



Evidence-Based Approaches to Child Find, Referral, Early Identification and Eligibility Determination Practices

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Toward a Categorization Scheme of Child Find, Referral, Early Identification and Eligibility Determination Practices

A categorization scheme is described for organizing knowledge and research regarding child find, referral, early identification, and eligibility determination practices required by the Individuals with Disabilities Education Act Part C Early Intervention and Part B(619) Preschool Special Education Programs. A three-level typology scheme is used to differentiate between child find, referral, early identification, and eligibility determination *activities, categories* (of practices), and *practices*. The categorization scheme is being used at the Tracking, Referral and Assessment Center for Excellence (TRACE) to identify and investigate the characteristics of the practices that are associated with their intended benefits and outcomes.

The purpose of this *Tracelines* is to describe a categorization scheme for classifying and organizing child find, referral, early identification, and eligibility determination research and practice for promoting better understanding of the meaning and function of each of these different but related activities. These particular activities are requirements of the Individuals with Disabilities Education Act (IDEA) Part C Early Intervention Program and Part B(619) Preschool Special Education Program. The categorization scheme was developed at the Tracking, Referral and Assessment Center for Excellence (TRACE) for organizing knowledge about the practices required by IDEA and constituting the focus of research by TRACE investigators (www.tracecenter.info).

The major *goal* of TRACE is to identify and promote the use of evidence-based practices and models for improving child find, referral, and the early identification of infants, toddlers, and preschool children with disabilities

or delays eligible for participation in IDEA Part C early intervention programs or Part B (619) preschool special education programs. This is being accomplished by conducting research syntheses of evidence-based child find, referral, early identification, and eligibility determination practices and models (e.g., Bagnato, Matesa, Fevola, & Smith-Jones, in press); conducting extant database, process, and outcome studies of these practices and models (e.g., Dunst & Hamby, 2004); preparing tool kits and practice guides for improving child find, referral, early identification, and eligibility determination practices; providing technical assistance to states and local early intervention and preschool special education programs in using evidence-based practices; and disseminating information about evidence-based child find, referral, early identification, and eligibility determination practices and models (e.g., Trivette & Dunst, 2003).

As part of TRACE efforts to identify relevant studies of child find, referral, early identification, and eligibility

determination practices, we found it helpful to organize the practices into categories in order to “make sense” of what is known about the characteristics of the practices that are associated with desired benefits and outcomes. This process led us to develop the categorization scheme that is the focus of this *Tracelines*.

Knowledge Organization Systems

A categorization scheme is a way of organizing knowledge for the purpose of bringing order and clarity to collections of things, ideas, concepts, etc. and promoting knowledge management and use. The Library of Congress system for cataloging and organizing library material (Guenther, 1996) and the Linnaean taxonomy for classifying living things (Duprey, 2002) are examples of knowledge organization systems.

Knowledge organization systems are often arranged in hierarchies, from the most general to the more specific. The genealogical mapping of family history is an example of a hierarchical classification scheme (Yanagisako, 1979). Categories in the hierarchy help structure and organize the universe of entities constituting the focus of categorization (Davis & Tall, 2002).

We propose a three-level, hierarchical classification scheme that organizes child find, referral, early identification, and eligibility determination into *activities*, *categories* (of practices), and *practices*. Figure 1 shows the logic of the hierarchy. In our classification scheme, each activity is made up of different categories (of practices). For example, child find includes public awareness, outreach to physicians, and community screening programs, among other initiatives. Each category (e.g., public awareness) in turn includes different kinds of practices (e.g., public communications campaigns, public service

announcements, social marketing, etc.) (see Dunst, Lucas, & Click, 2004).

Neither the categories nor the practices are mutually exclusive or dichotomous. The assignment in the classification scheme is based on the *purpose* and *function* of a practice (see (Dunst, Trivette, Appl, & Bagnato, 2004). Therefore, any one practice (e.g., outreach to physicians) could serve multiple functions (e.g., child find and referral) depending on the intended purpose of the activity.

IDEA Requirements

Various sections of IDEA (1997) and the regulations for the Act (Early Intervention Program, 2002) include references to the terms child find, referral, early identification, and eligibility, as well as related terms and requirements (e.g., central directory and informed clinical opinion). According to IDEA, states must develop and implement a comprehensive child find system that includes both state efforts to identify and locate eligible children and procedures that parents and professionals can use to refer children to early intervention or special education. More specifically, a *comprehensive child find system* must include policies and procedures for determining child eligibility for services and methods for determining which children are receiving services; coordination with other state agencies; referrals for evaluation and assessment; and procedures for making referrals by primary referral sources, including hospitals, physicians, parents, local education agencies, public health facilities, social service agencies, and other health care providers (Early Intervention Program, 2002).

