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The System of Early Intervention for Children with Developmental Disabilities

Current Status and Challenges for the Future

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In both principle and practice, early intervention is now a well-established feature of service and support networks for children with documented developmental disabilities in the United States and around the world (Guralnick, 2005). In the United States, the systems nature of early intervention is firmly grounded in legislation, particularly the Education of the Handicapped Act Amendments of 1986 (P.L. 99-457). Over the years, the provisions of this act (now the Individuals with Disabilities Education Act [IDEA]) have been modified and revised in an effort to further strengthen the early intervention system, for example, IDEA Amendments of 1991 (P.L. 102-119) and the reauthorization of IDEA (P.L. 105-17; see Guralnick (1997b; Meisels & Shonkoff, 2000; Smith & McKenna, 1994, for historical accounts of this legislation). Taken together, this legislation actually created two components of an early intervention system: one focusing on infants and toddlers (birth-to-3 years of age; Part C of IDEA) and one addressing the needs of preschool children (3-to-5-year olds; Part B, section 619). Although both components will be discussed in this chapter,

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I will emphasize the early intervention system focusing on infants and toddlers.

Federal policy regarding the system serving infants and toddlers was quite clear, "... to develop and implement a statewide, comprehensive, coordinated, multidisciplinary, interagency system that provides early intervention services for infants and toddlers with disabilities and their families" (P.L. 105-17, Section 631). To accomplish this, incentives were provided to each state to establish a set of common components. Included among these components was the development of a proactive system to identify children in conjunction with supportive referral mechanisms and a central resource directory, the availability of a process to ensure that comprehensive and multidisciplinary evaluations and assessments occurred to help identify appropriate services and supports to be specified in an Individualized Family Service Plan (IFSP), and the existence of a service coordination mechanism to facilitate interagency activities. Administrative requirements governing each state's definition of developmental delay (the basis for eligibility), designating a lead agency responsible for the program, ensuring procedural safeguards, and establishing and maintaining professional standards were among other features of the system to be adopted by each state. When children reached 3 years of age, they were to become the responsibility of the local education agency and were provided with a free appropriate public education along with related services. Many of the same administrative requirements have applied to preschoolers, such as procedural safeguards. Although continuity between the infant and toddler and preschool systems was recognized as a critical element, and transition plans were to be put in place, the change from one component of the system to another has been nevertheless substantial, including a greater focus on children rather than on families for preschoolers (an Individualized Educational Program [IEP] is required). Moreover, there has been an overall absence of formal service coordination at the preschool level, especially for services not normally provided by school systems.

In this chapter, I examine various aspects of this system. First, I discuss the sources of continuing support for a system of early intervention programs and the core principles that have evolved to guide the system. This will be followed by a descriptive section focusing on the current status of the services provided by the system. In the next section, I consider the remaining and extensive challenges faced by the system of early intervention. In the final section, I present specific suggestions for addressing those challenges and emphasize the need to achieve greater consistency with respect to the principles and practices of early intervention.

CONTINUING SCIENTIFIC SUPPORT FOR EARLY INTERVENTION

Efforts to refine and further strengthen such a comprehensive and coordinated intervention system for children birth through 5 years of age

continue to find strong support at many levels. Indeed, over time, continuing advances in the science of early childhood development and early intervention, knowledge obtained from experiences in the provision of services, and changing professional and educational philosophies have combined to influence the specific features of the system and to further strengthen its foundations. In particular, the developmental science of normative development has continued to suggest that the early years contribute in vital and sometimes extraordinary ways to children's future development (National Research Council and Institute of Medicine, 2000). From this work, critical influences, particularly family influences on children's developmental trajectories, have been thoroughly documented. Constructs such as parental sensitivity, reciprocity, affective warmth, scaffolding, and discourse-based interactions, clearly have important independent and interrelated associations with children's social and cognitive competence (Landry, Smith, Swank, Assel, & Vellet, 2001; Landry, Smith, Swank, & Miller-Loncar, 2000; National Research Council and Institute of Medicine, 2000). Similarly, the influence of more distal or contextual factors and the mechanisms through which they operate to influence early childhood development have become more completely understood. Factors associated with the availability of social support, the family's financial resources, or intergenerationally transmitted parental beliefs and attitudes about child development can be measured effectively and are linked to children's developmental patterns even when development is proceeding without concern (e.g., Bradley, Corwyn, Burchinal, McAdoo, & Coll, 2001).

