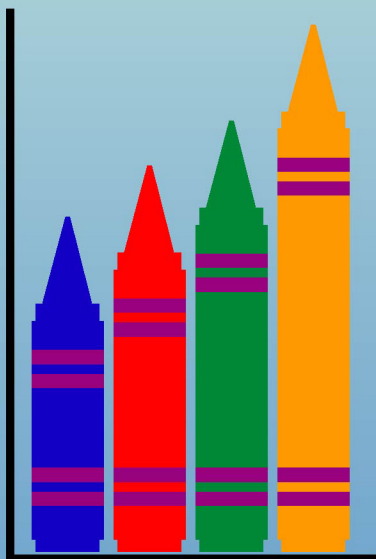




Systems of Service Delivery: *A Synthesis of Evidence Relevant to Young Children at Risk of or Who Have Challenging Behavior*



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**Center for Evidence-Based Practice:
Young Children with Challenging Behavior**

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Center for Evidence-based Practice: Young Children with Challenging Behavior
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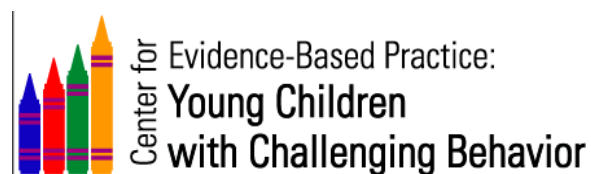
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About the Center . . .

The Center for Evidence-Based Practice: Young Children with Challenging Behavior is funded by the U.S. Department of Education Office of Special Education Programs to raise the awareness and implementation of positive, evidence-based practices and to build an enhanced and more accessible data base to support those practices.

Systems of Service Delivery: A Synthesis of Evidence Relevant to Young Children at Risk of or Who Have Challenging Behavior

Barbara J. Smith, Ph.D. and Lise Fox, Ph.D.
University of Colorado at Denver and University of South Florida

Executive Summary

The purpose of the synthesis is to present a concise picture of the state of empirical knowledge relating to the effectiveness of service systems or system components to support positive outcomes for young children at risk of or who have challenging behaviors. Thus systems of prevention and intervention are included in this synthesis. This picture is intended to: a) convey the nature of what is known about service systems and their ability to support positive outcomes for young children at risk of or who have challenging behavior, b) identify the most conspicuous gaps in current knowledge, and, c) make recommendation about prominent needs to be addressed by applied research.

The approach used to develop the synthesis involved a focused process of information gathering with input from Center personnel as well as authorities from multiple disciplines including infant and child mental health, child care, child welfare, and education. The input obtained from national authorities included recommendations regarding the definition of key terms, the location of pertinent resources, and the specification of bibliographic entries. As input was received, a core team of authors from the Center distilled the significant knowledge that emerged from the synthesis, summarized the knowledge and the most obvious gaps, and made recommendations for future research.

Literature Review and Synthesis Procedures

The goal of the synthesis was developed from the RFP for the project and from the research goals of the project workscope. The definitions were determined by the project management team. The guiding questions or parameters of the literature review and synthesis were derived from previous work in early intervention and systems research conducted by the Center's faculty, the synthesis team and others in the field.

Definitions

System of service delivery –we found no definition of *system* or *system of service delivery* as it pertains to young children with or at risk of challenging behavior. There are various generic definitions of system. For instance, Webster's dictionary defines a *system* as “a regularly interacting or interdependent group of items forming a unified whole”. Senge, et al., define *system* as “a perceived whole whose elements ‘hang together’ because they continually affect each other over time and operate toward a common purpose” (Senge, Kleiner, Roberts, Ross, & Smith, 1994).

Defining the term *system* was a critical first step in our efforts to seek and synthesize the literature on systems of service delivery in that it is important to delineate systems (i.e.,

systems are comprised of groups of items or elements that perform as a whole, etc. see above) from intervention strategies or services, programs or funding streams that serve singular purposes. Studies of intervention strategies represent the vast majority of the empirical literature related to young children with challenging behavior (see Center for Evidence-Based Practice, 2002 (a)). Second, there are numerous federal and state funding streams or programs that provide resources and regulations related to providing a particular service, e.g., Medicaid, the Individuals with Disabilities Education Act (IDEA), Head Start, Child Welfare Services Program, etc. (Cohen & Kaufmann, 2000; see Center for Evidence-Based Practice, 2002 (b); Wishman, Kates & Kaufmann, 2001). However, a frequently cited concern related to young children with or at risk of challenging behavior or mental health problems is the fact that services and programs are unitary and uncoordinated, i.e., not functioning as a whole and therefore, not a system (Infant Mental Health Forum, 2002; Kaufmann & Dodge, 1997). The charge of this synthesis, therefore, is not on interventions, programs or funding streams but on the macro focus of the system for delivering the programs and services.

A system may be comprised of several programs, funding streams or services. Thus, we defined a *system of service delivery* for our purposes as:

a system (unified whole) of programs/resources/policies/services (federal, state, local, program level) that impact positively on children's social-emotional development and behavior.

Evidence-base –the level of evidence that supports the efficacy and generality of a practice as indicated by research.

The term, *evidence-based*, has been typically applied to the quality, robustness, and validity of scientific evidence for treatment approaches where an interpretation of research evidence and treatment outcomes is relatively straightforward. An evaluation of evidence in regard to service systems or system components is more challenging. There is very limited research addressing service system efficacy. We found no framework in the literature specific to analyzing the strength of evidence in systems of service research. Guidance was found related to strength of evidence of research related to direct services or practices/treatments with individuals (Child and Mental Health Division Task Force, 2000; Hawaii Department of Health, n.d.; Lonigan, Elbert, & Johnson, 1998; McMaster University Occupational Therapy Evidence-based Practice Research Group, American Academy for Cerebral Palsy and Developmental Medicine). Therefore, the Center team developed a framework for determining the strength of evidence in the knowledge base of systems of services to young children at risk of or who have challenging behavior. This framework is described below.

Our review of the literature included the consideration of the level or type of evidence that supported conclusions regarding service systems and effectiveness in providing supports to young children at risk of or who have challenging behavior and their families. We classified the empirical literature according to the following types of evidence:

Type 1. Empirical evidence (quantitative or qualitative research) published in peer-reviewed journals that indicate positive outcomes for children (i.e., change in social-emotional status or problem behavior). This includes: single subject research, between group experiments, case study, qualitative interviews, and participant observation. This type also includes published reviews of empirical evidence from peer-reviewed journals that cite the original studies.

Type 2. Evaluation reports that provide data that are analyzed by an outside source (other than system developer) and provide evidence of positive outcomes for children (i.e., change in social-emotional status or problem behavior).

Type 3. Evaluation reports that provide data that are analyzed by the system developer and provide evidence of positive outcomes for children (i.e., change in social-emotional status or problem behavior).

Type 4. Survey/descriptive research published in peer-reviewed journals that provide a summary of impressions of outcomes.

In addition to the four types of empirical evidence, we reviewed and considered a host of consensus documents that addressed the issue of service systems for young children with challenging behavior or the development of those systems. In our review of consensus documents we examined the following types of publications:

Type 5. Multi-authored consensus documents that indicate there is evidence of efficacy for the practice but do not provide the data.