Examination of the child find requirements of IDEA indicates, among other things, that child find can be organized into two approaches: (a) The efforts of early intervention and preschool special education program practitioners to reach out and locate eligible children (inside/out efforts) and (b) the procedures that are instituted to promote referrals to early intervention or preschool special education (outside/in efforts). We operationally differentiate between these types of activities, labeling inside/out efforts as *child find* and outside/in efforts as *referral*.

Further examination of the IDEA child find requirements shows that there are implicit hierarchies in the required activities. For example, it is stipulated that child find be conducted, in part, by developing and implementing a public awareness program or campaign. According to the IDEA regulations (Early Intervention Program, 2002), a public awareness program must include the early identification of children who are eligible for services and the preparation and dissemination of materials to primary referral sources and the general public

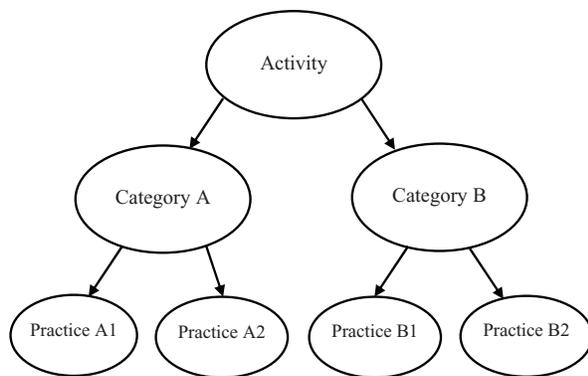


Figure 1 Organization scheme for categorizing child find, referral, early identification, and eligibility determination practices

about services through television, radio, and newspaper releases, pamphlets and posters, and a toll-free telephone service. In our categorization scheme, a public awareness program is one category of child find practice, and public service announcements, newspaper releases, etc., are different kinds of child find practices.

The same kind of logic can be applied to other child find requirements. For example, one referral procedure that states must implement is a central directory (Early Intervention Program, 2002) of public and private resources, services, and experts, compiled in a way that enables parents to use the central directory to contact, by telephone or letter, any of the sources in the directory. In the context of our proposed categorization scheme, a central directory is one type of practice that is used to promote referrals to early intervention and preschool special education.

In the companion *Tracelines* to this categorization scheme paper (Dunst, Trivette et al., 2004), we make a distinction between early identification and eligibility determination and provide a rationale for why these are considered functionally and procedurally distinct activities. In the categorization scheme proposed in this paper, the evaluation and assessment requirements of IDEA are considered a particular type of early identification practice useful for eligibility determination, and state required eligibility criteria is the means for promoting enrollment in early intervention or preschool special education. According to the IDEA Regulations, evaluation and assessment (Early Intervention Program, 2002) are used for a child's initial and ongoing eligibility using appropriate assessment and evaluation methods and procedures. The Regulations also require states to develop *eligibility criteria and procedures* (Early Intervention Program, 2002) for determining eligibility for program participation (i.e., enrollment), including a definition of developmental delay, procedures for using clinical opinion for eligibility determination, and the criteria and procedures for ascertaining those children who are at risk for developmental delays (when a state elects to include risk status as a condition for determining eligibility). Accordingly, early identification is considered an activity that includes different categories of evaluation and assessment practices, and eligibility determination is an activity that includes different kinds of practices (e.g., informed clinical opinion) used to enroll children in early intervention or preschool special education.

Behavioral Science Approach to Categorization

The various IDEA requirements for child find, referral, early identification, and eligibility determination

include a host of terms that require definition and operationalization if advances are to be made in our understanding of the meaning of the terms (i.e., practices) and how different practices are related to one another in predicted or expected manners. A behavioral science perspective of the IDEA requirements indicates that concepts and constructs such as *eligibility* and *child find* need to be operationally defined if we are to develop a better understanding of their meaning and implications for improving practice.

Behavioral scientists take a particular approach to studying social and behavioral phenomenon that was used to develop the categorization scheme for conducting TRACE research and practice. Behavioral scientists identify a phenomenon of interest (e.g., clinical opinion), identify or develop an operational definition of the phenomenon (e.g., Goodnow, 1988; Shackelford, 2002), identify indicators that make the phenomenon observable (Bagnato, Matesa, Smith-Jones, & Fevola, in press), describe how the phenomenon differs from related concepts (e.g., presumptive eligibility; Dunst, Bagnato, Gorman, & Trivette, 2004), and develop procedures for measuring the characteristics and key features of the phenomenon. This process links *conceptualization* to *operationalization* and makes possible empirical investigation and study of the phenomenon of interest.