Corresponding research on the developmental science of risk and disability has also continued to reveal how the developmental trajectories of children can be altered by conditions associated with a child's biological risk or disability and also when environmental risk factors reach a level where the expected course of child development is likely to be adversely affected (Guralnick, 1997a, 1998). Perhaps most important has been the growing recognition that the organization of behavior of these vulnerable children (Hodapp & Zigler, 1990), and the influences on children's development operate in a fashion similar to that of typically developing children (e.g., Hauser-Cram et al., 1999). Unique and unusual developmental patterns are certainly evident in many instances, especially when considering the heterogeneity of children with developmental disabilities, but this evolving body of research continues to emphasize the value of a developmental framework and the corresponding importance of the early years (Guralnick, 1998).

Finally, intervention science has developed in the past and continues to develop a body of knowledge strongly suggesting that the course of development for children with developmental disabilities can be altered during the early years through well-designed interventions. Given the heterogeneity of children with developmental disabilities, outcomes can be expected to vary, but effect sizes generally range from 0.50 to 0.75 *SD* for these interventions (Guralnick, 1997a; Shonkoff & Hauser-Cram, 1987). Findings indicate that having a firm structure and plan that involves both parents

and children in the intervention is most effective. This certainly suggests that the planning and evaluation components that characterize the system of early intervention as represented in IDEA are essential, and further underscores the need for parental participation in early intervention to ensure its effectiveness.

Despite weaknesses in many of the experimental designs, a consensus has emerged from intervention science that early intervention is capable of producing important short-term gains in children's development. To be sure, some subgroups of children such as those with autism may respond unusually well to intensive interventions evident soon after intervention is completed (Lovaas, 1987), with gains retained many years later (McEachin, Smith, & Lovaas, 1993). Even for children with autism, however, responsiveness varies substantially (Smith, Groen, & Lynn, 2000). This variability and lack of responsiveness of certain subgroups is apparent for children with other broadly defined disabilities as well (e.g., Harris, 1997).

As might be expected, community-based intervention approaches that have emerged are diverse, combining information based on the developmental science of normative development, the developmental science of risk and disability, intervention science, and clinical experience (see Guralnick, 2001b). Taken together, although much remains to be accomplished, existing knowledge clearly provides support for the continuation and refinement of a comprehensive early intervention system. It is anticipated that as knowledge of developmental and intervention science increases, it can be more fully integrated to achieve the level of specificity and individualization required to maximize the effectiveness of an early intervention system.

CORE PRINCIPLES

Paralleling, and often interacting with, the scientific and clinical efforts that continued to generate support for the value of early intervention programs have been changes in philosophical approaches associated with early intervention. These philosophical issues have also strongly influenced the nature of the evolving system itself and have produced what might best be referred to as a set of core principles that could serve as further guides to practice. First, almost revolutionary changes occurred with respect to the values related to society's perceptions of children with disabilities. Concepts such as encouraging belongingness, respecting individual differences, and ensuring that all children were accorded the full measure of their civil rights including due process, equal protection, and minimum intrusion, became the foundation for establishing the core principle of *inclusion* (see Bailey, McWilliam, Buysse, & Wesley, 1998; Guralnick, 1978, 2001d). The complexity of the principle of inclusion notwithstanding, further legislative and related changes have continued to press the early intervention system to maximize the participation of children with developmental disabilities and their families in typical

community settings and activities. For infants and toddlers this has meant that services have increasingly been provided in "natural environments" such as the home or other places common to children without disabilities (see Bruder, 2001). For preschool-age children, inclusion initiatives have centered around efforts to maximize involvement and interactions among children with and without disabilities, usually in preschool or child care programs.