Type 6. Descriptions of system features that are designed to result in positive outcomes for children (i.e., change in social-emotional status or problem behavior) but do not include evaluation data.

Young Children – for the purpose of the Center and the synthesis, “young children” was defined as the entire population of children between the ages of birth and 6.

Challenging Behavior – for the purpose of the Center, “challenging behavior” shall be defined as any repeated pattern of behavior, or perception of behavior, that interferes with or is at risk of interfering with optimal learning or engagement in pro-social interactions with peers and adults. Challenging behavior is thus defined on the basis of its effects. While some children’s challenging behaviors are developmentally normative and effectively addressed by adult vigilance and the use of appropriate guidance procedures, the Center is focused on identifying evidence-based practices that prevent and/or address challenging behaviors that are persistent or unresponsive to those approaches. Common topographies of those behaviors include prolonged tantrums, physical and verbal aggression, disruptive vocal and motor responding (e.g., screaming, stereotypy), property destruction, self-injury, noncompliance, and withdrawal.

For infants and toddlers, challenging behavior must be considered within the context of the relationship of the child to caregivers. Behavior that is challenging for example, may manifest as attachment difficulties, sleeping and eating difficulties, excessive crying, and difficulty in soothing. Challenging behaviors may be defined as behaviors that interfere with the development and maintenance of reciprocal, positive, and nurturing relationships with the parent or caregiver. Challenging behavior, as a pattern of behavior, is noted by considering the relationship of the child and adult and the difficulties that are manifested in the dyadic exchange. These behaviors may be the result of biological or environmental factors that affect infant development and, as a consequence, the infant's relationship with a caregiver or they may be related to challenges (i.e., neglectful caregiving, parental mental health, etc.) that affects the ability of the caregiver in establishing a nurturing and responsive relationship.

Literature Review

Several procedures were used to identify literature that would describe evidence-based practice within service systems including service system interventions, service system evaluations, and model programs that indicated positive outcomes (i.e., improvements in social development, mental health, or problem behavior) for young children with challenging behavior. Our search of the literature included published research, evaluation reports, literature reviews, national policy statements or other consensus documents, and program descriptions as well as documents that were referenced by national reports or authorities and available through the world wide web. We did not include reports that were unpublished or not available to the general public.

The literature search was conducted using the following major and minor descriptors to capture the population of interest: early intervention, preschool, early childhood, infants, young children, and child care. Those descriptors were used with the following major and minor descriptors to capture the literature of interest: social-emotional development, mental health, discipline, child guidance, challenging behavior, maladaptive behavior, and social skills. In addition, we used the descriptors of policy, administration, service system, and systems with the previous descriptors to ensure that literature applicable to policy and administration was identified. Those descriptors were used with the ERIC, Psych-Info, and Med-line databases to identify the relevant literature that has been published since 1982 until the development of this report (May, 2002).

In addition to a traditional process of identifying literature through databases, we networked with colleagues, organizations, and agencies to ensure that our review included task force reports, consensus documents, evaluation reports, and recommendations to the field. In that effort, we also used the world wide web to locate relevant documents by using the same descriptors used in the data base search and "visited" the home page of national organizations and federal agencies concerned about the well-being of children at risk of or who have challenging behavior. Those organizations and agencies included: American Academy of Child and Adolescent Psychiatry (AACAP), American Psychological Association (APA), the Division for Early Childhood of the Council for Exceptional Children (DEC), Federation of Families for Children's Mental Health, National Association for the Education of Young Children

(NAEYC), National Association of Child Care Resource and Referral Agencies (NACCRRA), National Center for Children in Poverty (NCCP), National Center for Early Development and Learning, National Early Childhood Technical Assistance Center (NECTAS), National Head Start Association (NHSA), National Institute of Mental Health (NIMH), National Mental Health Association (NMHA), National Research Council of the National Academies of Sciences, National Technical Assistance Center for Children's Mental Health, Research and Training Center for Children's Mental Health, U.S. Department of Education, U.S. Department of Health and Human Services, and Zero to Three.

As a final check to ensure that the literature reviewed was comprehensive, we provided the list to a resource and review team consisting of: Maureen Conroy, Department of Special Education, University of Florida; Gloria Harbin, Frank Porter Graham Child Development Center, University of North Carolina at Chapel Hill; Mario Hernandez, Florida Mental Health Institute, University of South Florida; Gail Joseph, University of Colorado at Denver; Roxane Kaufman, National Technical Assistance Center for Children's Mental Health, Georgetown University; Jane Knitzer, National Center for Children in Poverty, Columbia University; Lynette Kimes, Zero to Three; Maria Synodi, Connecticut Department of Education; Sharon Walsh, Walsh Taylor, Inc. The resource and review team was asked to review the list of literature and identify missing resources that were relevant to our review.

We acknowledge that there is a great deal of knowledge that is not included in this synthesis that has been generated by model programs and local community innovations that either focus on direct service (vs. systems) or did not meet our criteria for inclusion into the pool of publicly available literature or reports.

Findings

Empirical Evidence (Type 1-4 Evidence)

The following section presents a summary and major findings from the empirical (Type 1-4 evidence) sources of the synthesis of the existing knowledge base related to systems of services or components of systems that result in positive outcomes for young children at risk of or who have challenging behavior. *We found little empirical research of the effectiveness of systems of service delivery for young children with or at risk of challenging behavior.* In the absence of empirical research on systems of service delivery for this population, we organize the synthesis by: (1) empirical data on prevention and intervention *programs* that have implications for systems and that have data on their effects on children's social/emotional development and/or challenging behavior, and (2) by the *components of systems* of service delivery: comprehensiveness and individualization, family support, collaboration and coordination, eligibility and access, finance, and work force.

Programs

There are a host of programs that have been developed to respond to the prevention and intervention needs of young children with social-emotional problems, mental health

problems, or problem behavior that have evidence of their effectiveness. While these programs do not constitute a service system, they provide demonstrations of practices and model components that may be valuable for service system integration.

In our synthesis, we include a review of the few programs that provide effectiveness data on improving the social, emotional, or behavioral outcomes of young children. There are many well-conceptualized programs that are based on empirical literature, effective practice research, and consensus recommendations for effective programs that do not appear in this review. Programs were not included if research or evaluation data were not available to support the promotion of positive outcomes (e.g., reduced problem behavior or promotion of social competence) for children with challenging behavior. This review includes prevention programs that were designed to address the needs of children at-risk for poor academic and social outcomes that document improvements in problem behavior or social competence and intervention programs designed to reduce problem behavior and facilitate social skill development

Systems Components

In the absence of research evidence on actual systems or systems of care that promote young children's social-emotional well-being or effectively address challenging behavior, we reviewed and summarized the literature on the components of systems that have evidence of effectiveness. The components include: comprehensiveness, individualization, family support, collaboration and coordination, eligibility and access procedures, finance policies and work force considerations.

Consensus Documents and Descriptions of Systems Features (Type 5 and 6 Evidence)

The synthesis reports the findings from the review of consensus documents (Type 5 & 6 evidence) that recommend systems or systems components for effectively promoting social- emotional development or addressing challenging behavior in young children.