According to Babbie (2004) "*conceptualization* is the refinement and specification of abstract concepts, and *operationalization* is the development of specific research procedures (operations) that will result in empirical observations representing those concepts in the real world" (p.132). Many of the IDEA requirements briefly described above are concepts or constructs. Close inspection of the terms throughout IDEA requirements indicates that the same terms "show up" in different sections of the law. This indicates that different terms are related to one another in specifiable ways (e.g., child find and public awareness). How they are related empirically, however, requires operationalization within and between concepts if we are to scientifically understand the relationships among different practices (e.g., Are different public awareness practices differentially related to the effectiveness of child find?).

Close inspection of the child find, referral, early identification, and eligibility literatures indicates that the different terms are often used to mean the same thing and the same terms are used to describe conceptually and procedurally different practices. Based on a review and analysis of the available literature, we have concluded that this has impeded an understanding of how to develop and implement Part C/Part B(619) activities in efficient and effective ways. TRACE addresses these problems by: (a) differentiating between and (b) categorizing

different TRACE-related practices in ways that increase the likelihood that the most effective practices can be identified and described in ways that make them more likely to be adopted and used for improving child find, early identification, and referral practices. The proposed categorization scheme for organizing the IDEA required practices is described next.

Categorization Scheme

The Tracking, Referral and Assessment Center for Excellence (TRACE) has adopted the *operational definitions* of child find, referral, early identification, and eligibility practices included in this section of the paper for guiding the conduct of Center research and practice (see Dunst, Trivette et al., 2004). The operational definitions make explicit the intent of each practice in order to focus attention on their purposes, functions, characteristics, and desired outcomes.

Figure 2 shows the TRACE model for depicting the relationship between child find, referral, and early identification, and both eligibility determination and enrollment in Part C or Part B(619) programs. The model is adapted from one described by Appl (2000) that operationally differentiates between related but procedurally distinct assessment practices. The adapted model is described in detail in Dunst, Trivette et al. (2004). Any number of population-based sources of information about infants, toddlers, and preschoolers with disabilities or conditions that are associated with developmental delays are considered the target of child find, as well as referral and early identification (Farel, Meyer, Hicken, & Edmonds, 2003; Robinson & Rosenberg, 2004). According to this model, *child find* is considered an activity that locates children eligible or potentially eligible for early intervention or preschool special education, where child find leads to *early identification* or *referral*, or both. Early identification is considered the means used for *eligibility determination* that promotes *enrollment* in early intervention or preschool special education programs.

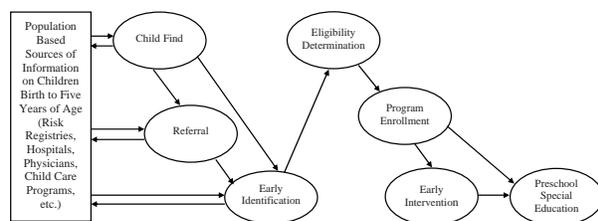


Figure 2 Relationships among the major practices constituting the focus of TRACE research and practice.

Child Find

Child find means the methods and procedures used by Part C or Part B(619) programs to locate infants, toddlers, and preschoolers who are in need of, or potentially in need of, Part C early intervention or Part B(619) preschool special education. The term refers specifically to the efforts and activities of Part C or Part B(619) program practitioners that locate, identify, and promote referrals to early intervention or preschool special education programs.

Table 1 shows a tentative list of child find practices based on an extensive review of the published and unpublished literatures. Child find practice descriptions and research are organized into six major categories:

1. public awareness practices that inform parents and primary referral sources about the availability and benefits of early intervention and preschool special education (e.g., Smith & Klönglan, 1990),
2. efforts by early intervention and preschool special education program practitioners to reach out to primary referral sources (e.g., Berman & Melner, 1992),
3. community screening programs implemented by early intervention and preschool special education programs that identify children in the general or targeted populations who may be eligible for early intervention or preschool special education (e.g., Wright & Ireton, 1995),
4. the use of population-based risk registries for identifying children with conditions that are associated with disabilities or delays (e.g., Farel et al., 2003; Robinson & Rosenberg, 2004),
5. tracking programs and practices that periodically monitor children's progress to discern the presence of developmental delays (e.g., Berman, Biro, & Fenichel, 1989; Blackman, 1992), and
6. collaborative efforts between early intervention/preschool special education practitioners and health care providers that involve identification of children who might be eligible for early intervention or preschool special education (e.g., Kaplan-Sanoff & Nigro, 1988).