Second, the powerful movement to empower families in the context of the early intervention system, to develop true and meaningful partnerships with early intervention personnel, and to orient interventions around family concerns and issues, together constituted the principle of family-centered practices in early intervention (Bruder, 2000; Dunst, 2001). Over time, the concept of family centeredness became the central feature of the larger core principle regarding the importance of maintaining a *developmental framework*. Related to this developmental framework core principle has been an awareness of the implications of cultural differences on the design of early interventions and a recognition of the extraordinary diversity of families likely to encounter the early intervention system, especially families facing considerable challenges (Hanson & Carta, 1995). This emphasized further that a focus on families and a corresponding developmental orientation must be a critical feature of any early intervention system. Of note, legislative requirements in Part C, in particular, reflected the principle of family centeredness. Indeed, one major rationale for the law was to strengthen families as a means of helping them toward meeting their child's special needs. As a consequence, in addition to multidisciplinary child focused assessments, an assessment designed to enhance the family's ability to meet their child's needs considering family resources, priorities, and concerns as identified by the family was required and continues to be emphasized in legislation.

Third, the movement to integrate and coordinate services and supports for children and families at all levels emerged in response to the already overwhelming task that generally fell to families who were attempting to organize extraordinarily diverse and separate community resources into a coherent intervention program for their children (see American Academy of Pediatrics, 1999; Bruder & Bologna, 1993). In addition, the fractionated, discipline-specific approaches to intervention that were dominant at the time the legislation was enacted were inconsistent with newer philosophies emphasizing more holistic approaches to child development and the similarities and continuities in development characterizing both children with and without disabilities (Bredekamp & Copple, 1997). Accordingly, legislation initially included, and subsequently reiterated, clear goals designed to improve integration and coordination, such as requiring a service coordinator for families, ensuring the involvement of a multidisciplinary team and, at the systems level, mandating states to coordinate resources. Consequently, as with the other core principles, this core principle of *integration and coordination* was intended to influence virtually all components and aspects of the early intervention system.

SERVICES PROVIDED BY THE EARLY INTERVENTION SYSTEM

Today, early intervention systems are in place in all 50 U.S. states following the broad principles and practices articulated in the federal legislation. Certainly from a quantitative perspective, this system has been a success because there has been considerable growth over time in the number of children served annually, now nearing 200,000 infants and toddlers (1.8% of the 0–3 population) and nearly 600,000 preschoolers (5% of the 3- to 5-year olds—U.S. Department of Education, 2001). Moreover, in a recent report of a nationally representative sample of infants and toddlers served under Part C, it was evident that the program has been reaching families with diverse characteristics (Hebbeler et al., 2001). In fact, 42% of children entering early intervention were recipients of some form of public assistance and the children enrolled exhibited a wide range of delays and disabilities. About 20% of children entered the system within the first 6 months of life, with the average age of referral being 15.5 months. IFSPs generally were developed shortly after referral.

Efforts to examine the types, location, and intensity of services families received through the early intervention system have occurred frequently. Although differences across studies are common due to intrinsic variations among states as well as sampling and evaluation methods, a general picture has nevertheless emerged. Part C, in particular, specifies the types of services to be made available to families including assistive technology, audiology, service coordination, transportation, translation services, family counseling, family training, and genetic counseling and evaluation in addition to more conventional health and therapeutic services. A recent federal report (U.S. Department of Education, 2001) based on the *National Early Intervention Longitudinal Study* revealed extensive use of these services by families even during the first 6 months of participation in early intervention. Most notable perhaps is that 80% of families availed themselves of service coordination, reflecting the complex task facing families of integrating and coordinating the various service types. Indeed, over three-quarters of families received from two to six different services, with 10% receiving eight or more services. Family-related services, directed at addressing the needs of family members rather than principally those of the child, also occurred with reasonable frequency, but rarely exceeded 20% of the participants. Overall, the most frequently used services were special instruction, speech and language therapy, and physical and occupational therapy (Perry, Greer, Goldhammer, & Mackey-Andrews, 2001).