Many national associations and agencies have issued position or policy statements regarding how children's mental health, social emotional development or challenging behavior should be addressed nationally. These positions or policy statements represent a consensus that draws on the available evidence as well as an apparent agreement among diverse groups about the parameters of a system of care for young children that promotes well being, prevents social emotional problems and provides effective interventions. Position Statements were considered in our synthesis to be Level 6 evidence.

Conclusions from the Synthesis

The following conclusions are made from the synthesis of the empirical literature and the consensus reports and positions and descriptions of systems features .

- I. **Challenging behavior can be prevented** in many cases and social and emotional performance can be promoted. Therefore, systems must facilitate and

support a **comprehensive array of services from prevention to intensive intervention. Second, the system must support the delivery of high quality services.** The quality of early education and care environments is strongly related to the development of social competence. Children who are most at-risk are especially vulnerable when placed in low quality early education and care environments. Evidence-based programs and system components need to be brought to scale nationally and systems implemented to support them. The most robust evidence of effectiveness in promoting social competence and intervention strategies with challenging behavior are derived from the study of several effective programs.

II. **Systems must be comprehensive and provide individualized service** in order to address the complex and varied needs of children and families. Services should be individualized related to child and family needs, culture and language.

III. **In the absence of one comprehensive service delivery system, systems must be developed from interlocking and interconnected services and programs into a system of care.** Systems of care refer to the weaving together of multiple existing services or programs into a cohesive, collaborative system that reduces overlap, fills gaps and addresses transition issues for children moving from one service to another or needing to access multiple services. Systems of care must provide the range of services from developmental surveillance, promotion, prevention to intensive interventions. Currently there is evidence of effective models of systems of care for older children and adults. Incentives are needed at all levels of government (federal, state and local) to promote the adoption of systems of care for the youngest children and their families in order to promote optimal social and emotional development and prevent and/or to intervene early in challenging behavior. Systems of care must address service requirements that restrict access to services such as restrictive eligibility criteria (e.g., strict income or severity criteria) or limitations on how funds can be spent that serve as barriers to collaborative service arrangements (e.g. sharing of resources or restrictions about who can be a provider) or restrictions on location of service (e.g. home, pediatrician office, consultation in natural environments such as child care, etc.).

IV. **Systems should be family-centered.** Families should help design systems of care for young children. Families need to be in the center of decisions related to services and supports for young children. Families' needs and strengths associated with promoting social emotional development of their children need to be addressed including increasing parenting skills and providing assistance in accessing family identified supports that are needed (housing, nutrition, employment, etc.).

V. **The early care and education, mental health, health and child welfare work force must be able to provide collaborative, comprehensive, individualized, evidence-based services and systems or to be able to identify and refer to such services and systems. The work force must be skilled in**

evidence-based promotion, prevention and intervention strategies. There is a body of evidence-based practices that every member of the work force must be aware of and skilled in whether they work in early childhood, health, mental health or child welfare. The decisions that personnel in all these arenas make on a daily basis related to children and families can make a difference as to whether that child or family receives services that are scientifically proven to have a positive impact. Personnel in all these professions need the resources and working conditions to provide evidence-based services. Therefore, the system must ensure there is adequate funding, reasonable case loads, collaborative arrangements, professional development opportunities and wages and benefits to ensure that they know about and can practice what works.

Recommendations for Further Research Efforts

Based upon the synthesis and the conclusions, we make the following recommendations for further research. The focus of the synthesis is on systems of service delivery in health, mental health, child welfare, early education and care for young children at risk of or who have challenging behavior. The majority of the literature specific to systems is in the form of what we conceived as level 5 or 6 evidence representing consensus documents of teams, task forces or multiple authors or descriptions of systems features designed to result in positive outcomes for young children. There was little level 1-4 evidence related to systems of service delivery to young children with challenging behavior. Most of the robust evidence-based literature is on model programs and intervention strategies. There are very few instances of systems research studies related to young children with challenging behavior reported in peer reviewed journals or systems studies that included evidence of positive outcomes for young children.

- **Agencies currently involved in children’s social and emotional development and challenging behavior (OERI, OSEP, NIMH, ACYF, SAMHSA, MCH, etc.), should launch a collaborative, multi-year effort to study the development and implementation of systems of care for children ages birth to six years that promote the social and emotional well being of children and families and support the use of evidence-based prevention and intervention strategies with children and families.** Such a study could build upon several small local initiatives that are experimenting with similar concepts. The study(ies) should infuse these local initiatives with adequate financial and research resources to ensure a system of care that reflects the conclusions of the synthesis, incorporates a rigorous evaluation design and data collection system and can be replicated or brought to scale.
- **The science of promotion, prevention, and intervention efforts has not expanded far beyond the development of model demonstration programs.** Very little evidence provides guidance on the implementation of those practices in large-scale systems. **Research efforts must examine the transportability of evidence-based practice to usual care settings** (Schoenwald & Hoagwood, 2001). Factors that must be considered include

variations in service arrangements including training, supervision, and knowledge-base of practitioners; service delivery patterns including collaborative or integrated services systems or system of care models; demographic characteristics of the client population, family participation, and access for families.

- **Descriptive studies are needed that document what services and systems are currently available and used by young children and their families, what are the strengths and weakness of these as described by key stakeholders, families and providers, and what data are available that document behavioral outcomes for children.** Such descriptive studies could document the current gaps, overlaps, and disincentives to family access in typical community services as well as factors related to family participation in, satisfaction with, and continued enrollment in programs and systems.

Research efforts should seek to identify the specific program and system features needed to optimally intervene with young children who are having problem behavior such as resources, staff ratios, background and training, collaboration with experts, time, family involvement and interagency collaboration. The examination of service system features should explore questions related to a) the features that are particular to providing support to the birth-to- three population in contrast to preschool children (ages 3-6), and b) the particular features that are most likely to support the use of evidence-based practices.

Systems of Service Delivery: A Synthesis of Evidence Relevant to Young Children With or At Risk of Challenging Behavior

Introduction

This document presents a synthesis of the evidence-base pertaining to systems of service delivery for young children with or at risk of challenging behavior and their families. The document was prepared by the Center for Evidence-based Practice: Young Children with Challenging Behavior, a national research center funded by the Office of Special Education Programs of the U.S. Department of Education. The Center's goals are to: (1) identify and describe the current state of knowledge pertaining to evidence-based practices for young children with challenging behavior, (2) promote widespread awareness and adoption of these practices, and (3) add to the base of practical knowledge through a program of applied research. This synthesis document constitutes part of the Center's efforts to achieve the first of these goals. Parallel syntheses are being prepared in the areas of service utilization and effective intervention practices for young children with or at risk of challenging behavior and their families.

The purpose of the synthesis is to present a concise picture of the state of empirical knowledge relating to the effectiveness of service systems or system components to support positive outcomes for young children at risk of or who have challenging behaviors. Thus systems of prevention and intervention are included in this synthesis. This picture is intended to: a) convey the nature of what is known about service systems and their ability to support positive outcomes for young children at risk of or who have challenging behavior; b) identify the most conspicuous gaps in current knowledge and; c) make recommendations about prominent needs to be addressed by applied research.

