A Meta-Systems Approach to Evidence-Based Practice for Children and Adolescents

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Improving outcomes for children and adolescents with mental health needs demands a broad meta-systemic orientation to overcome persistent problems in current service systems. Improving outcomes necessitates inclusion of current and emerging evidence about effective practices for the diverse population of youth and their families. Key components of the meta-system for children with emotional or behavioral needs include families, cultural norms and values, and service sectors such as schools, pediatric health centers, specialty mental health systems, juvenile justice systems, child protection services, and substance use treatment systems. We describe each component of the meta-system, noting challenges to the provision of evidence-based practice (EBP) and highlighting ways to optimize outcomes. Our focus is on the inclusion of evidence-based assessment and interventions, including prevention, within a developmentally driven and culturally responsive contextual model. Recommendations for addressing disparities in research funding and essential steps to foster communication and coordination of EBP across settings are provided.

Keywords: evidence-based practice, children, adolescents, families, intervention, treatment

Children's mental health care in the United States is widely recognized as problematic. The gap between clinical care and science persists, with many youths not receiving needed effective care. Children and adolescents (hereinafter called children) receive mental health services across many different service contexts (e.g., schools, child welfare, juvenile justice, health care, substance abuse), but numerous studies document that collectively the need for services outpaces the receipt of services. This article provides an overview of the major contextual and systemic issues—called in our framework the *meta-system*—that influence, and often impede, the provision of evidence-based practice (EBP)[1] for children and their families. It reflects the work of the American Psychological Association (APA) Task Force on Evidence-Based Practice With Children and Adolescents.[2] After a brief background section, we present a meta-systemic framework within which to understand the complexity of the problems affecting delivery of effective care across service sectors and culturally and linguistically diverse populations as well as a range of possible remedies. We discuss challenges to implementation and dissemination within this meta-systems

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[1] We adhere to the definition of evidence-based practice developed in 2005 by the APA Presidential Task Force on Evidence-Based Practice and cited in the APA Policy Statement on Evidence-Based Practice in Psychology adopted by the APA Council of Representatives on August 15, 2005: "Evidence-based practice in psychology (EBPP) is the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences. This definition of EBPP closely parallels the definition of practice adopted by the Institute of Medicine (2001, p. 147) as adapted from Sackett and colleagues (2000). . . . The purpose of EBPP is to promote effective psychological practice and enhance public health by applying empirically supported principles of psychological assessment, case formulation, therapeutic relationship, and intervention" (APA Presidential Task Force on Evidence-Based Practice, 2006, p. 284).

[2] There is some overlap in membership between the APA Task Force on Evidence-Based Practice With Children and Adolescents and the Committee on Evidence-Based Practice of APA Division 53 (Society of Clinical Child and Adolescent Psychology), and the foci of the two groups are consonant in several respects; for example, both emphasize the need to identify and disseminate empirically sound practices for child mental health.

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framework and conclude with a synopsis of selected recommendations from the report of the APA Task Force on Evidence-Based Practice With Children and Adolescents (2008).

In this article, we use the term *meta-system* to refer to the various contexts and environments that surround and influence a child's adaptation and development. The core contexts that typically exert the most direct influence on children include their family; the cultural norms and values of their heritage; their peers; social institutions created to inculcate certain societal values (such as churches or schools); and for children with emotional or behavioral needs, the various systems that society creates to provide services to address these problems. Although all individuals are, to a degree, a product of their immediate ecology and responsive to the influence of different contexts, children, by virtue of their developing status, are especially sensitive to such contexts. Therefore, improving children's health outcomes necessitates attention both to their individual needs and developmental trajectories but also to the meta-systems that influence development. These include the service sectors that provide care. In this article we describe some key components of this meta-system for children's adaptation and development, particularly children with emotional or behavioral needs. These components include the family and the cultural traditions and values that define normal and abnormal development. We then describe the various service sectors or systems that provide interventions to children with mental health needs and their families. We suggest how quality improvements in the form of EBP can be integrated within the different components of the meta-system to improve child health outcomes. We also describe challenges to implementation of EBP given the cultural diversity of the population and the constraints of specific service systems. In the final section, we suggest directions for research and practice to improve the implementation of EBP within the ecologies that surround children and their families.

Background

It is estimated that 10% to 20% of youths (approximately 15 million children in the United States) meet diagnostic criteria for a mental health disorder, and many more are at risk for escalating problems with long-term individual, family, community, and societal implications. Among those with a recognized need, only 20% to 30% receive specialized mental health care (Kataoka, Zhang, & Wells, 2002). The situation is even worse for those youths from low-income families, those in the juvenile justice and child welfare systems, ethnic minority youths, and those with substance abuse problems (Masi & Cooper, 2006). Up to 50% of youths in the child welfare system have mental health problems (Burns et al., 2004), and 70% in the juvenile justice system have a diagnosable mental health disorder (Skowyra & Cocozza, 2006). Latino children are most likely to go without needed mental health care (Health Care Financing & Organization, 2004; Masi & Cooper, 2006). This persistently abysmal state of affairs may be attibutable, in part, to the historical underfunding of children's mental health care. Although children comprise 25% of the U.S. population, only one ninth of health care funding is directed to them (Costello, Egger, & Angold, 2005).