These service patterns are consistent with parents' expressed priorities with respect to information about their child's disability, the course of their child's development, and present and future services (Garshelis & McConnell, 1993; Mahoney & Filer, 1996). That families value these services is reflected further in work that has revealed high utilization rates of scheduled early intervention services for "exemplary" programs (Kochanek & Buka, 1998), although utilization rates are lower when statewide analyses are carried out (Perry et al., 2001).

Participation in the System

Consistent with the fact that a high proportion of families with substantial economic needs are enrolled in Part C programs is that, for the most part, sociodemographic factors do not appear to be associated with utilization rates or other service characteristics (Kochanek & Buka, 1998; Shonkoff, Hauser-Cram, Krauss, & Upshur, 1992). Clearly, the system is doing well here, apparently arranging services in a manner consistent with child and family needs (Shonkoff et al., 1992).

This is not to say, however, that family characteristics do not matter in terms of systems involvement. As might be expected, some reports suggest that service levels are linked to the time available to families to participate in and competently and actively engage the service system (Mahoney & Filer, 1996), rather than potential benefits from using additional services per se. Studies of actual parent involvement in early intervention programs do, in fact, reveal strong associations with family characteristics. Specifically, for parents already enrolled in early intervention, Gavidia-Payne and Stoneman (1997) indexed parent involvement or participation by measuring parental attendance at IFSP and IEP meetings, voluntary participation in workshops and related activities, knowledge about their child's disability, educational rights, and other relevant factors suggesting involvement, and their cooperation with the early intervention program on various projects including parent participation in goal-related activities in the home. Using this index, factors associated with greater parental involvement in early intervention included higher levels of family education, income, social supports, coping abilities, marital adjustment, and general family functioning, but lower levels of stress (hassles and depression). Not all of these factors applied to both mothers and fathers, but the pattern was clear: family well-being, including cognitive coping strategies, is associated with greater participation in early intervention programs.

Service Intensity and Location

The effect of increased parental involvement is certain to result in increased intensity of child and family services, and perhaps their quality as well. For many subgroups of children and families, intensity of services does matter (Guralnick, 1998). Recommended practices for as many as 25–40 h a week of services (National Research Council, 2001; New York State Department of Health, 1999) for children with autism, provides an indication of the potential importance of intensity for an increasingly prevalent subgroup of children with established disabilities. Even more modest intervention efforts focusing on the many influential factors on child development can have an important cumulative impact representing a considerable level of intensity of services (see Guralnick, 2001b).

Of importance is that, when the actual hours of service provided is evaluated across the system, the number turns out to be surprisingly small. In the Shonkoff et al. (1992) analysis of children participating in Part C services, the total number of service hours ranged from as little as less

than 1 h to as many as 21 h a month. On average, however, approximately 7 h of service were provided monthly. Severity of a disability was associated with greater service hours, but considerable variability was the norm, even among children with severe disability. Similar patterns are seen in more recent statewide analyses (Perry et al., 2001). However, when children reach preschool age, service hours increase substantially as children participate in almost daily one-half day preschool educational programs. Service hours are also higher for those participating in specialized intervention programs, such as for many children with autism but, despite continuing legal and administrative efforts, overall service hours remain relatively modest even for that group of children (see Feinberg & Beyer, 1998).

Parents have also sought out services beyond those provided by the early intervention system for both infants and toddlers and preschoolers (Kochanek, McGinn, & Cummins, 1998; Shonkoff et al., 1992). The range of such additional services is quite extraordinary, including child care, family supports, mental health, recreation, employment, and various therapies. It is not clear the extent to which the early intervention program either recommended or helped coordinate these additional services, but it appears that many parents take the initiative to arrange these services and, in many instances, pay additional costs.

With respect to location, for infants and toddlers, most of the services are delivered in the family home, but services occur frequently in specialized centers, clinics, or offices as well (U.S. Department of Education, 2001). For preschool-age children, the dominant location for services is the child's preschool program.

