

## ***Dimensions of Early Identification***

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*Several dimensions of early identification are discussed, including the relationship between early identification and prevention. A preventive component is described for the various forms of early identification—child find, screening, assessment, and program planning. Also discussed are recently published guidelines for screening and assessment and the assumptions on which these guidelines are based. Chief among these assumptions is the notion that risk and disability are multidetermined; hence, systems of early identification must similarly be founded on a multiple risk model. The implications of this model for selecting assessment instruments and for determining eligibility are described, as are future directions that should be explored in early identification.*

Historically, early identification has had to contend with a certain amount of professional skepticism. Critics have complained that too much was claimed and too little proven concerning the efficacy of screening tests or programs of early identification (see Dworkin, 1989; McCall, 1982). Some screening instruments (e.g., the *Denver Developmental Screening Test*, Frankenburg, Dodds, Fandal, Dazuk, & Cohrs, 1975) were accepted by practitioners for wide-scale use though research demonstrated high levels of misidentifications (Meisels, 1989a). Other approaches to early identification (e.g., the *Fagan Test of Infant Intelligence*, Fagan, Singer, Montie, & Shepherd, 1986) have been marketed aggressively, even though they have been shown to be based on questionable research and of limited utility in large-scale programs of early identification (Meisels, 1988). Of similar concern are the large numbers of “home-made” screening instruments for preschool and kindergarten-age children that have been implemented with little or no empirical evidence (Meisels, 1987).

Nevertheless, the goal persists of finding and helping children at the earliest age possible. Indeed, the task of transforming the process of early identification into a more dependable and accurate set of procedures has never been of greater urgency. PL 99-457, Part H, has thrust early intervention into the forefront of the nation’s social policy for children (Shonkoff & Meisels, 1990), and early intervention clearly requires early identification. Moreover, with the passage of Part H, a new role for early identification has emerged. In addition to the statute’s requirement that eligible infants and toddlers be “identified, located, and evaluated” (§303.321), the structure of the regulations implies that early identification should be closely related to prevention activities as well.

This link between identification and prevention appears on two levels. First, the regulations state that “each system must include a public awareness program that focuses on the early identification of children who are eligible to receive early intervention services” (§303.320). The regulations further stipulate

that the public awareness program should focus on informing the public about the state's early intervention program, its child-find system, and the services available throughout the state. By linking early identification to public awareness, Part H helps forge an important link between identification and prevention. Furthermore, Part H also permits states to serve at-risk children. These children are defined generally as infants and toddlers who have a high probability of developing disabling conditions if they and their families are not identified and served. The assumption is that more significant disabling conditions can be prevented if they are successfully identified and receive appropriate assistance. Hence, risk, early identification, and prevention are closely interwoven. This article will explore this link and the other dimensions of early identification thoroughly.

### **PREVENTION**

The three forms of prevention that are widely cited in the public health literature are defined temporally as primary, secondary, and tertiary. Primary prevention refers to actions taken before a disease occurs. Secondary prevention takes place after the disease has been identified but before it has resulted in disability. Tertiary prevention occurs after the onset of disability, with the goal of reducing further deterioration (cf., Sameroff & Fiese, 1990). It is primary prevention, or actions taken to prevent the occurrence of disease or disability prior to onset, that is of central interest here.

Early identification, particularly with its reliance on developmental and health screening—the process of identifying those individuals who may need further evaluation to ascertain whether they have a condition that may place them at risk—is often not considered primary prevention. Typically, most

identification programs focus on secondary prevention, the detection and treatment of disease or disability after its onset (Meisels & Margolis, 1988). But the emphasis in Part H on public awareness and on identifying risk factors that are related to developmental problems provides an incentive for incorporating primary preventive functions into early identification activities (see Graham & Scott, 1988).

### **VARIETIES OF ASSESSMENT**

Every aspect of identification and assessment can be seen to have a prevention component. Three major types of assessment activities—screening, assessment, and individual program planning, in addition to the public awareness activities known as child find—characterize the varieties of assessment commonly found in early childhood programs. The purpose, personnel, and characteristics of these activities are elaborated elsewhere (Meisels & Provence, 1989) and will only be mentioned here.

Child-find efforts are intended to alert the public at large to the availability of and rationale for early childhood intervention programs and to describe some of the risk factors that might encourage a parent or professional to obtain services for a child. Child-find activities are generally directed at increasing public awareness, encouraging the use of early intervention services, and serving as a clearinghouse to make referrals for screening and early identification (Meisels, 1989b).

Developmental and health screening refers to activities that are intended to identify at an early stage those children who have a high probability of exhibiting delayed or abnormal development. Screening tests that are used for screening large numbers of children should be brief, efficient, inexpensive, objec-

tively scored, reliable, valid, culture-fair, and broadly developmental (Meisels, 1989b). Processes or procedures that are used for screening environmental and familial risk factors may vary from some of these characteristics (Kochanek, Kabacoff, & Lipsitt, 1987; Mitchell, Bee, Hammond, & Barnard, 1985; Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987).

"Assessment" is often used generically to refer to the entire identification/assessment process. However, in this context it is used to refer to two specific activities: diagnostic assessment and program assessment. Diagnostic assessments are used to determine conclusively whether a child has special needs, ascertain the nature and character of the child's problems, suggest the cause of the problems, and propose possible remediation strategies (Wachs & Sheehan, 1988). Formal assessment instruments should be used in the context of a multidisciplinary team effort that involves the parents as both a potential focus of intervention and a source of assessment data.

