff, S., Goodlin-Jones, B. L., & Solomon, M. (2005). Evidence-based assessment of autism spectrum disorders in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, 34, 523–540. doi:10.1207/s15374424jccp3403_8
- Palermo, T., Janicke, D., McQuaid, E., Mullins, L., Robins, P., & Wu, Y. (in press). Proposed competency model for pediatric psychology education and training: Report developed by the Task Force on Competencies and Best Training Practices in Pediatric Psychology. *Journal of Pediatric Psychology*.
- Palermo, T. M., & Wilson, A. C. (2009). eHealth applications in pediatric psychology. In M. C. Roberts & R. G. Steele (Eds.), *Handbook of pediatric psychology* (4th ed., pp. 227–237). New York, NY: Guilford Press.
- Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 124 Stat. 119 (2010). Retrieved from <http://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf>
- Pelham, W. E., Jr., Fabiano, G. A., & Massetti, G. M. (2005). Evidence-based assessment of attention deficit hyperactivity disorder in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, 34, 449–476. doi:10.1207/s15374424jccp3403_5
- Perrin, E. C. (1999). Collaboration in primary care: A pediatrician's view. *Journal of Pediatric Psychology*, 24, 453–458. doi:10.1093/jpepsy/24.5.453
- Perrin, E. C., & Sheldrick, R. C. (2012). The challenge of mental health care in pediatrics. *Archives of Pediatrics & Adolescent Medicine*, 166, 287–288. doi:10.1001/archpediatrics.2011.202
- Perrin, E. C., Sheldrick, R. C., McMenamy, J. M., Henson, B. S., & Carter, A. S. (2014). Improving parenting skills for families of young children in pediatric settings: A randomized clinical trial. *JAMA Pediatrics*, 168, 16–24. doi:10.1001/jamapediatrics.2013.2919
- Pisani, A. R., LeRoux, P., & Siegel, D. M. (2011). Educating residents in behavioral health care and collaboration: Integrated clinical training of pediatric residents and psychology fellows. *Academic Medicine*, 86, 166–173. doi:10.1097/ACM.0b013e318204fd94
- Radecki, L., Sand-Loud, N., O'Connor, K., Sharp, S., & Olson, L. (2011). Trends in the use of standardized tools for developmental screening in early childhood, 2002–2009. *Pediatrics*, 128, 14–19. doi:10.1542/peds.2010-2180
- Roberts, M. C., Canter, K. S., & Odar, C. C. (2012). Commentary: A call to action to secure the future of pediatric psychology—Resonating to the points of Rozensky and Janicke (2012). *Journal of Pediatric Psychology*, 37, 369–375. doi:10.1093/jpepsy/jss053
- Roberts, M., & Wright, L. (1982). The role of the pediatric psychologist as consultant to pediatricians. In J. Tuma (Ed.), *Handbook for the practice of pediatric psychology* (pp. 251–289). New York, NY: Wiley-Interscience.
- Routh, D. K. (1975). The short history of pediatric psychology. *Journal of Clinical Child Psychology*, 4, 6–8. doi:10.1080/15374417509532658
- Routh, D. K., Schroeder, C. S., & Koocher, G. P. (1983). Psychology and primary health care for children. *American Psychologist*, 38, 95–98. doi:10.1037/0003-066X.38.1.95
- Rozensky, R. H., & Janicke, D. M. (2012). Commentary: Healthcare reform and psychology's workforce: Preparing for the future of pediatric psychology. *Journal of Pediatric Psychology*, 37, 359–368. doi:10.1093/jpepsy/jsr111
- Sanders, M. R. (1999). The Triple P-Positive Parenting Program: Towards an empirically validated multilevel parenting and family support strategy for the prevention of behavior and emotional problems in children. *Clinical Child and Family Psychology Review*, 2, 71–90. doi:10.1023/A:1021843613840
- Sarvet, B., Gold, J., Bostic, J. Q., Masek, B. J., Prince, J. B., Jeffers-Terry, M., . . . Straus, J. H. (2010). Improving access to mental health care for children: The Massachusetts Child Psychiatry Access Project. *Pediatrics*, 126, 1191–1200. doi:10.1542/peds.2009-1340
- Schroeder, C. S. (1979). Psychologists in a private pediatric practice. *Journal of Pediatric Psychology*, 4, 5–18. doi:10.1093/jpepsy/4.1.5
- Schroeder, C. S. (2004). Reaching beyond the guild. In B. W. Wildman & T. Stancin (Eds.), *New directions for research and treatment of pediatric psychosocial problems in primary care* (pp. 1–32). Westport, CT: Greenwood.
- Seid, M., Oipari-Arrigan, L., & Sobo, E. J. (2009). Families' interactions with the health care system: Implications for pediatric psychology. In M. C. Roberts & R. G. Steele (Eds.), *Handbook of pediatric psychology* (4th ed., pp. 703–718). New York, NY: Guilford Press.