Satisfaction

For the most part, families have been quite satisfied with services received as part of the early intervention system. Surveys, interviews, and questionnaires related to satisfaction do tend to elicit positive responses in general; in part because parents wish to be supportive and have often established positive relationships with program staff, and in part because there is no expectation for or awareness of other service possibilities (Harbin, McWilliam, & Gallagher, 2000; McWilliam et al., 1995). Parental concerns that do exist usually focus around the need for easily accessible information about services, informal facilitation of connections with other parents, and further refinement and enhancement of service coordination (see Harbin et al., 2000, for a discussion of these concerns).

CHALLENGES FOR THE FUTURE

It is evident that extraordinary progress has been achieved in creating a system of early intervention services and supports for children with developmental disabilities. Within a period of less than 20 years, the elements of a comprehensive early intervention system are in place in all 50 states, and services continue to expand. As might be expected, however, given

the demands facing states to create a system of services for such diverse and heterogeneous groups of children and families with complex and ever changing needs, a number of important challenges remain. A special challenge has been to translate the core principles discussed earlier in this chapter into practice to effectively meet the needs of children and families. Accordingly, I discuss below the critical challenges for the future of early intervention systems in the domains of inclusion, integration and coordination, and developmental framework. In addition, I suggest that other principles and practices that are central to an early intervention system must also be addressed in order to enhance the system's effectiveness. Overall, a need exists for a coherent and commonly shared framework to guide states in the further development of a system of early intervention.

Inclusion

Recent analyses have revealed that the early intervention system has not yet been able to provide universal access to inclusive programs (see Guralnick, 2001d). Many communities simply offer few inclusive options, and those that are available frequently do not provide for maximum participation with typically developing children (e.g., Cavallaro, Ballard-Rosa, & Lynch, 1998; Kochanek & Buka, 1999). In addition, the quality of many inclusive programs is questionable (see Bricker, 2001), as it is difficult to adjust curricula to meet the highly diverse needs of children with disabilities and to do so in a nonstigmatizing manner. Moreover, how to best implement the concept of natural environments for infants and toddlers is far from clear and has even created a level of controversy narrowly focusing on service location and the role of traditional therapeutic activities. Yet, even for traditional therapies, techniques are available that enable therapists to provide effective therapies in natural settings (see Hanft & Pilkington, 2000).

Indeed, this challenge has given rise to a larger issue that is now focusing on identifying learning opportunities for children in home, educational, recreational, and community settings that can be supported through early intervention (see Bruder, 2000; Dunst, 2001). Similarly, the importance of working with families in the context of early intervention to support existing family routines is compatible with a more general approach to natural environments in particular, and inclusion in general (Bernheimer & Keogh, 1995). Certainly there is a place for specialized therapeutic services, but a major challenge remains for the early intervention system to clarify these issues, to determine ways to embed interventions in natural environments, family routines, and community activities, and, in general, to ensure the maximum participation of children and families in typical activities in home and community settings (see Guralnick, 2001a).

Integration and Coordination

Due to the involvement of numerous disciplines, service agencies, and administrative organizations in any early intervention system, a major

challenge continues to exist to integrate and coordinate all the elements efficiently and effectively (see Bruder & Bologna, 1993; Roberts, Innocenti, & Goetze, 1999). Problems are frequently identified by families with respect to service coordination (see Harbin et al., 2000). Moreover, a recent analysis of service coordination models in different states as part of the *National Early Intervention Longitudinal Study* (Spiker, Hebbeler, Wagner, Cameto, & McKenna, 2000) revealed wide variations in approaches among the states studied. In some instances, service coordinators remained stable as families moved throughout various phases of the early intervention system, whereas in other instances new coordinators were assigned or selected after referral and intake. Variations were also apparent with respect to the type of agency that employed the service coordinator or whether single or multiple functions (e.g., service provision as well as coordination) were carried out by the service coordinator. Advantages and disadvantages with respect to effective service coordination are likely to be associated with each model, but perhaps the most salient result of this analysis was the heterogeneity in service coordination approaches that was found and the lack of corresponding rationales for policies or practices.