Is EBP a feasible way to help these large and underserved groups of children and narrow this gap between children's mental health care needs and availability and access to effective care? Previously established and emerging examples of EBP emphasize psychometrically sound assessments and evidence-based interventions that are culturally responsive to the communities in which they are implemented. Further, the matching of treatment to needs identified during assessment is considered alongside clinical expertise and contextual and demographic characteristics. A scientifically minded, culturally responsive approach, characterized by continual monitoring of interventions provided, the child and family's response, and events and conditions that impact treatment could contextualize EBP. Although findings support the potential of EBP to meet the mental health needs of these children, systems for assuring that children receive effective and culturally responsive treatment are lacking. As a result, treatments that work are often not provided to those who would benefit the most from them.

A Meta-Systems Perspective

A meta-systems framework is necessary to understand the complexities of children's mental health needs and care and to formulate strategies that foster engagement and collaboration of multiple systems to improve treatment delivery. At the heart of a meta-systems orientation are youth and their families, who are influenced by culturally defined normative developmental processes and by the stressors and resiliencies that characterize each. A key challenge to improving children's outcomes is that developmental pro-

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cesses that characterize children's growth are "moving targets." Therefore, what is effective for assessing social, emotional, or behavioral concerns or for formulating effective evidence-based treatments at one time may not be at another time (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001). In order to understand and evaluate the extent to which children's behavior is sufficiently "off the (developmental) curve" to warrant intervention, considering both risk (vulnerabilities) and resilience (strengths) requires vigilant attention to developmental processes and cultural context. Understanding resilience in a way that reflects and respects cultural differences necessitates considerations of the strengths of children from specific cultural backgrounds (Brody, Murry, Kim, & Brown, 2002). Respect for different cultural contexts, norms, and values is another core component of the meta-system orientation. Traditionally underrepresented groups, such as ethnic and racial minority and lesbian, gay, bisexual, and transgendered (LGBT) youths, are included in this broad public health framework because different developmental trajectories (D'Augelli & Patterson, 2001; Quintana et al., 2006) within particular social and cultural contexts are understood as normative.

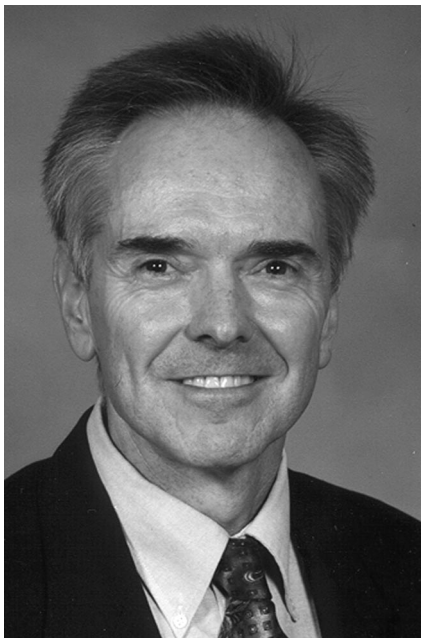
For children with emotional or behavioral problems, numerous service sectors have been created to address their needs; these constitute another component of the meta-system. This group of service sectors encompasses those who deliver care directly, those who develop it, and those who receive it, and ideally there is translation among these constituencies. Care cannot be delivered without close attention to broader care delivery systems (e.g., mental health clinics, schools) and those who decide what services will be provided (e.g., community agencies, state and federal regulatory bodies). As with any complex system, influences are multidirectional within and between levels. For example, the individual, the family, and communities interact with delivery systems; youth crises impact mobilization of services, and services available impact accessibility of care; and screening for youth problems in school and pediatric settings necessitates partnerships with mental health care providers to deliver needed interventions. Overlaying these multiple systems are mechanisms for how care is delivered (e.g., training, ongoing consultation, feedback from recipients, clinical decision making, assessment and monitoring tools). Thus, a major challenge to creating an efficient and organized human services system to provide effective services is the necessity of structuring partnerships among a diverse array of individuals, groups, agencies, and professions.

Because children develop within networks that include different contexts (e.g., as members of their families, schools, peer groups, and communities), to intervene effectively and promote mental health, it is necessary to reach children in their natural settings, formulate interventions that fit into these contexts, and work in partnership with families and local communities. These contextual factors would be important even if access to and availability of interventions were plentiful and nonproblematic. Given constraints in providing EBP to children, contextual factors become even more salient because access, engagement, and delivery involve attention to the contexts that surround children's lives.

We describe below the core components of the meta-system for children, paying particular attention to their impact on children's health and development and to implications for the delivery of EBP to improve children's outcomes.

Families as Social Systems

Families are essential to the growth and development of children and are key determinants of whether a child will receive mental health services (Angold, Costello, & Erkanli, 1999). The extent to which families are engaged in services affects children's outcomes (Tolan, Hanish, McKay, & Dickey, 2002). Families are generally strong advocates for their children and provide a key context for prevention and treatment. In some situations, families may struggle with their own issues and needs (including lack of resources) and offer inconsistent support to their children. Across family types and structures, family characteristics such as cohesion, warmth, consistency, and engagement with the broader community and social world are factors consistently associated with more adaptive family outcomes (Lavigne & Faier-Routman, 1992). Major risks include parental mental illness, social isolation, substance use, domestic violence, and chaotic living circumstances, all of which are associated with negative child outcomes, particularly with respect to externalizing behaviors and disorders. Some evidence-based interventions explicitly support, educate, and engage family members (e.g., Kazdin, 2004). A growing evidence base on family support services is emerging (Hoagwood, 2005). However, even when interventions lack this explicit focus, it is clear that



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families are essential partners and can become active agents of change on behalf of their children (Jensen & Hoagwood, 2008).