The approach used to develop the synthesis involved a focused process of information gathering with input from Center personnel as well as authorities from multiple disciplines including infant and child mental health, child care, child welfare, and education. The input obtained from national authorities included recommendations regarding the definition of key terms, the location of pertinent resources, and the specification of bibliographic entries. As input was received, the authors from the Center distilled the significant knowledge that emerged from the synthesis, summarized the knowledge and the most obvious gaps, and made recommendations for future research.

Literature Review and Synthesis Procedures

The literature identification and review process was designed to identify the evidence related to systems of service delivery or system features that support positive outcomes for young children with or at risk of challenging behavior. An initial step was to establish definitions, questions to consider and a conceptual framework for determining the strength of evidence in the literature base.

The goal of the synthesis was developed from the RFP for the project and from the research goals of the project workscope. The definitions were determined by the project management team. The guiding questions or parameters of the literature review and synthesis were derived from previous work in early intervention and systems research conducted by the Center's faculty, the synthesis team and others in the field. The parameters/guiding questions are related to effective program or system features that have been reported as supporting the delivery of effective prevention or intervention services for young children and their families. These parameters framed the criteria for searching the literature base, for instance, program or system features searched for included: comprehensiveness, individualization, family participation, service coordination and agency collaboration, eligibility for and access to services, finance, and work force, as well as the age and population features to include in the literature search criteria (Cohen & Kaufman, 2000; Division for Early Childhood of the Council for Exceptional Children [DEC], 1999; Harbin & Salisbury, 2000; Hayden, Frederick, & Smith, 2003; Knapp, 1995; Knitzer, 1982; Smith & Rose, 1993; Smith, Salisbury, & Rose, 1992).

This document is a work in progress. It will be updated periodically and submitted to leading authorities and professional organizations for evaluative review and revision. As the document is revised, various formats will be developed and disseminated to help inform the diversity of stakeholders (i.e., parents, administrators, teachers, legislators, etc.) concerned with young children with or at risk of challenging behavior.

Definitions

System of service delivery –we found no definition of *system* or *system of service delivery* as it pertains to young children with or at risk of challenging behavior. There are various generic definitions of system. For instance, Webster's dictionary defines a *system* as “a regularly interacting or interdependent group of items forming a unified whole”. Senge, Kleiner, Roberts, Ross, & Smith (1994) define *system* as “a perceived whole whose elements ‘hang together’ because they continually affect each other over time and operate toward a common purpose”.

Defining the term *system* was a critical first step in our efforts to seek and synthesize the literature on systems of service delivery in that it is important to delineate systems (i.e., systems are comprised of groups of items or elements that perform as a whole, etc. see above) from intervention strategies, services, programs or funding streams that serve singular purposes. Studies of intervention strategies represent the vast majority of the empirical literature related to young children with challenging behavior (Center for Evidence-Based Practice [CEBP], 2002a). Second, there are numerous federal and state funding streams or programs that provide resources and regulations related to providing a particular service, e.g., Medicaid, the Individuals with Disabilities Education Act (IDEA), Head Start, Child Welfare Services Program, etc. (Cohen & Kaufmann, 2000; CEBP, 2002b; Wishman, Kates & Kaufmann, 2001). However, a frequently cited concern related to young children with or at risk of challenging behavior or mental health problems is the fact that services and programs are unitary and uncoordinated, i.e., not functioning as a whole and therefore, not a system (Infant Mental Health Forum, 2000; Kaufmann & Dodge, 1997). The charge of this synthesis, therefore, is not on interventions, programs or funding streams but on the macro focus of the system for delivering the programs and services.

The difference between an *intervention service or strategy, program* and a *system* can be found in IDEA, Part B and the “vision” of IDEA, Part C. IDEA Part B has the goal of providing federal dollars and regulations for the provision of special education and related services for children with disabilities through public education agencies. Thus, it is singular in purpose, to provide support for intervention services through a single agency. While there is a provision that education agencies should collaborate with other agencies that serve children with disabilities, there is no requirement to form a unified system or whole. In contrast, Part C of IDEA provided a vision of a *system* of early intervention services. This vision recognizes the complex needs of infants and toddlers with disabilities and their families and that there is no one service or program that can meet all their needs, thus acknowledging the need for a unified whole of elements (services) that “hang together”, operating toward a common purpose; e.g. creating a system of services.

A system may be comprised of several programs, funding streams or services. Thus, we defined a system of service delivery for our purposes as:

a system (unified whole) of programs/resources/policies/services (federal, state, local, program level) that impact positively on children’s social-emotional development and behavior.

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Our review of the literature included the consideration of the level or type of evidence that supported conclusions regarding service systems and effectiveness in providing supports to young children at risk of or who have challenging behavior and their families. We classified the empirical literature according to the following types of evidence:

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Young children – for the purpose of the Center and the synthesis, “young children” was defined as the entire population of children between the ages of birth and 6.

Challenging behavior – for the purpose of the Center, “challenging behavior” is defined as any repeated pattern of behavior, or perception of behavior, that interferes with or is at risk of interfering with optimal learning or engagement in pro-social interactions with peers and adults. Challenging behavior is thus defined on the basis of its effects. While some children’s challenging behaviors are developmentally normative and effectively addressed by adult vigilance and the use of appropriate guidance procedures, the Center is focused on identifying evidence-based practices that prevent and/or address challenging behaviors that are persistent or unresponsive to those approaches. Common topographies of those behaviors include prolonged tantrums, physical and verbal aggression, disruptive vocal and motor responding (e.g., screaming, stereotypy), property destruction, self-injury, noncompliance, and withdrawal.

For infants and toddlers, challenging behavior must be considered within the context of the relationship of the child to caregivers. Behavior that is challenging for example, may manifest as attachment difficulties, sleeping and eating difficulties, excessive crying, and difficulty in soothing. Challenging behaviors may be defined as behaviors that interfere with the development and maintenance of reciprocal, positive, and nurturing relationships with the parent or caregiver. Challenging behavior, as a pattern of behavior, is noted by considering the relationship of the child and adult and the difficulties that are manifested in the dyadic exchange. These behaviors may be the result of biological or environmental factors that affect infant

development and, as a consequence, the infant's relationship with a caregiver or they may be related to challenges (i.e., neglectful care-giving, parental mental health, etc.) that affects the ability of the caregiver in establishing a nurturing and responsive relationship.

Questions and Parameters to Consider

The goal of the synthesis was to examine the literature to yield an understanding of the empirical knowledge related to the effectiveness of service systems in addressing the needs of young children with challenging behavior and their families. We were interested in gaining access to data that may provide an understanding of service systems or systems of care, or in the absence of research on these complex systems, we agreed to review literature related to components and practices of systems that are effective. Our inquiry was guided by a desire to understand the following:

- What are the shared values, principles, practices, and recommendations for effective practices across systems, programs or services?
- What service systems or programs have shown evidence of affecting positive outcomes in children's social-emotional or behavioral development?
- What are the systems or components of systems that have shown positive outcomes in children's social-emotional or behavioral development?