Public awareness. Public awareness practices include a mix of methods, materials, and strategies that are designed to inform and motivate people to take action to improve their personal welfare (e.g., Coffman, 2002). These include multimedia *public communications campaigns* (Rice & Atkin, 2001) and both *social marketing* (Andreasen, 1995) and *social norms marketing* (Linkenbach, Perkins, & DeJong, 2003) initiatives that involve the use of different mediums for delivering public awareness messages (printed materials, billboards, public service announcements, etc.) and the methods and strategies used to effectively communicate the mes-

Table 1
Major Categories of Child Find Practices

<i>Public Awareness</i>
Public Communications Campaigns
Social Marketing
Social Norms Marketing
Public Service Announcements
Printed Materials
Message Framing
<i>Outreach Programs</i>
Outreach to Physicians
Outreach to Hospitals
Community Outreach
Academic Detailing
Opinion Leader Practices
<i>Community-Based Screening Programs</i>
Community Fairs
Child Care Programs
Child Development Screening Days
Targeted Screening Programs
<i>Risk Registries</i>
Birth Defects Surveillance Programs
Newborn Medical Screening Programs
Newborn Hearing Screening Programs
Child Protective Services Registries
<i>Tracking Programs</i>
High-Risk Tracking Systems
"Staying on Track" Programs
Service Coordination
<i>Partnerships and Collaborative Projects</i>
Physician Office-Based Programs
Hospital-Based Programs
Health Care/Early Childhood Provider Partnerships

sage (e.g., using a well-known or respected individual as a means of presenting the message). Several sources of information about public communications campaigns (Bernstein, 1993; Jacobson, 1997) and social marketing (Fugate & Fugate, 1995, 1996; Smith & Klomglan, 1990) were found useful for organizing public communications campaign and social marketing child find practices.

The mediums for communicating public awareness messages include *public service announcements* (PSAs) (Atkin & Schiller, 2002; Tellis, Chandy, & Thaivanich,

2000), various kinds of *printed materials* (Paul & Redman, 1997; Wheildon, 1995), and *Web sites* and *Web site advertising* (Dahlen, Rasch, & Rosengren, 2003; Kunst, Groot, Latthe, Latthe, & Khan, 2002). The work of Miyamoto (n.d.) on developing PSAs and that of Paul, Redman, and Sanson-Fisher (1997) on preparing printed materials was especially useful for identifying the characteristics of evidence-based child find practices.

The *message framing* literature indicates that the ways in which messages are communicated matters a great deal if they are to be effective in influencing people's behavior (Maibach & Parrott, 1995). Messages that communicate positive benefits (gain-framed) rather than losses (loss-framed) are more effective in motivating people to take action (see especially Lee & Aaker, 2004).

Outreach programs. The efforts of early childhood program practitioners to influence the recommendations or prescriptions of *primary referral sources* regarding early intervention or preschool special education constitute another kind of child find activity. Outreach to *physicians* (Shapiro, Derrington, & Smith, 2003), *hospitals* (Browne, Langlois, Ross, & Smith-Sharp, 2001), and *community programs and practitioners* (O'Donnell & Giovannoni, 2000) are examples of these types of practices.

Outreach initiatives are more likely to be optimally effective when they are done using evidence-based methods and strategies. *Academic detailing* is one such method for influencing or changing physician and health care provider prescribing practices (Soumerai & Avorn, 1990). The procedure includes provision of specific behavior change information on a one-to-one basis using a succinct but convincing explanation of the benefits of using a service or product (O'Brien et al., 2001).

Research also indicates that outreach initiatives are more likely to be effective if opinion leaders are used to influence prescribing practices. *Opinion leaders* are prominent individuals who occupy a position or hold a title that affects or shapes the opinion or behavior of others (Chan & Misra, 1990; Stross, 1996). Research demonstrates that the characteristics of an individual delivering a message or attempting to influence prescribing practices matters a great deal if an intervention is to have the desired effects (e.g., Kanouse, Kallich, & Kahan, 1995).

Community-based screening programs. These initiatives involve the mass screening of general or targeted populations of infants, toddlers, or preschoolers using standardized instruments or scales for identifying children who have a developmental delay or are at risk for delays (Appl, 2000; Glascoe, 1991; Oehler, Goldstein, Carlett, Boshkort, & Brazy, 1993). These programs are

typically arranged and implemented by early intervention or preschool special education program practitioners, or in collaboration with other organizations or programs, and are carried out either on a regular basis (Solomon, Clougherty, Shaffer, Hofkosh, & Edwards, 1994) or at specific times and places (Yarborough, 2002). Screenings at *child-care programs* (Feil, Severson, & Walker, 1998), *community fairs* (Tirosh, Lechtman, Diamond, & Jaffe, 1993), or on specially arranged *child development screening days* (Wright & Ireton, 1995) are examples of these types of community-based initiatives.