School Systems

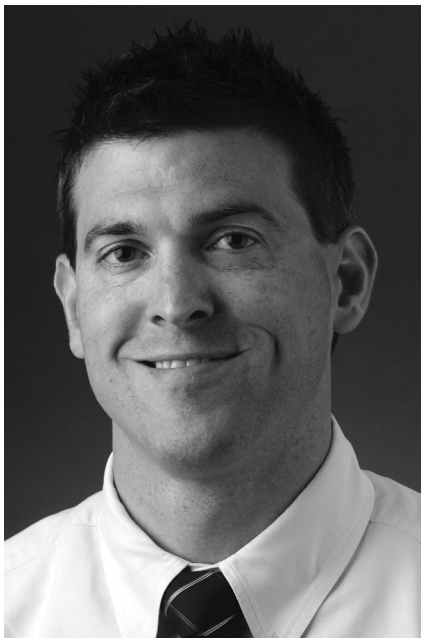
Because children spend a good part of their life in schools and families spend a great deal of time addressing school-related issues, schools have become a central system for addressing children's needs (Kratochwill, 2007). Indeed, schools and their care providers (teachers, administrators, and student support specialists) are somewhat of a captive setting for children, a circumstance that supports both prevention and intervention programs. Traditionally, schools have served the education of children with special needs (and some mental health concerns) through the mechanism of special education. In this model, "categorical" services have been offered for a wide range of handicapping conditions including cognitive, learning, and emotional disabilities. Several issues related to school systems are important. First, schools employ a wide range of service providers who may deliver EBP—psychologists, counselors, social workers, and related service support staff (e.g., speech therapists, nurses). Second, with the passage of the No Child Left Behind Act of 2001 (2002), schools were held accountable for student learning and success and it was clear that instructional practices should be based on "scientific research-based practices." Third, to replace the traditional system of services based on diagnostic categorical services, a model of multitiered interventions is offered. Called *response-to-intervention*, its conceptual framework abandons the traditional "test and place" model and posits that students at risk can be identified and that tiers of interventions (prevention) can address problems (Kratochwill, Clements, & Kalymon, 2007).

Pediatric Health Care Systems

Pediatricians may identify children with and at risk for behavioral health problems who may not receive evidence-based interventions through the mental health or educational systems. Half of "well-care" appointments in primary pediatrics involve behavioral concerns (Cassidy & Jellinek, 1998). Pediatricians may feel unprepared to accurately diagnose behavioral problems and to treat complex problems that may necessitate both pharmacologic and behavioral interventions. For example, health care providers more readily identify and treat attention-deficit/hyperactivity disorder than anxiety, depression, and conduct disorder (Williams, Klinepeter, Palmes, Pulley, & Foy, 2004). Pediatricians are often the first to identify developmental concerns in infants or toddlers, are critical providers in addressing public health issues such as obesity, and may be the first to detect potential precursors of health or behavioral concerns. An estimated 10% to 20% of children have a chronic medical condition and may be at heightened risk for behavioral difficulties associated with their health conditions. These youths—particularly those with life-threatening illnesses and/or conditions requiring intensive treatment regimens necessitating close medical monitoring—and their families receive treatment in tertiary care facilities or associated community-based care satellites. Pediatric psychologists and other behavioral health care professionals are often integrated into multidisciplinary teams for children with specific disorders and for more generic problems such as pain, medical procedures, adherence to medical treatment, family issues, and child anxiety and depression.

Specialty Mental Health Systems

Fragmentation associated with multiple sectors of the child mental health system is unfortunately perhaps the most salient characteristic of the children's mental health system. At least six separate sectors or administrative structures constitute the "system" serving children with psychological problems: the mental health sector; education; the child welfare system, including foster care and adoptive services; substance abuse; general health; and juvenile justice. They are administratively and fiscally segregated in most states and localities. Consequently, one, two, all, or none of these sectors may provide services to a child. Whether a child receives services in one sector or another may be relatively unrelated to need and more associated with family, community (e.g., availability, accessibility), and personal factors (e.g., trust, attributions), thus creating an uneven, asymmetrical, and uncoordinated patchwork of service options. Each may be asymmetrical with a range of programs at varying levels of restrictiveness and inconsistent access or discharge standards. For example, within the mental health sector, programs include inpatient, residential, partial, and day treatment. There are also a variety of outpatient services, including psychotherapy, medication therapies, and case management.



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Juvenile Justice Systems

Mental health problems and behavioral and social dysfunction are prevalent in the juvenile justice system, and there is an extensive evidence base on interventions (U.S. Public Health Service, 2001). These include anger management, social skills, systematic problem-solving in situations that lead to aggression, and interventions in relevant related systems. Unfortunately, many young people do not have access to sufficient intervention to prevent their initial entry into the system. Moreover, in the juvenile justice system the emphasis on incarceration may seem to outweigh intervention and support for change. This has particularly dire consequences for ethnic and racial minority youths—African American youths are placed in detention centers at higher rates than non-Latino Whites and Latinos, and Latinos are placed in detention centers at higher rates than non-Latino Whites (National Council on Crime and Delinquency, 2007). Furthermore, public attitudes, combined with budget constraints, may limit access to evidence-based care. Another factor limiting access is that juvenile justice personnel often lack opportunities to learn evidence-based assessments and treatments (Wasserman et al., 2003).