Literature Review

Several procedures were used to identify literature that would describe evidence-base practice within service systems. The research literature was reviewed to identify data-based reports of service system interventions, service system evaluations, and model programs that indicated positive outcomes (i.e., improvements in social development, mental health, or problem behavior) for young children with challenging behavior. In addition, the literature review process included the identification of task force reports, documents, and policy papers that described effective practices within service systems, provided policy guidance on the design of service systems, or provided consensus reports of organizations or task force recommendations for the development of effective service systems. Our search of the literature included published research, evaluation reports, literature reviews, national policy statements or other consensus documents, and program descriptions as well as documents that were referenced by national reports or authorities and available through the world wide web. We did not include reports that were unpublished or not available to the general public (e.g., through the world wide web).

The literature search was conducted using the following major and minor descriptors to capture the population of interest: early intervention, preschool, early childhood, infants, young children, and child care. Those descriptors were used with the following major and minor descriptors to capture the literature of interest: social-emotional development, mental health, discipline, child guidance, challenging behavior, maladaptive behavior, and social skills. In addition, we used the descriptors of policy, administration, service system, and systems with the previous descriptors to ensure that literature applicable to policy and administration was identified. Those descriptors were used with the ERIC, Psych-Info, and Med-line data bases to identify the relevant literature that has been published since 1982 until the development of this report (May, 2002). We confined the search to literature that dealt with or included young children (birth to age six).

With each document obtained, the reference list was reviewed against the list of identified literature to further guard against omissions and oversights.

In addition to a traditional process of identifying literature through data bases, we networked with colleagues, organizations, and agencies to ensure that our review included task force reports, consensus documents, evaluation reports, and recommendations to the field. In that effort, we also used the world wide web to locate relevant documents by using the same descriptors used in the data base search and “visited” the home page of national organizations and federal agencies concerned about the well-being of children at risk of or who have challenging behavior. Those organizations and agencies included: American Academy of Child and Adolescent Psychiatry (AACAP), American Psychological Association (APA), the Division for Early Childhood of the Council for Exceptional Children (DEC), Federation of Families for Children’s Mental Health, National Association for the Education of Young Children (NAEYC), National Association of Child Care Resource and Referral Agencies (NACCRRA), National Center for Children in Poverty (NCCP), National Center for Early Development and Learning, National Early Childhood Technical Assistance Center (NECTAS), National Head Start Association (NHSA), National Institute of Mental Health (NIMH), National Mental Health Association (NMHA), National Research Council of the National Academies of Sciences, National Technical Assistance Center for Children’s Mental Health, Research and Training Center for Children’s Mental Health, U.S. Department of Education, U.S. Department of Health and Human Services, and Zero to Three.

As a final check to ensure that the literature reviewed was comprehensive, we provided the list to a resource and review team consisting of: Maureen Conroy, Department of Special Education, University of Florida; Gloria Harbin, Frank Porter Graham Child Development Center, University of North Carolina at Chapel Hill; Mario Hernandez, Florida Mental Health Institute, University of South Florida; Gail Joseph, University of Colorado at Denver; Roxane Kaufmann, National Technical Assistance Center for Children’s Mental Health, Georgetown University; Jane Knitzer, National Center for Children in Poverty, Columbia University; Lynette Kimes, Zero to Three; Maria Synodi, Connecticut Department of Education; Sharon Walsh, Walsh Taylor, Inc. The resource and review team was asked to review the list of literature and identify missing resources that were relevant to our review.

We acknowledge that there is a great deal of knowledge that is not included in this synthesis that has been generated by model programs and local community innovations that either focus on direct service (vs. systems) or did not meet our criteria for inclusion into the pool of publicly available literature or reports.

Outline

This synthesis document is organized in the following manner: first, the findings from the synthesis of the literature review is presented and organized by types of evidence, e.g. empirical data (Types 1-4 evidence) is presented, and then consensus perspectives (Types 5 & 6 evidence documents). Second, a set of conclusions drawn from the synthesis is presented. Finally a list of recommendations to address conspicuous gaps in our knowledge with an emphasis on which gaps should be most urgently addressed through a program of applied research.

FINDINGS

We have organized the summary of findings from the literature review by types of evidence. First, we summarize the empirical evidence (Types 1-4), then the consensus reports (Types 5 & 6).

Empirical Evidence (Type 1-4 evidence)

The following section presents a summary and major findings from the empirical sources of the synthesis of the existing knowledge base related to systems of services or components of systems that result in positive outcomes for young children at risk of or who have challenging behavior. *We found little empirical research of the effectiveness of systems of service delivery for young children with or at risk of challenging behavior.* In the absence of empirical research on systems of service delivery for this population, we organize the synthesis by: 1) empirical data on prevention and intervention *programs* that have implications for systems and that have data on their effects on children's social/emotional development and/or challenging behavior, and 2) by the *components of systems* of service delivery: comprehensiveness and individualization, family support, collaboration and coordination, eligibility and access, finance, and work force.

Programs

There are a host of programs that have been developed to respond to the prevention and intervention needs of young children with social-emotional problems, mental health problems, or problem behavior that have evidence of their effectiveness. While these programs do not constitute a service system, they provide demonstrations of practices and model components that may be valuable for service system integration.

In our synthesis, we include a review of the few programs that provide effectiveness data on improving the social, emotional, or behavioral outcomes of young children. There are many well-conceptualized programs that are based on empirical literature, effective practice research, and consensus recommendations for effective programs that do not appear in this review. Programs were not included if research or evaluation data were not available to support the promotion of positive outcomes (e.g., reduced problem behavior or promotion of social competence) for children with challenging behavior. This review includes prevention programs that were designed to address the needs of children at-risk for poor academic and social outcomes that document improvements in problem behavior or social competence and intervention programs designed to reduce problem behavior and facilitate social skill development.

Prevention Programs. Evaluation data on prevention programs included longitudinal measures of the child's behavior problems, emotional development, and teacher's perceptions of child behavior, juvenile delinquency, and criminal behavior. Prevention programs that provide those data included: Prenatal/Early Infancy Project (Olds, et al. 1997; Olds, Henderson, Tatelbaum & Chamberlin, 1988), Dare to be You (Miller-Heyl, MacPhee, & Fritz, 1998), Yale Child Welfare Project (Seitz, Rosenbaum, & Apfel, 1985), Perry Preschool Project (Schweinhart & Weikart, 1980; Schweinhart, Barnes, Weikart, Barnett, & Epstein, 1993), Chicago Child-Parent Center

(Reynolds, 1994) Infant Health Development Project (Ramey et al., 1992), Houston Parent Child Development Center (Johnson & Breckenridge, 1982; Johnson & Walker, 1991), and Syracuse Family Development Research Program (Honig & Lally, 1982; Lally, Mangione, & Honig, 1988).