As noted, from a broad systems perspective, concerns with respect to coordination among the agencies providing services under Part C are many and have been discussed by Harbin et al. (2000). In the Spiker et al. (2000) report, service system models varied substantially with respect to the comprehensiveness of the services available and the leadership and decision-making ability of the lead agency. The report also noted that a high level of coordination and comprehensiveness was uncommon. Policy direction provided at the state level to promote interagency coordination, along with relevant training to make integration and coordination a reality, was generally absent. Indeed, this study revealed not only considerable cross-state variation for a number of early intervention system components, but considerable within-state variation as well. In fact, many states delegated administrative responsibility to local communities, including determination of the lead agency (Spiker et al., 2000). Although we have limited information about the efficiency and effectiveness of these different approaches, it appears likely that the degree of integration and coordination across and within elements of the service system varies substantially and constitutes a major challenge for the future (Roberts et al., 1999).

In addition to broad systemic concerns, integration and coordination pose challenges at other levels of the system. Interdisciplinary teams constitute one such challenge both at the level of comprehensive interdisciplinary assessments (Guralnick, 2000) and in the delivery of services (Bruder & Bologna, 1993). Team process factors, professional training issues, and incompatible administrative requirements for different providers are among the challenges to integration and coordination at this level. Models of collaborative consultation are also emerging (McWilliam, 1996) that hold the promise of integrating often duplicative and inefficient services provided by separate disciplines, many of which appear to have only limited functional utility for the child and family (Dunst, 2001; Hanft & Pilkington,

2000). Fully implementing these new models where appropriate is a major challenge for the future.

Developmental Framework

The system of early intervention has increasingly focused on families as indicated by the fact that more and more family-oriented services have been included on IFSPs, and families are becoming increasingly satisfied with their involvement and participation with professionals (Mahoney & Filer, 1996). Although operating within a developmental framework in the context of early intervention means more than simply focusing on families, it is nevertheless an essential feature.

Yet, many professionals tend to remain child-focused even during home visits (McBride & Peterson, 1997), professionals often are not sure how to approach family concerns during assessment phases (Filer & Mahoney, 1996; McWilliam, Snyder, Harbin, Porter, & Munn, 2000), and families may not be sufficiently aware of their role and influence on child developmental outcomes in the context of the intervention process, expecting that professionals will focus on children (see Kochanek & Buka, 1998). In essence, what appears to be lacking is a developmental framework that can be utilized by both parents and professionals to conceptualize, organize, and guide the implementation of a program of early intervention. I have argued elsewhere that without such a developmental framework, one that clearly articulates the role of developmental processes and influences, especially family influences, the establishment of a coherent and effective early intervention system is unlikely to occur (Guralnick, 2001c).

Although many developmental models may be appropriate, the body of knowledge of developmental science has suggested that experientially based child developmental outcomes are a function of three family patterns of interaction: (1) the quality of parent-child transactions; (2) family-orchestrated child experiences; and (3) health and safety provided by the family. The various constructs associated with these family patterns of interaction (e.g., responsivity, social support, developmentally appropriate stimulation) have been well defined and measured and linked both independently and jointly with children's development (Guralnick, 1998; National Research Council and Institute of Medicine, 2000). Under a wide range of conditions considered typical, child developmental outcomes occur in an optimal or near-optimal fashion. However, as a consequence of adverse family characteristics, such as parental mental health problems, absence of social supports, marital stress, or poverty, those family patterns of interaction are stressed to a point where nonoptimal patterns result. One consequence can be poor child developmental outcomes.

This same developmental framework applies to children with established developmental disabilities (see Guralnick, 1997a, 1998). However, in this case, characteristics of the children themselves generate stressors that take different forms but clearly also impact family patterns of interaction; that is, these circumstances create stressors in the form of information needs, interpersonal and family distress, resource needs, and

confidence threats to parenting. Although the level and course of development of children with established developmental disabilities will certainly be compromised, by definition, these stressors can act to perturb the three family patterns of interaction discussed above, yielding even poorer child developmental outcomes than would otherwise occur. Accordingly, when early intervention programs assess and respond to potential stressors (in which family patterns are stressed to a point in which adverse child developmental outcomes become more likely) by providing a comprehensive and individualized set of resource supports, social supports, and information and services to families as part of the early intervention system, more optimal outcomes for children should result. Available evidence is consistent with the major features of this developmental model of family support and benefit for children at risk for developmental difficulties due to family characteristics (environmental risk), children at risk due to biological factors, and for children with established developmental disabilities (see Guralnick, 1998).