Child Protection Systems

Child maltreatment—both neglect and abuse—is evident in all regions of the country, necessitating child protective service systems in every state. Children and families are embedded within bureaucracies that include mandated reporters, case managers, foster care placement, and an array of complex regulations and policies. What can be lost in the complexity is attention to the trauma that children experience, both as a part of the identified maltreatment and because of subsequent changes in their living situation (e.g., out-of-home placement, separation from siblings). Evidence-based assessment methods exist for identification of problems and disorders that warrant clinical attention, and evidence-based treatments exist for some common problems and disorders (see, e.g., Cohen, Mannarino, & Deblinger, 2006). However, because child protection systems often operate separately from mental health systems, awareness of these methods and treatments may be limited. The personnel responsible for child protection may have training relevant to their primary work but relatively little exposure to evidence-based assessments or treatments.

Substance Abuse Systems

Alcohol and drug abuse in children often co-occur with mental health problems, and the existence of two separate systems for dealing with them poses a significant challenge. Although many school and community programs have examined evidence-based programs to prevent the development of substance abuse, evidence-based treatment programs for children with co-occurring disorders are still rare. Alcohol and substance use patterns differ across subgroups of youth (Chartier, Hesselbrock, & Hesselbrock, 2009). The approaches necessary (e.g., for American Indian or LGBT youths) may differ from more traditional treatment models (Russell, 2006; Thomason, 2000).

Interconnecting Systems: A Case Illustration

To illustrate the need for systems to connect in the context of culturally responsive EBP, we note the experience of two of the authors (Kimberly Hoagwood and John Weisz) and their colleagues in the Research Network on Youth Mental Health, funded by the MacArthur Foundation[3] (see Network website at www.childsteps.org). A primary goal of the network is to improve mental health care for children by bridging the gap between what research shows is effective and what is practiced in everyday clinical care. The network engages in studies focused on organizations within which child mental health care is provided, the family organizations that advocate for care, and the professionals who provide the care. Another part of the network's agenda is research involving randomized effectiveness trials testing EBP in child mental health outpatient service contexts.

In the network's initial effectiveness trial (Research Network on Youth Mental Health, 2003), the systems perspective became quite salient very early on as evidence-based treatments for anxiety, depression, and conduct problems were brought into outpatient care settings serving a highly diverse clientele in Massachusetts and Hawaii. From

[3] Members of the Research Network on Youth Mental Health are Bruce Chorpita, Ann Garland, Robert Gibbons, Charles Glisson, Evelyn Polk Green, Kimberly Hoagwood, Kelly Kelleher, John Landsverk, Stephen Mayberg, Jeanne Miranda, Lawrence Palinkas, Sonja Schoenwald, and John Weisz (principal investigator and network director). Primary support for the network and its research is provided by the John D. and Catherine T. MacArthur Foundation, with additional support for research in the child welfare system provided by the Annie E. Casey Foundation and Casey Family Programs.

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the beginning, it appeared that building a relationship with family members, assessing what they were seeking from mental health services (in addition to what our standardized diagnostic interviews showed), and regularly taking stock of their perspectives on how treatment was going helped build and sustain their engagement in treatment while providing critical information for those who provided the clinical care. Network members learned that schools were critical partners in treatment, in part because information on a child's school functioning told them a lot about how treatment was working and in part because so much of outpatient care has moved onto school grounds, with clinics now placing staff in schools for much of their work week. Pediatric care played an important role in early identification of child problems and in referral for mental health care. In addition, the children who received outpatient care in the network project often had prior or concurrent involvement with the juvenile justice, child welfare, or substance use sectors, such that care—evidence-based or not—needed to be coordinated with events and services in those sectors.

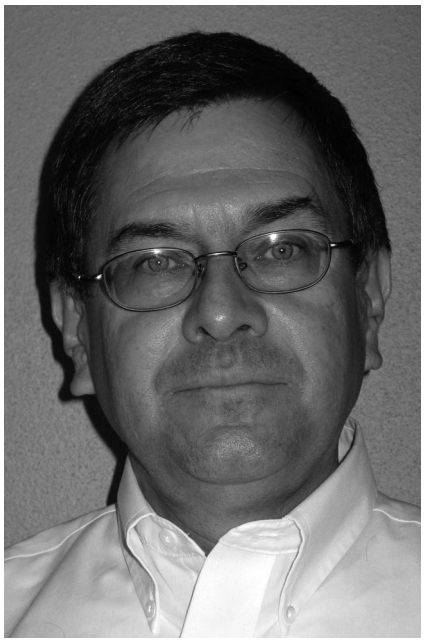
In the network's current effectiveness trial in Maine (Research Network on Youth Mental Health, 2007), integration of multiple systems is critical in setting the stage for the use of evidence-based practices for anxiety, depression, posttraumatic symptoms, and conduct problems with children from the child welfare system who are referred to outpatient mental health clinics. To connect with and support family members in this process, the network trained clinic staff in family engagement practices and arranged for families to have trained Family Partners, individuals experienced in the mental health and child welfare systems to help families navigate those systems and understand their options. With much of the care focused on outpatient clinics and delivered by their staff, all participating clinics have completed organizational assessments, with feedback from an organizational consultant. Given the need for close cooperation across sectors (especially the child mental health system and the child welfare system), a cross-sector committee structure has been developed, and the organizational consultant participates in the meetings. From the network's perspective, this committee structure, plus the work of Family Partners, plus the interaction between outpatient clinicians and children's caseworkers, and their outreach to juvenile justice and substance use colleagues where relevant, helps to ensure that multiple systems interact in ways that facilitate rather than undermine the implementation of EBP with children and their families.