In our review of the prevention programs, the following conclusions are relevant to the development of effective service systems:

- Prevention efforts have important effects for low-income families who have multiple risks. The evaluation of these prevention efforts suggest that programs are particularly powerful in mediating risk factors and promoting meaningful outcomes (Honig & Lally, 1982; Johnson & Breckenridge, 1982; Johnson & Walker, 1991; Lally et al., 1988; Olds et al., 1997; Olds et al., 1988; Reynolds, 1994; Schweinhart & Weikart, 1980; Schweinhart et al., 1993).
- Prevention programs generate government and tax payer savings in the following areas: increased tax revenues through the employment gains of mothers and participating children who are more likely to graduate from high school; reduced expenditures for special education, emergency room visits, and grade repetition; and lower juvenile justice costs (Honig & Lally, 1982; Lally et al., 1988; Olds, et al., 1997; Olds et al., 1988; Reynolds, 1994; Schweinhart & Weikart, 1980; Schweinhart et al., 1993).
- Prevention programs include both a child and family service component (Honig & Lally, 1982; Lally et al., 1988; Miller-Heyl et al., 1998; Ramey et al., 1992; Reynolds, 1994; Schweinhart & Weikart, 1980; Schweinhart et al., 1993).
- Prevention programs that offered a center-based early education program provided high quality programs with small teacher-child ratios and well-trained staff (Honig & Lally, 1982; Johnson & Breckenridge, 1982; Johnson & Walker, 1991; Lally et al., 1988; Ramey et al., 1992; Reynolds, 1994; Schweinhart & Weikart, 1980; Schweinhart et al., 1993; Seitz et al., 1985).

Intervention Programs. Four model programs were identified that provided data on the effectiveness of intervention procedures for children engaging in challenging behavior: Early Screening and Self-determination Curriculum (Forness et al., 2000), Regional Intervention Program (Strain & Timm, 2001; Timm & Rule, 1981), Incredible Years (Webster-Stratton, 1998; Webster-Stratton, Reid, & Hammond, 2001), and First Steps (Walker et al, 1998; Feil, Severson & Walker, 1998).

In reviewing the four intervention programs described above, the following conclusions are relevant for the development of service systems to address the needs of children with challenging behavior:

- The use of a screening measure within early education environments can identify children who will benefit from systematic intervention efforts (Feil et al, 1998; Forness et al., 2000; Walker et al., 1998).
- All of the reviewed model intervention programs provided instruction to parents and children (Feil et al., 1998; Forness et al., 2000; Strain & Timm, 2001; Timm & Rule, 1981; Walker et al., 1998; Webster-Stratton, 1998; Webster-Stratton et al., 2001).

- The intervention used for children was focused on appropriate social skills, compliance, self-regulation and academic engagement (Feil et al., 1998; Forness et al., 2000; Strain & Timm, 2001; Timm & Rule, 1981; Walker et al., 1998; Webster-Stratton, 1998; Webster-Stratton et al., 2001).
- The curriculum used with parents focused on both behavior management and strategies to support their child's development (Feil et al., 1998; Forness, et al., 2000; Strain & Timm, 2001; Timm & Rule, 1981; Walker et al., 1998; Webster-Stratton, 1998; Webster-Stratton et al., 2001).
- Intervention programs that are implemented with children who are three to five years old and engaging in challenging behavior can be very effective and those effects may be maintained as the child grows older (Feil et al., 1998; Forness et al., 2000; Strain & Timm, 2001; Timm & Rule, 1981; Walker et al., 1998; Webster-Stratton, 1998; Webster-Stratton et al., 2001).

Systems Components

In the absence of research evidence on actual systems or systems of care that promote young children's social-emotional well-being or effectively address challenging behavior, we reviewed and summarized the literature on practices within the components of systems that have evidence of effectiveness. The components include: comprehensiveness, individualization, family support, collaboration and coordination, eligibility and access procedures, finance policies and work force considerations.

Comprehensiveness and Individualization. The importance of individualized and comprehensive services for young children at risk of or with challenging behavior is evident within prevention and intervention programs and systems. Individualization refers to the delivery of services and supports in a manner that matches the individual needs of a child and the family. Comprehensiveness refers to the ability of a system to provide a wide array of services that may meet varied individualized educational, developmental, mental health, health, and other support needs of children and families.

In an examination of both prevention and intervention service systems, the following conclusions may be made about individualization and comprehensiveness:

- Effective prevention programs provide prenatal counseling to mothers with an emphasis on parenting, caregiving, and health care (Daro & Harding, 1999; Love et al., 2002)
- Comprehensive services, implemented earlier (prenatally) rather than later, emphasizing key services, demonstrate greater impacts on positive child outcomes (Love et al., 2002).
- Health care prevention models use periodic screenings to monitor children's growth and development and parent-child interactions (Daro & Harding, 1999; Duggan et al., 1999).
- Effective programs provide comprehensive services that are tailored to the community and settings in which they operate (Administration for Children, Youth and Families [ACYF], 2001a; Hanson, Deere, Lee, Lewin & Seval, 2001; Love et al., 2002; Vinson, Brannan, Baughman, Wilce & Gawron, 2001).
- Quality early education programs (i.e., those meeting standards of Developmentally Appropriate Practice (DAP) are related to outcomes in social-emotional development and

reduced problem behavior. DAP emphasizes the implementation of individually appropriate and culturally responsive services and supports (Helburn et al., 1995; Love, Meckstroth, & Sprachman, 1997; National Research Council, 2001; NICHD, 1999 Level 1; Peisner-Feinberg et al., 1999; Phillips, McCartney, & Scarr, 1987).

- Individualization for children and families is achieved through the development of an individualized service plan in partnership with the family that considers family needs within multiple areas (Sandall, McLean, & Smith, 2000; Vinson et al., 2001).
- Case management or service coordination is provided to assist families in accessing services to match families' individual needs (Lourie, Stroul & Friedman, 1998; Sandall et al., 2000; Simpson, Jivanjee, Koroloff, Doerfler, & Garcia, 2001; Vinson et al., 2001).
- The provision of comprehensive services requires collaboration with other agencies and service providers in the community (ACYF, 2001b; Daro & Harding, 1999; Duggan et al., 1999; Infant Mental Health Forum, 2000; Sandall et al., 2000; Vinson et al., 2001).

Family Support. The involvement and support of families within early intervention and prevention programs is a critically important and relevant dimension to consider in the structure of the service system. The empirical evidence for family involvement and family support indicates that programs providing both child-centered interventions and family support models are more effective than programs that focus only on the family (Yoshikawa, 1995). Our examination of service systems that provide prevention and intervention services ranged greatly in how families were involved. Our review of the evidence of effective practice and family support resulted in the following conclusions:

- Family support programs involve a focus on the entire family system (Sandall et al., 2000; Simpson, et al., 2001; Trivette & Dunst, 2000; Vinson et al., 2001).
- Family support efforts operate from a strengths-based perspective (Lourie et al., 1998; Trivette & Dunst, 2000).
- Family support efforts view families as partners in the identification of family needs and intervention supports (ACYF, 2001b; Infant Mental Health Forum, 2000; Sandall et al., 2000).
- Family access to services that are family-centered and operate flexibly is important to families. Families may select lower quality early education and care options because they are more flexible and establish better relationships with families (Levine-Coley, Chase-Lansdale, & Li-Grining, 2001; Trivette & Dunst, 2000).
- Family advocates, case coordinators, or service coordinators are assigned to assist the family in identifying needs and accessing services (Lourie et al., 1998; Sandall et al., 2000).
- Family services are driven by an individualized plan that is determined by family needs (ACYF, 2001b; Sandall et al., 2000).
- Family support programs place a value on the importance of providing culturally competent services (Sandall et al., 2000)
- Services and supports for families include parenting education, parenting support groups, peer mentors, child care, respite care, home visiting, access to community services, and case management (Harrington, Perez-Johnson, Meckstroth, Bellotti, & Love, 2000; Sandall et al., 2000).