Risk registries. Risk registries are databases that include the names and identifying information of individuals who have been found to have a condition or presenting concern that makes them at risk for one or more poor outcomes (Sever, 2004). There are a number of population-based risk registries (see especially Dunst, Fromewick, & Lucas, 2004) that are potentially useful for child find purposes. These include *birth defect surveillance registries* (Farel et al., 2003), *newborn medical screening program registries* (U.S. General Accounting Office, 2003), *newborn hearing screening program registries* (White & Maxon, 1995), *child protective services registries* (Robinson & Rosenberg, 2004), and other *population-based registries* (e.g., Torfs & Christianson, 1998).

Tracking programs. Monitoring the progress of children identified as at risk for delays or other conditions warranting early intervention or preschool special education constitutes another approach to child find (Berman et al., 1989). Different types of *high-risk tracking systems* (Gordon & Jens, 1988) and “*staying on track*” programs (Landy et al., 1998) have been developed for this purpose. Tracking infants and toddlers who may develop delays or other problems that make them eligible for early intervention can also be accomplished using *service coordination* when monitoring is an explicit function of the practice (Kilbride, Castor, Hoffman, & Fuger, 2000; McLean, 1996).

Partnership and collaborative projects. Developing collaborative arrangements with primary referral sources, and especially health care professionals and programs, constitutes another approach to child find. These types of partnership and collaborative initiatives include *physician office-based programs* where early intervention or preschool special education staff do screenings or provide services to infants, toddlers, and preschoolers (Reisinger & Lavigne, 1980), *hospital-based programs* that involve either hospital-based early intervention before child discharge (Browne et al., 2001) or *transition services programs* bridging hospital-based and community-based provision of early intervention (Miller, Mutton, & Williams, 1993).

Referral

Referral means the procedures or steps taken by an individual or group on behalf of an infant, toddler, or preschooler to obtain the opinion, supports, or services of another individual or group for a child. *Referral* is used by TRACE to encompass a range of activities influencing decision-making processes used by primary referral sources (physicians, child-care programs, information and referral programs, etc.) to recommend or suggest provision of early intervention or special education and the decisions made by parents to seek out early childhood intervention program practitioner opinion or advice.

A review of the literature on research and practice related to referral procedures resulted in the preliminary list of five categories of practices listed in Table 2. These include:

1. the mechanisms and procedures used to institute systems of referrals to early intervention and preschool special education (Lynch, Mercury, DiCola, & Widley, 1988),
2. the procedures used to promote and encourage primary referral source prescriptions and requests for early intervention and preschool special education (Bruder, 2004; Epps & Kroeker, 1995; Reddihough, Tinworth, Moore, & Ihsen, 1996),
3. the efforts of early intervention and preschool special education program practitioners to have health care professionals include early intervention or preschool special education as prescribed or recommended services on health care plans (Krehbiel, Munsick-Bruno, & Lowe, 1991),
4. physician education and training that focuses on knowledge and understanding of the value and benefit of early intervention and preschool special education (Buck, Cox, Shannon, & Hash, 2001; Nalven, Hofkosh, Feldman, & Kelleher, 1997), and
5. the inclusion of early intervention and preschool special education as prescribed or recommended services in the policy statements of physician organizations (e.g., American Academy of Pediatrics, 2001b).

Referral systems. The preparation and availability of a *central directory* that enables parents (and other users) to locate programs, providers, services, and resources, is facilitated by the physical layout, organization, and ease of use of these documents (Eysenbach & Kohler, 2002; Mitchell & Sloper, 2002). We now know, for example, that the ways in which printed directories and Web-based directories are organized matters in terms of their usefulness and benefit to users (Eysenbach & Kohler, 2002; Lawrence, 2003). Research on the characteristics of user-friendly directories help inform how to produce op-

Table 2
Major Categories of Referral Practices

<i>Referral Systems</i>
Central Directories
Central Referral Systems
Single Portal of Entry Systems
Information and Referral Programs
Call Center Programs
<i>Primary Referral Sources</i>
Physicians
Hospital Staff
Referral Specialists
Child Care Programs
Parents
Parent-to-Parent Programs
<i>Health Care Planning</i>
Hospital Discharge Plans
Continuity of Care Plans
Hospital/Home Transition Plans
Medical Home
<i>Physician Education</i>
Physician Training
Pediatric Resident Training Programs
Computer-Based Training Programs
<i>Policy and Position Statements</i>
American Academy of Pediatrics
American Academy of Family Physicians

timely effective compilations of information (Bawden, 1990; Haber & Looney, 2003).

The lessons learned from developing and implementing *single portal of entry systems* (Lynch et al., 1988) and *central referral systems* (Rohrer et al., 1996) can be especially informative in terms of improving child find. Research on the characteristics of *information and referral programs* (Bogat & Gensheimer, 1986; Fuqua & Schieck, 1989; Metoyer-Duran, 1993) and *call centers* (Ellen, 2003; Glade et al., 2002; Rose, 1999) can also inform an understanding of the conditions that enable people to obtain information about desired services, resources, and supports.