Major Components of Evidence-Based Practices for Children

Successful dissemination of EBP across systems requires consideration of the major components of practice implementation. A large and ever-expanding scientific literature documents the existence of two major elements of EBP: psychometrically sound assessments and evidence-based interventions. Assessment is required for accurate identification of children's problems and disorders, ongoing monitoring of response to interventions, and evaluation of outcomes. Evidence-based interventions are required if practitioners are to draw on clinical care procedures that have track records—that is, procedures shown to ameliorate problems or symptoms or to otherwise bolster children's adaptation or well-being. Both areas rely on a scientifically minded approach that uses knowledge of the causes and correlates of a clinical problem, skills and strategies that have proved beneficial for that problem, models of how symptoms or characteristics of the problem typically change, an understanding of and appreciation for cultural context, and a dedication to constant observation and inquiry. Integration of psychometrically sound assessments and evidence-based interventions, use of existing literature to guide selection of the most appropriate strategies, and adoption of a scientifically minded approach to implementation characterize an evidence-based orientation to practice. This orientation is illustrated in the case example provided earlier.

Evidence-Based Assessments

The long history of research on assessment has generated an extensive collection of measures for informing, guiding, and evaluating the effects of prevention and intervention for children (see Meyer et al., 2001, for a review). At the beginning of care, assessment identifies problems and symptoms to appropriately diagnose and clarify the focus of treatment, matching the condition with the intervention. Assessment should include recognition of strengths, problems, and personal, family, and community resources as well as attention to environmental, cultural, and system factors. For example, practitioners can enhance intervention planning for an individual child by learning the antecedents and consequences of a particular problem behavior,



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the cultural patterning and meaning of the behavior, and whether it occurs in the presence of one parent but not the other or in one context (e.g., school) but not another (e.g., home).

Once intervention has begun, assessment at regular intervals can gauge the response to the intervention, inform supervision, guide adjustments in strategy, and inform decisions about treatment duration. Posttreatment assessment after the intervention is completed, with subsequent follow-up assessment, determines longer term impact. Culturally responsive measures of symptoms, disorders, problems, and real-life functioning (e.g., academic, social) across multiple informants (e.g., children, parents, teachers, peers) and settings (e.g., home, school) are important.

Evidence-Based Interventions

Research over several decades has documented the beneficial effects of a broad range of interventions for children, including prevention programs to reduce the likelihood of youth problems and disorders and intervention programs to ameliorate problems and disorders. Systematic narrative reviews based on panels of experts identify interventions that pass standards of acceptability and effectiveness (Cooper, 1998). In meta-analysis, findings are pooled and their effects averaged across multiple studies by using effect sizes (postintervention difference between the intervention group and the control group, divided by the standard deviation of the outcome measure). Meta-analysis has been applied to group randomized controlled trials (Glass, McGaw, & Smith, 1981) and single-case research (Parker & Hagan-Burke, 2007).

Several narrative reviews and meta-analyses have shown that prevention programs for young people can produce significant benefit by reducing later social, behavioral, academic, and psychological problems. A cost analysis by Aos, Phipps, Barnoski, and Lieb (2001) found significant cost savings through implementation of prevention programs. Researchers have designed some of the specific programs to promote a broad array of positive outcomes; these are sometimes called *health promotion* or *positive youth development* programs. Other programs focus on *universal prevention* in an entire population (e.g., an entire school). Still other programs employ *selective prevention,* targeting specific groups' especially high risk of unwanted outcomes. In a fourth category of preventive intervention, *indicated prevention,* the focus is on youngsters who already show some evidence of the target problem. Summary reviews and meta-analyses generally show beneficial effects. For example, one meta-analysis of 177 universal prevention studies found significant mean effects ranging from 0.24 to 0.93 (Durlak & Wells, 1997). In a review of 130 indicated prevention studies, Durlak and Wells (1998) found mean effects to be in the 0.50s. Several meta-analytic reviews have focused on the prevention of specific problems such as prevention of child abuse (Davis & Gidycz, 2000), reduction in harmful effects of parental divorce (Lee, Picard, & Blain, 1994), and prevention of drug abuse (Tobler & Stratton, 1997; but see Ennett, Tobler, Ringwalt, & Flewelling, 1994, on the apparent *in*effectiveness of the popular Drug Abuse Resistance Education [DARE] program for schoolchildren). Other meta-analyses have generated evidence of the effectiveness of school-based interventions in preventing substance use and school dropout (Wilson, Gottfredson, & Najaka, 2001) and evidence that prevention programs combining preschool intervention with family support showed effects on delinquency and antisocial behavior as long as 8–12 years after the intervention (Yoshikawa, 1995). The What Works Clearinghouse (www.whatworks.ed.gov/) provides ongoing reviews of academic prevention and intervention programs in education.