- Families are involved in the planning and evaluation of program services including serving on policy councils (ACYF, 2001a; Sandall et al., 2000; Vinson et al., 2001)

Collaboration and Coordination. There are many early childhood and early intervention service systems at the community, state, and federal level. In general, service systems are viewed as fragmented and not coordinated resulting in both duplication of efforts and gaps in service delivery (General Accounting Office [GAO], 1992; GAO, 2000; Shonkoff & Phillips, 2001; U.S. Public Health Service, 2000; Wishman et al., 2001). In the review of effective prevention and intervention service systems, the following practices regarding collaboration and coordination were evident:

- Program staff assist families in identifying and accessing resources from community programs (ACYF, 2001b; Duggan et al., 1999; Love et al., 2002; Trivette & Dunst, 2000; Vinson et al., 2001).
- Service systems attempt to engage in joint planning, resource sharing, and service coordination with other service systems. The absence of formal structures to ensure coordination presents barriers to systemic collaboration (Daro & Harding, 1999; Fenichel, 2001; Harbin, 1996; Harbin et al., 1998; Shonkoff & Phillips, 2001).
- Service systems recognize the need to coordinate and collaborate at the local level to ensure that families may access the necessary resources and supports (ACYF, 2001b; Daro & Harding, 1999; Hanson et al., 2001; Harbin & Salisbury, 2000; Love et al., 2002; Vinson et al., 2001).

Eligibility and Access. There is a growing national awareness of the importance of ensuring early identification and intervention with children who are at-risk for or have delays in social-emotional development, problem behavior, and mental health development (National Institute of Mental Health, 2001; Shonkoff & Phillips, 2001; U.S. Public Health Service, 2000). The quality of a program is related to positive social/emotional and behavioral outcomes. And yet, access may be restricted to children and families due to eligibility criteria, funding sources, diagnostic requirements and other requirements. The review of effective intervention and prevention programs indicated the following issues related to eligibility and access:

- Access to high quality early education programs is elusive for the majority of families. Families with the economic means are more likely to access high quality programs (Helburn, et al., 1995; Hofferth, Henke, & West, 1998; National Research Council, 2001; Shonkoff & Phillips, 2001).
- Program eligibility for more intensive services (e.g., system of care) are restricted to children who are in the most serious need and as a result do not enroll young children whose problems appear less serious (CEBP, 2002b; Infant Mental Health Forum, 2000).

Finance. The funding of services and supports for young children with social-emotional challenges, problem behavior, or mental health concerns and their families does not reflect the evidence we have for effective services or systems. Funding for services is often restricted to diagnostic eligibility criteria, services that are directly provided to the child instead of the family, and does not consider the importance of natural environments and the importance of engaging

caregivers (e.g., early educators, family members) in service delivery (Knitzer, 2000). The following concerns and realities affect the financing of services across service systems:

- Managed health care, HMO's, and private insurance restrict access to needed services through diagnostic, eligibility, or medical necessity requirements (Kaplan-Sanoff, Lerner, & Bernard, 2000; Knitzer, 2000).
- A financing policy is needed that would shape service integration and coordination efforts (CEBP, 2002a; Infant Mental Health Forum, 2000; Knitzer, 2000).

Work Force. Issues of training, supervision, and appropriate wages and working conditions is a concern within every service system reviewed. The provision of prevention and intervention services for young children with social-emotional challenges, problem behavior, or mental health concerns and their families requires a deep knowledge of child development, family dynamics, clinical skills, and ability to provide family-centered and culturally responsive services (Bredenkamp & Copple, 1997; Knitzer, 2000; Sandall et al., 2000). Workforce concerns across the synthesis were:

- Personnel need training in early indicators of mental health problems (Knitzer, 2000).
- One of the strongest predictors of a high quality early education program is the preparation level of the teacher and teacher compensation. Every state requires a bachelor's degree and teaching certificate for kindergarten teachers although similar standards are not in place for preschool educators (Helburn et al., 1995; National Research Council, 2001).
- Early educators and clinical staff must have access to supervision and professional development (ACYF, 2001b; Infant Mental Health Forum, 2000; National Research Council, 2001; Sandall et al., 2000).
- Case loads and early education and care classroom or group ratios are a concern and related to the provision of high quality services (Harbin & Salisbury, 2000; Helburn et al., 1995; National Research Council, 2001).

Consensus Documents and Descriptions of Systems Features (Type 5 and 6 Evidence)

The following summary reports the findings from the review of consensus documents (Type 5 & 6 evidence) that recommend systems or systems components for effectively promoting social-emotional development or addressing challenging behavior in young children.

National Position/Policy Statements

Many national associations and agencies have issued position or policy statements regarding how children's mental health, social emotional development or challenging behavior should be addressed nationally. These positions or policy statements represent a consensus that draws on the available evidence as well as an apparent agreement among diverse groups about the parameters of a system of care for young children that promotes well being, prevents social emotional problems and provides effective interventions. This consensus of thought as represented in national position/policy statements is summarized below with the system component that is related in bold.

- A system must be a **comprehensive** network or system of care that a) promotes healthy development, b) prevents social emotional problems and challenging behavior for children and families at risk, including surveillance and referral by primary care physicians and, c) effectively intervenes with mental health problems and challenging behavior when they occur. Systems need to be able to provide a range of services and supports to meet the **individual** needs of children and families including health, mental health, child welfare and early care and education and to provide such services in natural settings; such interlocking services would provide monitoring and tracking to ensure that services are available to or follow children regardless of which system they may transition to (American Academy of Child & Adolescent Psychiatry [AACAP], 2002; American Academy of Pediatrics [AAP], 2001; DEC, 1998a, 1999, 2000a, 2000b, 2002; National Association of School Psychologists [NASP], 1998, 1999; National Center for Children in Poverty [NCCP], 2001a, 2001b; National Technical Assistance Center for Children's Mental Health [NTCCMH], 2002; National Mental Health Association [NMHA], 2000; Federation of Families for Children's Mental Health [FFCMH], n.d.a, n.d.b).
- A system must consider **families** as partners in planning and implementation; provide family education and training in effective skills and knowledge in promotion, prevention and intervention; provide service coordination or case management assistance for/with families (AACAP, 2002; DEC, 1998a, 1999; NCCP, 2001b; National Association for the Education of Young Children [NAEYC], 1996; NASP, 1999, 2001; NTCCMH, 2002; NMHA, 2000; FFCMH, n.d.b).
- Professionals and family members need to **coordinate and collaborate** between home and program as well as with a range of services and agencies needed by families and children and to evaluate and intervene collaboratively to ensure successful outcomes; (AACAP, n.d.; AAP, 2001; DEC, 1999; NCCP, 2001a, 2001b; FFCMH, n.d.b).
- Medicaid and other third party insurance related **finance** barriers to promotion, prevention and intervention systems of care for all children and families in natural settings need to be removed. Amounts of resources need to be increased (AAP, 2001; NASP, 1998; NMHA, 2000; DEC, 2000b; FFCMH, n.d.a).
- **All** children and families regardless of which system they are in, e.g., child welfare, mental health, early intervention, etc., should have access to **high quality** child care, health/mental health services and other family supports (AAP, 1996; American Public Human Services Association [APHSA], 2002; DEC, 1998a; National Association of Child Care Resource and Referral Agencies [NACCRRRA], 2001; NAEYC, 1996; NASP, 1998; National Head Start Association [NHSA], 2002; NCCP, 2001a).
- **Personnel** in early care and education, early intervention/early childhood special education as well as courts, pediatrics, mental health, and child welfare need knowledge and skills in effective prevention and intervention strategies, cultural competence, self-reflection, how to share and respect various professional philosophies, how to collaborate with various agencies needed by families and children and how to function as a transdisciplinary team (AACAP, 2002; AAP, 1996, 2001; DEC, 1998b, 1999, 2002; NCCP, 2001a, 2001b; NAEYC, 1995; NTCCMH, 2002; NMHA, 1998).
- There should be state and national **standards** to ensure quality of early care and education, mental health/health and other family supports. Outcomes, efficacy and cost should be tracked (NCCP, 2001a, 2001b; NAEYC, 1999; NASP, 1998).