Primary referral sources. IDEA requires early intervention and preschool programs to develop procedures that professionals, parents, programs, and organizations can use to make referrals to early intervention or preschool special education. Research and practice on

enabling and promoting referrals to early intervention and preschool special education by *physicians* (Britain & Holmes, 1995; Rushton, Bruckman, & Kelleher, 2002; Sices, Feudtner, McLaughlin, Drotar, & Williams, 2004), *hospitals* (Berger, Holt-Turner, Cupoli, & Hageman, 1998; Boone, Freund, Barlow, Van Ark, & Wilson, 2004; Flynn & McCollum, 1989), *parents* (Diamond, 1993; Glascoe, 1998; Tien, Peterson, & Shelley, 2002), and other *primary referral sources* (see Dunst, Stuart, & Hamby, 1999) help make clear why professionals refer and parents seek early intervention or preschool special education.

Health care planning. Children eligible for early intervention or preschool special education have a high probability of also being cared for by health care professionals. Inclusion of early intervention or preschool special education in *hospital discharge plans* (Tien et al., 2002), *continuity of care plans* (Inkelas, Schuster, Olson, Park, & Halfon, 2004), *hospital to home transition plans* (Bruder & Walker, 1990; Marot, 1993; Shotts, 1995), and *medical home-care plans* (Cooley, 2003; Nickel, Cooley, McAllister, & Samson-Fang, 2003) constitutes one approach to increasing referrals of eligible or potentially eligible children.

Evidence from a number of sources indicates that referrals by physicians are facilitated by *physician training* (Garland, Gallagher, & Huntington, 1997; Shapiro et al., 2003) and *pediatric resident-training programs* (Nalven et al., 1997; Wysocki, Gururaj, Rogers, & Galey, 1987) that promote understanding of the value and benefit of early intervention and preschool special education. The use of *computer-based training methods* for educating physicians and other primary referral sources about early intervention and preschool special education holds promise as a referral practice (Chan, Leclair, & Kaczorowski, 1999; D'Alessandro, Lewis, & D'Alessandro, 2004; Johnston, Langton, Haynes, & Mathieu, 1994; Kieckhefer, Stevens, & Frkonja, 2002).

Practitioners often look to their professional organizations for information and guidance for informing their practice. The inclusion of information about the value and benefit of early intervention and preschool special education in the *policy and position statements* of the professional organizations of primary referral sources would seem to be a factor that would influence prescribing practices (e.g., American Academy of Pediatrics, 2001b, 2002; Saenz, 1999; Trachtenberg & Golemon, 1998).

Early Identification

Early identification refers to a broad range of methods, procedures, and practices used to determine the pres-

ence of a condition or identified disability that results in a developmental delay or places a child at risk for a developmental delay or poor outcome. Early identification practices used by non Part C/Part B(619) Programs typically involve screening or assessment practices that specifically aim to discern the presence of a condition that establishes or places a child at risk for a delay or problem.

Table 3 shows the five categories of practices that were identified from our literature review of early identification practices. Two pertain to practices used by nonPart C and nonPart B(619) practitioners (screening practices & parent appraisals) and three pertain to practices used by Part C and Part B(619) practitioners (risk factor assessments, teaming/assessment models, and assessment scales and methods). The main focus of these practices include:

1. developmental and behavioral screenings conducted by health care professionals that are used to identify developmental or behavioral concerns or the need for further evaluations (Halfon et al., 2004),
2. parent appraisals of their children's behavior and development resulting in further evaluations or in seeking help regarding parent concerns (Diamond, 1993; Glascoe, 1998),
3. the use of risk assessment indicators for identifying children who have a high probability of subsequent developmental delays (e.g., Kochanek & Buka, 1991),
4. teaming models and practices used to gather information needed to make decisions about developmental delays (McFarland & McFarland, 2001), and
5. the assessment tools and instruments used by early intervention and preschool special education practitioners to screen for or establish the presence of developmental delays (Taylor, 1993).

Screening practices. *Developmental screenings* by health care professionals (American Academy of Pediatrics, 2001a; Halfon et al., 2004; Okamoto, 2003) can be important sources of early identification information. These include both informal and formal observations and assessments made as part of *physician screenings* (Dworkin, 1993; Murphy, Arnett, Bishop, Jellinek, & Reede, 1992; Tebruegge, Nandini, & Ritchie, 2004), *nurse screenings* (Cadman et al., 1987; Curry & Duby, 1994; Romeo, 2002), and screenings by other health care professionals (Dunbar & Reed, 1999; Jones, Latkowski, Green, & Ferre, 1996).