The body of evidence on intervention programs includes at least 1,500 clinical trials (Durlak, Wells, Cotton, & Johnson, 1995; Kazdin, 2000). Several hundred of these have met criteria for inclusion in various narrative reviews and meta-analyses. A 2008 special issue of the *Journal of Clinical Child and Adolescent Psychology* provides 10 reviews of the evidence on interventions for child and adolescent problems and disorders. Meta-analyses have found that the interventions, collectively, produce substantial beneficial effects (Kazdin, Bass, Ayers, & Rodgers, 1990; Weisz, Weiss, Han, Granger, & Morton, 1995). The average effect sizes in the child-focused meta-analyses have ranged from medium to large, similar to effect sizes for adult psychotherapy (e.g., Shapiro & Shapiro, 1982). Two other child meta-analytic results help clarify the nature of the effects: (a) Effects measured immediately after interventions are similar to effects measured at follow-up (five to six months after termination), suggesting that effects hold up well, and (b) effect sizes for the problems targeted tend to be higher than those for related problems that were not the focus of intervention (Weisz et al., 1995), suggesting that these therapies are not merely producing

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broad nonspecific effects but have rather precise impact on the primary focus. A useful question for the future will be the extent to which evidence-based interventions provide an advantage over the effects of usual clinical practice. This question has begun to be addressed via meta-analysis (Weisz, Jensen-Doss, & Hawley, 2005, 2006). Another useful question for the future concerns the extent to which culturally different groups do or do not respond differentially to general versus culturally adapted or culturally specific approaches.

Interventions for children experiencing academic disabilities, and learning disabilities in particular, contribute to the corpus of evidence-based practices. Fletcher, Lyon, Fuchs, and Barnes (2007) reviewed evidence-based programs for reading, mathematics, and written expression disabilities. Evertson and Weinstein (2006) and the What Works Clearinghouse website also contain reviews of academic interventions and instructional practices. Eleven articles in the *Journal of Pediatric Psychology* from 1999 to 2001, updated by Spirito and Kazak (2006), reviewed interventions for children with a range of chronic pediatric illnesses. In general, the findings support a range of approaches for a diversity of pediatric conditions and interventions that integrate various modalities.

Implementation and Dissemination Within A Meta-Systems Framework

A number of studies have now demonstrated that the quality of usual care is, at best, uneven (Bickman, 1996; Weisz et al., 2005) and, at worst, harmful (U.S. Public Health Service, 2001). The momentum to move new and tested practices into diverse real-world settings has created new tensions. Some of the biggest challenges have been the acceptance of EBP by providers, administrators, families, and other stakeholders; the effect of the adoption of EBP on caseloads or supervisory practices; the integration of EBP into existing organizational and management structures; the absence of clinical decision-support tools to monitor outcomes and provide feedback; concerns about the cultural and ecological responsiveness of EBP; and the costs of training and skill building in EBP given the barely break-even financing of most public mental health care. Studies examining the clinical efficacy of interventions (Schoenwald & Hoagwood, 2001; Weisz & Hawley, 1998) have rarely addressed these issues. These questions are critical because they affect the degree to which the integration of new EBP technologies will occur (Rosenheck, 2001) as well as whether they will occur.

Prompted in part by recognition of these challenges, a series of major federal, state, and local policies launched in recent years has created unprecedented opportunities for partnerships among researchers, practitioners, families, and policymakers. For example, statewide reforms are underway in at least 44 states (National Association of State Mental Health Program Directors [NASMHPD], 2005; Yannacci, Rivard, & Ganju, 2005), and numerous federal agencies, including the National Institute of Mental Health (NIMH), the National Institute on Drug Abuse (NIDA), the National Institute on Alcohol Abuse and Alcoholism (NIAAA), the Substance Abuse and Mental Health Services Administration (SAMHSA), and the Department of Education (DOE), have redirected funding priorities to incentivize the adoption of EBP. At least a dozen states are actively implementing EBP for children and families, and program leaders in the states have created a unique consortium to share evaluation and implementation lessons as they are being learned (Bruns & Hoagwood, 2008; Bruns et al., 2008). All of these initiatives are focusing on the uptake of EBP into public mental health systems. Federal activities include SAMHSA's EBP Toolkit Project and, for children, the *Implementation Resource Guide* (Burns et al., 2008); SAMHSA's Science to Service Initiatives; the NASMHPD Evidence-Based Practice Initiative for Children and Adolescents; NIMH's program announcement on dissemination and implementation; and jointly issued program announcements from both NIMH and SAMHSA.