- Sheldrick, R. C., Mattern, K., & Perrin, E. C. (2012). Pediatricians' perceptions of an off-site collaboration with child psychiatry. *Clinical Pediatrics*, 51, 546–550. doi:10.1177/0009922812444601
- Smith, E. E., Rome, L. P., & Freedheim, D. K. (1967). The clinical psychologist in the pediatric office. *Journal of Pediatric Psychology*, 71, 48–51. doi:10.1016/S0022-3476(67)80229-4
- Sobel, A. B., Roberts, M. C., Rayfield, A. D., Barnard, M. U., & Rapoff, M. D. (2001). Evaluating outpatient pediatric psychology services in a primary care setting. *Journal of Pediatric Psychology*, 26, 395–405. doi:10.1093/jpepsy/26.7.395
- Spirito, A., Brown, R. T., D'Angelo, E., Delamater, A., Rodrique, J., & Siegel, L. (2003). Society of Pediatric Psychology Task Force Report: Recommendations for the training of pediatric psychologists. *Journal of Pediatric Psychology*, 28, 85–98. doi:10.1093/jpepsy/28.2.85
- Stancin, T. (1999). Special issue on pediatric mental health services in primary care settings [Introduction]. *Journal of Pediatric Psychology*, 24, 367–368.
- Stancin, T. (2005). Mental health services for children in pediatric primary care settings. In R. G. Steele Jr & M. C. Roberts (Eds.), *Handbook of mental health services for children, adolescents, and families* (pp. 85–101). New York, NY: Kluwer Academic/Plenum. doi:10.1007/0-387-23864-6_6
- Stancin, T., Perrin, E. C., & Ramirez, L. (2009). Pediatric psychology and primary care. In M. C. Roberts & R. G. Steele (Eds.), *Handbook of pediatric psychology* (4th ed., pp. 630–646). New York, NY: Guilford Press.
- Steele, R. G., & Cushing, C. C. (2013, November). Evidence-based obesity management for primary care. *CYF News*. Retrieved from <http://www.apa.org/pi/families/resources/primary-care/obesity-management.aspx>
- Stein, R. E. K., Horwitz, S. M., Storfer-Isser, A., Heneghan, A., Olson, L., & Hoagwood, K. (2008). Do pediatricians think they are responsible for identification and management of child mental health problems? Results of the APP Periodic Survey. *Ambulatory Pediatrics*, 8, 11–17. doi:10.1016/j.ambp.2007.10.006
- Sturm, L. A., & Stancin, T. (2013, November). Competencies for pediatric psychology practice in primary care settings: A work in progress. *CYF News*. Retrieved from <http://www.apa.org/pi/families/resources/primary-care/competencies.aspx>
- Tolan, P. H., & Dodge, K. A. (2005). Children's mental health as a primary care and concern: A system for comprehensive support and service. *American Psychologist*, 60, 601–614. doi:10.1037/0003-066X.60.6.601
- Tynan, W. D., Woods, K., & Carpenter, J. (2013, November). Integrating child psychology services in primary care. *CYF News*. Retrieved from

- <http://www.apa.org/pi/families/resources/primary-care/integrating-services.aspx>
- Unützer, J., Chan, Y., Hafer, E., Knaster, J., Shields, A., Powers, D., & Veith, R. C. (2012). Quality improvement with pay-for-performance incentives in integrated behavioral health care. *American Journal of Public Health, 102*, e41–e45. doi:10.2105/AJPH.2011.300555
- U.S. Department of Health and Human Services. (2009). *The National Survey of Children's Health 2007*. Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.
- Volkenant, K., & Hosterman, S. (2012, April). *Integrating pediatric psychology into primary care: A pilot project*. Paper presented at the Pediatric Psychology Symposium at the Midwest Regional Conference on Pediatric Psychology, Milwaukee, WI.
- Wade, S. L., Stancin, T., Kirkwood, M., Brown, T. M., McMullen, K. M., & Taylor, H. G. (in press). Counselor-assisted problem solving (CAPS) improves behavioral outcomes in older adolescents with moderate to severe TBI. *Journal of Head Trauma Rehabilitation*.
- Walders, N., Stancin, T., Riekers, K., Whitwell, J., Palermo, T., & Quintus, K. (2000, March). *Brief behavioral assessments in a pediatric primary care clinic: Parental views at long-term follow-up*. Poster presented at the Millennium Conference of the Great Lakes Society of Pediatric Psychology, Cleveland, Ohio.
- Wildman, B. W., & Stancin, T. (Eds.). (2004). *New directions for research and treatment of pediatric psychosocial problems in primary care*. Westport, CT: Greenwood.
- Williams, J., Shore, S. E., & Foy, J. M. (2006). Co-location of mental health professionals in primary care settings: Three North Carolina models. *Clinical Pediatrics, 45*, 537–543. doi:10.1177/0009922806290608
- Wilson, J. L. (1964). Growth and development of pediatrics: Presidential address—1964. *Journal of Pediatrics, 65*(6, Part 2), 984–991. doi: 10.1016/S0022-3476(64)80031-7
- Wysocki, T., Buckloh, L. M., & Greco, P. (2009). The psychological context of diabetes mellitus in youths. In M. C. Roberts & R. G. Steele (Eds.), *Handbook of pediatric psychology* (4th ed., pp. 287–302). New York, NY: Guilford Press.