Parent appraisals. *Parents' concerns* about their children's behavior and development (Diamond, 1993; Ellingson, Briggs-Gowan, Carter, & Horwitz, 2004; Glascoe, 1999) and *parents' judgments* about child functioning (Glascoe, 2002; Ireton, 1996; Squires, Bricker, Heo, & Twombly, 2001) are important sources of early

Table 3
Major Categories of Early Identification Practices

Screening Practices

Developmental Screening

Physician Screening

Nurse Screening

Parent Appraisals

Parental Concerns

Parental Judgments/Estimations

Parental/Professional Congruence

Risk Assessments

Environmental Risk Factors

Biological Risk Factors

Teaming/Assessment Models

Multidisciplinary

Interdisciplinary

Transdisciplinary

Arena Assessments

Assessment Methods

Evaluation Tools

Traditional Methods

Nontraditional Methods

Authentic Methods

Functional Classification Systems

identification information. The rich database on the *congruence* between parent and professional assessments of child behavior and functioning is yet another source of information useful for early identification (Harris & Langkamp, 1994; Suen, Logan, Neisworth, & Bagnato, 1995).

Risk assessments. The probability or chance that a poor or detrimental outcome may occur as a result of the presence of one or more environmental or biological factors by definition is a condition placing a person "at risk" (Dunst, 1993). Risk factors can occur or be present prenatally, perinatally, or postnatally (Juil-Dam, Townsend, & Courchesne, 2001), and can be environmental (Campbell & Ramey, 1986) or biological (King, Logsdon, & Schroeder, 1992), or a combination of both (Rojahn et al., 1993; Schroeder, 2000; Weisglas-Kuerpas, Baerts, Smrkovsky, & Sauer, 1993). Research by Sameroff (1998; Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987) has shown that cumulative *environmental risk* manifested in the form of parent and family

factors is associated with the increased likelihood of poor child development outcomes (see also Dunst & Trivette, 1997). *Biological risk* factors associated with poor developmental outcomes include, but are not limited to, low birth weight and prematurity (e.g., Avchen, Scott, & Mason, 2001) and intraventricular hemorrhaging (Verma et al., 1997). Other biological risk factors that can potentially compromise development include low APGAR scores (Thorngren-Jerneck & Herbst, 2001), maternal smoking during pregnancy (Thapar et al., 2003), and prenatal cocaine exposure (Kilbride et al., 2000).

Teaming and assessment models. Both early intervention and preschool special education practitioners have used *multidisciplinary* (Lamorey & Ryan, 1998), *interdisciplinary* (Gibbs & Teti, 1990; Rossetti, 1990), and *transdisciplinary* (Bergen, 1994; Grisham-Brown, 2000) teaming models for gathering early identification information. Other teaming models include *arena assessments* (Eddey, Robey, Zumoff, & Malik, 1995), *consultative coaching* (Fair & Clay, 1999), and *play-based assessments* (Linder, 1993).

Assessment methods. Research and practice on the *methods and procedures* (Appl, 2000; Blasco & LaMontagne, 2001; Bracken, 2000; McLean, Bailey, & Wolery, 1996; Neisworth & Bagnato, 2004; Pretzel & Hiemenz, 2004), *tools and instruments* (Pickstone, Hannon, & Fox, 2002; Taylor, 1993), and the *psychometric characteristics* (e.g., reliability and validity; sensitivity and specificity) of assessment scales (Adrien et al., 1992; Grunau, Whitfield, & Petric, 2000; Harris & Langkamp, 1994; Spector, 1999) used to identify infants, toddlers, and preschoolers with or at risk for delays are important sources of information for understanding the key elements of effective early identification. The different characteristics of assessment methods and tools are being examined with a focus on those procedures that can improve the early identification of children with delays or conditions associated with delays (Smith-Jones, Bagnato, Matesa, & Fevola, in press).

Eligibility

Eligibility means the procedures and criteria used to determine if a child meets the definitions established by states and jurisdictions for Part C or Part B(619) program enrollment. The information obtained from early identification or other procedures (e.g., informed clinical opinion) are the sources of evidence used for making an *eligibility determination* against established state criteria. Eligibility determination is a Part C/Part B(619) program specific activity that links early identification with enrollment of children in early intervention or preschool special education.

The three categories of eligibility determination practices identified from our review of both the published and unpublished literatures and examination of states' eligibility definitions are shown in Table 4. These include:

1. decision-making procedures that can be used to make an eligibility determination based on assessment information and eligibility criteria (La Paro, Olsen, & Pianta, 2002; Shackelford, 2002; Suen, Lu, Neisworth, & Bagnato, 1993),
2. the characteristics of states' eligibility criteria that promote or impede enrollment in early intervention or preschool special education (Bernheimer, Keogh, & Coots, 1993; Muller & Markowitz, 2004), and
3. state and local program eligibility determination policy and practice used to make decisions about enrollment in early intervention or preschool special education (Danaher, 2004; Harbin, Danaher, & Derrick, 1994; Shackelford, 2004).