In addition, national family support, education, and advocacy organizations have begun to publish guidebooks that promote EBP. For example, the National Alliance for the Mentally Ill (NAMI) recently issued a new booklet for families called *Choosing the Right Treatment: What Families Need to Know About Evidence-Based Practices* (Gruttadaro, Burns, Duckworth, & Crudo, 2007). A guide for family advisors (e.g., Family Partners) who work directly with parents or caregivers to assist them in obtaining services across multiple systems has also recently been published (Jensen & Hoagwood, 2008). These new guidebooks point to the momentum among family/consumer advocacy groups to validate the function of family-to-family support services for caregivers. In addition, in a national survey, directors of 226 family advocacy organizations in 38 states were asked to identify factors they believed were most strongly related to improved child outcomes. The factors

that received the highest endorsements were appropriate screening and diagnostic assessments, use of effective clinical practices, service availability, respectful relationships with providers, and quality of the therapeutic relationship (Hoagwood et al., 2008).

This attention to improved clinical practices by family-based organizations is an indicator of increased family/consumer attention to the content of services. This is a prime example of how a meta-systems framework can be used to understand how a collective process may yield accelerated progress in improving children's health outcomes. Families representing diverse cultural perspectives and values are advocating for effective practices across different service systems (schools, pediatric health, etc.).

In addition to federal, state, and family advocacy attention to these issues, other broad initiatives are underway to improve effective uptake of EBP for children. The Annie E. Casey Foundation's Blue Sky Project (Chambers, Ringeisen, & Hickman, 2005) is examining training and linkage models for connecting three specific interventions targeted at youths with disruptive or antisocial behavior problems (multisystemic therapy, functional family therapy, and multidimensional treatment foster care). The MacArthur Foundation has established a research network on youth mental health (see www.childsteps.org) focused on identifying strategies for effective use of interventions (for anxiety, depression, and conduct problems) in community mental health clinics and schools. The William T. Grant Foundation funded a monograph on implementation studies (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005).

Though empirical testing of implementation or dissemination strategies for children's mental health is lacking, there are several relevant strategies, frameworks, and guiding principles emerging to guide these system-level efforts. These strategies include construction of leadership coalitions, development of communities of practice, and measurement of implementation fidelity and outcomes (Rosenheck, 2001). Other strategies include communications linkages and feedback mechanisms (Bickman, 2008; Fixsen et al., 2005).

Finally, several processes are core to the implementation of new practices (sometimes referred to as technological innovations) in public mental health systems (Glisson, 2002). These processes are themselves being examined as instrumental to implementation of EBPs. These include social organizational processes (organizational culture, climate, and structure) and interventions to facilitate introduction of empirically supported treatments into usual community practice settings (Glisson et al., 2008; Glisson & Schoenwald, 2005).

Promising Developments in Meta-Systems Policy and Practice

Initiatives to reform and, in some cases, upend traditional mental health service models are emerging across the country. These initiatives are applying broader public health models that encompass early detection and intervention, prevention, attention to the strengths and resources that can optimize child development, ongoing monitoring, family engagement and empowerment, clinical decision-supports, measurement feedback, and structured linkages among service providers. Some states (Hawaii, New York, California) have embarked on statewide implementation research projects to examine strategies for improving large, population-based dissemination of specific aspects of evidence-based practices (e.g., screening, comprehensive assessments, cognitive-behavioral therapy training to frontline providers, multidimensional treatment foster care, clinical monitoring; Burns & Hoagwood, 2004). New York State is enhancing clinical services with a public health framework designed to improve early identification of social or emotional challenges through partnership with families and other non-specialty-provider systems (Bruns & Hoagwood, 2008). In addition, some states are credentialing family advisors to deliver family-to-family services as an enhancement to dissemination of clinical interventions (Bruns et al., 2008).

State oversight of mental health system implementation of EBP is emerging in Hawaii (Chorpita et al., 2002; Daleiden et al., 2006), Ohio (Julian, 2006; Panzano & Roth, 2006), and New York (North et al., 2008; Radigan et al., 2007; Zazzali et al., 2008). Because state efforts to implement multifaceted EBP require oversight of constellations of "idiosyncratic, complex microsystems" (Drake, Becker, Goldman, & Martinez, 2006, p. 304), some states offer comprehensive training and consultation through EBP "Centers" (North et al., 2008), and some are moving toward regulatory licensing and fiscal enhancements to support EBP implementation (Bruns & Hoagwood, 2008; Chambers et al., 2005).

The traditional linear medical models of efficacy or effectiveness do not reflect the realities of these new implementation and dissemination experiments. As a consequence, researchers are proposing new models of intervention development to better reflect these new developments and to accelerate the application of research findings to routine practice. For example, the deployment-focused model of Weisz (2004) suggests that development of new interventions should take into account those contextual variables (such as characteristics of the practice setting) that are essential to the ultimate acceptability of new services; accordingly, the model recommends that the bulk of intervention development and testing take place not under laboratory conditions but in the intervention contexts and with the kinds of clients and clinicians for whom the interventions are intended. In addition, researchers are examining alternatives to a top-down model of EBP implementation (Daleiden & Chorpita, 2005; Garland, Plemmons, & Koontz, 2006; Southam-Gerow, Austin, & Marder, 2008). These approaches are creating learning communities within typical practice settings, encouraging these settings to become evidence-driven centers for delivering services and examining the impact of routine practice on outcomes. This work is compatible with new approaches to intervention, such as modular protocols, which provide clinicians with increased flexibility in the use of empirically guided intervention strategies (see, e.g., Chor-

pita, 2007; Chorpita, Daleiden, & Weisz, 2005). Such normalization of research-based approaches to practice can demystify the scientific enterprise and facilitate the constant reevaluation, refinement, and improvement of services. This approach encourages the construction of locally relevant evidence and creates a context for research and outcome evaluation within routine service settings, hopefully leading to improvements in quality.