Conclusions from the Synthesis

The following conclusions are made from the synthesis of the empirical literature, the consensus reports and positions, and descriptions of systems features.

I. Challenging behavior can be prevented in many cases and social and emotional performance can be promoted. Therefore, systems must facilitate and support a comprehensive array of services from prevention to intensive intervention. Second, the system must support the delivery of high quality services. The quality of early education and care environments is strongly related to the development of social competence. Children who are most at-risk are especially vulnerable when placed in low quality early education and care environments. Evidence-based programs and system components need to be brought to scale nationally and systems implemented to support them. The most robust evidence of effectiveness in promoting social competence and intervention strategies with challenging behavior are derived from the study of several effective programs.

II. Systems must be comprehensive and provide individualized service in order to address the complex and varied needs of children and families. Services should be individualized related to child and family needs, culture and language.

III. In the absence of one comprehensive service delivery system, systems must be developed from interlocking and interconnected services and programs into a system of care. Systems of care refer to the weaving together of multiple existing services or programs into a cohesive, collaborative system that reduces overlap, fills gaps and addresses transition issues for children moving from one service to another or needing to access multiple services. Systems must provide the range of services from developmental surveillance, promotion, and prevention to intensive interventions. Currently there is evidence of effective models of systems of care for older children and adults. Incentives are needed at all levels of government (federal, state and local) to promote the adoption of systems of care for the youngest children and their families in order to promote optimal social and emotional development and prevent and/or to intervene early in challenging behavior. Systems of care must address service requirements that restrict access to services such as restrictive eligibility criteria (e.g., strict income or severity criteria) or limitations on how funds can be spent that serve as barriers to collaborative service arrangements (e.g. sharing of resources or restrictions about who can be a provider) or restrictions on location of service (e.g. home, pediatrician office, consultation in natural environments such as child care, etc.).

IV. Systems should be family-centered. Families should help design systems of care for young children. Families need to be in the center of decisions related to services and supports for young children. Families' needs and strengths associated with promoting social emotional development of their children need to be addressed including increasing parenting skills and providing assistance in accessing family identified supports that are needed (housing, nutrition, employment, etc.).

V. The early care and education, mental health, health and child welfare work force must be able to provide collaborative, comprehensive, individualized, evidence-based services and systems or to be able to identify and refer to such services and systems. The work force must be skilled in evidence-based promotion, prevention and intervention strategies. There is a body of evidence-based practices that every member of the work force must be aware of and skilled in whether they work in early childhood, health, mental health or child welfare (CEBP 2002a & 2002b). The decisions that personnel in all these arenas make on a daily basis related to children and families can make a difference as to whether that child or family receives services that are scientifically proven to have a positive impact. Personnel in all these professions need the resources and working conditions to provide evidence-based services. Therefore, the system must ensure there is adequate funding, reasonable case loads, collaborative arrangements, professional development opportunities and wages and benefits to ensure that they know about and can practice what works.

Recommendations for Further Research Efforts

Based upon the synthesis and the conclusions, we make the following recommendations for further research. The focus of the synthesis is on systems of service delivery in health, mental health, child welfare, early education and care for young children at risk of or who have challenging behavior. The majority of the literature specific to systems is in the form of what we conceived as Type 5 or 6 evidence representing consensus documents of teams, task forces or multiple authors or descriptions of systems features designed to result in positive outcomes for young children. There was little Type 1-4 evidence related to systems of service delivery to young children with challenging behavior. Most of the robust evidence-based literature is on model programs and intervention strategies. There are very few instances of systems research studies related to young children with challenging behavior reported in peer reviewed journals or systems studies that included evidence of positive outcomes for young children.

- **Agencies currently involved in children’s social and emotional development and challenging behavior (OERI, OSEP, NIMH, ACYF, SAMSA, MCH, etc.), should launch a collaborative, multi-year effort to study the development and implementation of systems of care for children ages birth to six years that promote the social and emotional well being of children and families and support the use of evidence-based prevention and intervention strategies with children and families.** Such a study could build upon several small local initiatives that are experimenting with similar concepts. The study(ies) should infuse these local initiatives with adequate financial and research resources to ensure a system of care that reflects the conclusions of the synthesis, incorporates a rigorous evaluation design and data collection system and can be replicated or brought to scale.
- **The science of promotion, prevention, and intervention efforts has not expanded far beyond the development of model demonstration programs.** Very little evidence provides guidance on the implementation of those practices in large scale

systems. **Research efforts must examine the transportability of evidence-based practice to usual care settings** (Schoenwald & Hoagwood, 2001). Factors that must be considered include variations in service arrangements including training, supervision, and knowledge-base of practitioners; service delivery patterns including collaborative or integrated services systems or system of care models; demographic characteristics of the client population, family participation, and access for families.

- **Descriptive studies are needed that document what services and systems are currently available and used by young children and their families, what are the strengths and weakness of these as described by key stakeholders, families and providers, and what data are available that document behavioral outcomes for children.** Such descriptive studies could document the current gaps, overlaps, and disincentives to family access in typical community services as well as factors related to family participation in, satisfaction with, and continued enrollment in programs and systems.
- **Research efforts should seek to identify the specific program and system features needed to optimally intervene with young children who are having problem behavior such as resources, staff ratios, background and training, collaboration with experts, time, family involvement and interagency collaboration.** The examination of service system features should explore questions related to a) the features that are particular to providing support to the birth-to- three population in contrast to preschool children (ages 3-6), and b) the particular features that are most likely to support the use of evidence-based practices.

As stated earlier, this is a work in progress. We will obtain review and comment of this manuscript from several sources including: the project review teams, Office of Special Education Programs (OSEP) of the U. S. Department of Education, the project's Advisory Group, and other leaders in the fields of mental health, health, early care and education, child welfare, and early intervention and early childhood special education. We intend to update this material over the duration of the Center, provide multiple formats for the information for various stakeholders (families, administrators, researchers, policy makers, etc) and to use many dissemination venues such as web sites, peer-reviewed journals, and conference presentations.

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