FUTURE SYSTEMS DESIGN

The future challenges associated with the core principles and related practices to the system of early intervention described above signal that a larger concern is at issue. That is, despite guidance provided by IDEA with respect to the rationale, design, and implementation of statewide early intervention systems, substantial variability is found at every level that does not appear to be in the best interests of children and families, and may adversely impact the effectiveness of these systems. The varying approaches to early intervention seem to lack corresponding rationales, differing eligibility requirements across and within states seem inconsistent with the intent of IDEA, and the lack of information connecting variations in services and supports to outcomes suggests an absence of thoughtful planning and consideration of alternatives (see Spiker et al., 2000). In general, a thorough analysis of the components of an effective and efficient system and how those components are interrelated has yet to occur. Of course, uniformity is not and should not be a goal in complex systems, but states should have well-articulated frameworks for the systems they create; arguably one's consistent with the knowledge base provided by developmental and intervention science and informed by clinical practice. I have put forward one approach referred to as the Developmental Systems Model (Guralnick, 2001c), which could be used to provide such a general framework. This systems model is summarized in the next section.

Developmental Systems Model

The major organizational features of the Developmental Systems Model generally follow standard early intervention policies and practices and include the following components: (1) screening and referral; (2) surveillance and monitoring; (3) points of access; (4) comprehensive interdisciplinary assessment; (5) establishing eligibility for the program; (6) assessing

stressors; (7) developing and implementing a comprehensive program; (8) monitoring and outcome evaluations; and (9) transition planning (see Guralnick, 2001c). Other features of the overall model include decision points for the various components, a distinction between preventive intervention and early intervention, and a set of sequenced relationships among components. The overall model is consistent with the prescriptive elements defined in Part C of IDEA and is certainly compatible with early intervention efforts for preschool-age children, although the emphasis on family issues is much greater. Guidance for some of the assessment components of the model is provided by stressors affecting family patterns of interaction outlined above, and the corresponding intervention activities are responsive to the various responses to those stressors in an effort to maximize the three family patterns of interaction.

The organizational framework is guided by a set of principles including the three core principles of developmental framework, integration and coordination, and inclusion. Complementing these core principles are related principles including the importance of early detection and identification, the importance of sensitivity to cultural differences, especially in connection with their developmental implications, and the need to ensure that practices are evidence-based. A major challenge for the future is to translate this organizational framework or another well-articulated framework and set of principles into practice in typical community-based early intervention systems. A process for examining each component and developing corresponding protocols (e.g., decision rules, assessment protocols) consistent with the Developmental Systems Model that can be adopted by communities is well underway (Guralnick, 2005). The hope is to be able to integrate this framework with the developmental science of normative development, the developmental science of risk and disability, intervention science, and clinical experience to create as optimal a system as possible and, of considerable importance, one that is reasonably consistent from community-to-community.

CONCLUSION

Early intervention systems are now in place in virtually every community in the United States, providing vital services and supports to young vulnerable children and their families. The growth of the system has been quite remarkable since P.L. 99-457 was enacted in 1986. The extensive heterogeneity evident in the system is both a strength and a weakness. Its strength relates to the ability of communities to build upon existing resources and administrative arrangements to accomplish its goals. Its weakness relates to the unevenness of services and supports, not only across states but also across local communities within states. Moreover, it is difficult in many instances to identify common principles and practices; most of which can have direct effects on child and family outcomes. Challenges are most apparent for core principles relating to a developmental framework, integration and coordination, and inclusion. The need for some commonly agreed-upon framework seems to be a necessary step in the

further development of a truly national and effective early intervention system. Uniformity of systems is not the goal, as communities should decide what arrangements work best for them. But agreement on common points of reference and direction for communities can serve as a framework for addressing the many systems challenges facing the early intervention community in the years ahead.

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