Next Steps

What next steps are needed to address the challenges laid out in this article in the context of the meta-systemic orientation advocated for EBP for children? While asserting the broad and important potential of EBP to influence clinical care and outcomes across systems, we also recognize that the "fit" among various evidence-based approaches with complex systems is often imperfect and that efforts to implement EBP at large-scale levels will demand ongoing flexibility and continued evaluation. Mindful of this, we present a series of recommendations to advance the gaps in knowledge and the barriers to dissemination of EBP.

First, consistent underfunding of children's mental health services and significant disparities in research funding make it difficult to introduce the new assessment and intervention skills that could improve mental health care systems and outcomes. Funding is skewed toward adults and, in the child arena, toward services for the most severely impaired and toward restrictive "deep end" services. Revamping funding priorities to focus on front-end, early intervention services is likely to yield social, economic, and personal benefits (Heckman, 2008). Second, building EBP skills requires a financial investment that exceeds the means of many providers in the mental health arena; we need to identify ways to cover the costs of skill building in the workforce. Third, increased research funding to develop and disseminate EBP in multiple and culturally diverse settings is essential, especially for underserved children, and it should target development and testing of implementation and dissemination strategies to support large-scale system changes to improve uptake of EBP. This area should be a research funding priority. In order to succeed at increasing funding in the current economic climate, multidisciplinary coalitions with federal agencies and other relevant organizations, including those representing major stakeholder groups, are necessary to provide guidance for request for proposal development that will inform research on the development and dissemination of EBP.

Other cross-discipline initiatives related to dissemination of child and adolescent EBP are necessary to make available training tools, educational materials, and Web-based supports to assist clinicians in using EBP; to identify new training opportunities; and to provide Web-based information systems to support the use of these tools to support practices in a range of settings and for culturally diverse populations. Training at the graduate and postgraduate levels in the application and evaluation of EBP is requisite in achieving the ultimate goal of successful implementation and dissemination. And, related to that training, the expansion of electronic tracking delivery and monitoring systems to assess progress across a range of settings and populations will be essential, along with development of brief and valid assessment measures for implementation fidelity to EBP across a range of settings and populations.

There are also needs for improvement in the communication of research findings, including establishing an electronic repository on nonsignificant or null findings from screening, assessment, and intervention research on EBP for children and encouraging funders and journal editors to require researchers and authors to specify the range and limits of generalizability in proposed and completed EBP studies, to solicit manuscripts that focus on the translation of research into practice and on the use of EBP with culturally and socioeconomically diverse populations, and to address practice or policy implications of research findings in simple, policy-friendly language. Especially important is that we promote the development of the EBP knowledge base from practice-based evidence in multiple contexts where prevention and intervention programs are implemented by practicing psychologists.

A series of steps are necessary to ensure the translation of EBP into clinical practice, service delivery, and policy. Current national and state policies and practices are not aligned with EBP delivery. In fact, numerous directives, legislative regulations, and fiscal policies either directly contradict or inadvertently interfere with EBP delivery. It will be necessary to take vigorous action to advocate for policies that will support rational delivery systems and practices that support effective training, practice, and evaluation of EBP. This includes identifying appropriate funding levels for implementation that reflect reimbursement rates, financing structures, and third-party payment rates and that provide adequate coverage for the costs of EBP implementation that may differ from the implementation costs for adults (e.g., inclusion of families, coverage for multiple provider consultations, inclusion of non-mental-health resources that promote optimal development, treatment of parents, school and community consultation). At present, most reimbursement formulas provide payment based on the amount of service provided or the time expended by the provider, with little consideration given to the content of the services, much less to whether they are evidence based. With such incentives, there is little encouragement to change current practice patterns, and in fact, changing current practices may generate nonreimbursable costs.

Initiatives to develop and disseminate research-informed EBP for children should be crafted in partnership with national, state, or local family-based support and advocacy groups. Parents, caregivers, and families offer important perspectives about the ingredients of effective care and how best to reach families and children; these perspectives are missed if not explicitly integrated into research and practice involving EBP. In addition, there is a particular need for more and stronger EBP bases for priority populations (including ethnic minority children; transition-age youths; children with severe or comorbid condi-

tions; children in the child welfare, juvenile justice, and primary care systems; those with substance abuse problems and disabilities; those in homeless shelters; and those experiencing significant health disparities).

Advocacy directed toward the elimination of barriers (including benefit restrictions) to EBP for children and families in the public and private sectors is needed. Models from health care (e.g., diabetes, pediatric cancer, cystic fibrosis) can be used to create regional mental health care collaboratives for harnessing multidisciplinary expertise and technologies toward the goal of improving delivery of EBP.

In conclusion, a meta-systems framework for the delivery of EBP for children and adolescents provides a more comprehensive understanding of the many contexts that shape children's development and reflect society's responses to their needs. Improving children's health outcomes from a public health standpoint requires, at a minimum, rapid translation of research findings into practice, continued advocacy for effective services, ongoing monitoring of outcomes, accountability standards to ensure that quality services are delivered, and collaborative partnerships among families, providers, researchers, and policymakers in the shared pursuit of optimal care for children.

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