Eligibility determination. The particular procedures that are evidence-based and that seem especially applicable for the eligibility determination of infants, toddlers, and preschoolers with conditions placing them at risk for delays or disabilities include, *informed clinical opinion* (Bagnato, 1984; Bagnato & Neisworth, 1985; Sampers, Cooley, Cornelius, & Shook, 1996), *presumptive eligibility* (Klein, 2003; Piper, Mitchel, & Ray, 1994; Sadler, 1989), and *triage* (Barr, 1990; Cole & Mills, 1997; Jones, Lucey, & Wadland, 2000). All three involve the use of different decision-making processes for using assessment information for eligibility determination.

Table 4 Major Categories of Eligibility Determination Practices

Eligibility Determination

- Informed Clinical Opinion
- Presumptive Eligibility
- Triage

Eligibility Definitions

- Part C Definitions
- Part B(619) Definitions

Eligibility Policies and Practices

- State-Level Part C Policies
 - State-Level Part B(619) Policies
 - Program-Level Part C Practices
 - Program-Level Part B(619) Practices
-

Eligibility definitions. Sources of information about the criteria used to make an eligibility determination for enrollment in early intervention (Harbin, Gallagher, & Terry, 1991; Shonkoff & Meisels, 1991) or preschool special education (Barnett et al., 1999; Gonzalez, Ahearn, & Osher, 1994) are useful for judging the complexity or simplicity of enrollment practices. Research we have conducted indicates that how restrictive or liberal eligibility definitions are matters in terms of the percentage of children likely to be served by states (e.g., Dunst & Hamby, 2004).

Eligibility policies and practices. State and local program eligibility policy and practices (Danaher, 2004; Muller & Markowitz, 2004; Shackelford, 2004) provide particular lenses for understanding the processes used for eligibility determination and the study of whether different policies and practices are associated with differences in the number of children served in Part C or Part B(619) Programs. TRACE investigators are using the policy and practice characteristics to evaluate their effects on states' efforts to serve eligible children.

Conclusion

The purpose of this *Tracelines* was to propose a categorization scheme for organizing knowledge and research regarding child find, referral, early identification, and eligibility determination practices that are applicable to early intervention and preschool special education programs and practitioners. Six categories of child find, five categories of referral, five categories of early identification, and three categories of eligibility determination practices were identified from a review of relevant literatures. A tentative list of more than 70 practices were identified that either have an evidence-base or hold promise for improving child find, referral, early identification, and eligibility determination.

The categorization scheme was developed to organize and "make sense" of existing research and practice, identify which practices among any number of options are likely to be most effective in terms of intended benefits and outcomes, and to provide structure and guidance in terms of the conduct of TRACE research. As part of "sorting out" the practices that have the strongest evidence-base and discerning which practices have the greatest possibility of improving child find, referral, early identification, and eligibility determination, we have been able to begin the process of disentangling and unpacking those aspects of particular practices that matter most in terms of producing intended effects. For example, the review and synthesis of the public awareness literature indicates that targeted messages (Kreuter, Strecher, & Glassman, 1999) that are gain-framed (Rothman,

Martino, Bedell, Detweiler, & Salovey, 1999) and delivered by opinion leaders (Perse, Nathanson, & McLeod, 1996) on multiple occasions (Tellis et al., 2000) are likely to be most effective in terms of reaching and influencing intended audiences. Likewise, we know from studies that efforts to change physician prescribing practices are more effective by having multiple contacts over an extended period of time (6 to 8 months) rather than only one or two contacts (Baskerville, Hogg, & Lemelin, 2001; May, Rowett, Gilbert, McNeece, & Hurley, 1999; Soumerai, 1987).

Culling research evidence on child find, referral, early identification, and eligibility determination practices by TRACE investigators is done using an evidence-based research integration framework (Dunst, Trivette, & Cutspec, 2002) that attempts to identify the characteristics of practices that are functionally and procedurally related to different consequences and outcomes. A lesson learned reviewing research studies applicable to TRACE-related practices is that different bodies of evidence "point to" these practice features and elements that account for variations in observed effects reported in the studies constituting the focus of synthesis. The framework described in this *Tracelines* is considered a second step in bringing clarity to available evidence informing improvements in child find, referral, early identification, and eligibility determination practices. The first step was operationally defining these practices and describing the purpose and goal of each of the practices (Dunst, Trivette et al., 2004). This paper as well as its companion *Tracelines* are being used to advance our understanding of how to improve child find, referral, early identification, and eligibility determination in early intervention and preschool special education programs.

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