Assessment for individual program planning occurs after a decision has been made to initiate early intervention. Typically, these program assessments are criterion-referenced, focusing on a child's mastery of skills or tasks rather than the child's relative standing in comparison to some normative group (Bagnato, Neisworth, & Munson, 1989).

Each of these activities (child find, screening, diagnostic assessment, and program assessment) has a potential prevention component. Child find's purpose is to create awareness of typical and atypical child development and to inform the public of the rationale for and availability of early intervention. Through public education some developmental risk conditions may begin to be altered as a result of community action, some families may seek help before their children's problems become more severe, and some cycles of family-based disorders

can be reduced or eliminated. These are all examples of primary prevention.

Developmental and health screening fulfill both primary and secondary prevention purposes. The primary preventive effect is to identify children with potential problems prior to those problems becoming disabling conditions. Thus, a child with chronic ear infections who is identified early and who receives treatment may be saved the burden of developing speech delays or disabilities. For those children who have established handicapping conditions, screening serves the secondary preventive purpose of assuring that assessment and treatment are initiated and further problems avoided.

Diagnostic assessment serves all three prevention purposes because it not only provides services at the secondary and tertiary levels, but, by making remediation services possible, it may prevent the onset of primary reactive disorders. Thus, the child with mild cerebral palsy and speech-motor difficulties need not develop self-concept and adaptive disorders if an effective program of intervention is available that will enhance that child's sense of competence and feelings of effectiveness.

From the vantage point of the Part H regulations, these preventive functions are only implicit. Nevertheless, the regulations imply that the process of early identification and assessment can hold promise that exceeds the simple sorting role of determining who is eligible for services. It should be noted that the Part H regulations do not follow the typology presented above. Rather than child find, screening, diagnosis, and program planning, they mention "Public Awareness," "Evaluation," and "Assessment" (§ 300.322). The role of Public Awareness in child find has already been noted. Evaluation is defined as "procedures used by appropriate qualified personnel to determine a child's initial and continuing eligibility for services." Assessment is

defined as “ongoing procedures used by appropriate qualified personnel throughout the period of a child’s eligibility to identify (a) the child’s unique needs; (b) the family’s strengths and needs related to development of the child; and (c) the nature and extent of early intervention services that are needed by the child and the child’s family.” Accordingly, “Evaluation” corresponds to screening while “Assessment” mirrors diagnostic assessment as described above.

### **PRINCIPLES OF EARLY IDENTIFICATION**

The recently published monograph *Screening and Assessment: Guidelines for Identifying Young Disabled and Developmentally Vulner-*

*able Children and their Families* (Meisels & Provence, 1989) presents 10 guidelines developed by a national task force on screening and assessment. These guidelines are listed in Table 1. They incorporate a number of important principles about child development, screening and assessment, and the effect of risk factors on development. Central to these principles is the commitment to “develop a screening and assessment process that acknowledges the multiple contributions of risk and disability, and that incorporates a structure that is sensitive to the particular needs of young children and their families” (p. 22). Understanding this commitment is essential for implementing an early identification system that is effective and that has a primary prevention focus.

**TABLE 1**  
***Guidelines for Screening and Assessment***

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1. Screening and assessment should be viewed as services—as part of the intervention process—and not only as means of identification and measurement.
  2. Processes, procedures, and instruments intended for screening and assessment should only be used for their specified purposes.
  3. Multiple sources of information should be included in screening and assessment processes.
  4. Developmental screening should take place on a recurrent or periodic basis. It is inappropriate to screen young children only once during their early years. Similarly, provisions should be made for reevaluation or reassessment after services have been initiated.
  5. Developmental screening should be viewed as only one path to more in-depth assessment. Failure to qualify for services based on a single source of screening information should not become a barrier to further evaluation for intervention services if other risk factors (e.g., environmental, medical, familial) are present.
  6. Screening and assessment procedures should be reliable and valid.
  7. Family members should be an integral part of the screening and assessment process. Information provided by family members is critically important for determining whether or not to initiate more in-depth assessment and for designing appropriate intervention strategies. Parents should be accorded complete informed consent at all stages of the screening and assessment process.
  8. During screening or assessment of developmental strengths and problems, the more relevant and familiar the tasks and setting are to the child and the child’s family, the more likely it is that the results will be valid.
  9. All tests, procedures, and processes intended for screening or assessment must be culturally sensitive.
  10. Extensive and comprehensive training is needed by those who screen and assess very young children.

*Note:* From *Screening and Assessment: Guidelines for Identifying Young Disabled and Developmentally Vulnerable Children and their Families*, p. 24, by S.J. Meisels and S. Provence, 1989. Washington, DC: National Center for Clinical Infant Programs.

The guidelines are consistent with five general principles: (1) development is determined by multiple factors; (2) developmental change is supported, facilitated, or impeded by environmental influences; (3) social and cultural influences on the child are mediated by parental figures; (4) the family plays a unique role and makes vital contributions to the child's development; and (5) parenthood is a developmental and adaptive process. In short, the guidelines attempt to embed the process of early identification within a larger social and familial context. Tests, measures, and procedures represent only a portion of the factors that must be considered in establishing a system of early identification. Also needed is attention to the environmental context of caregiving and the family's internal and external resources and stresses. As these factors are examined, the origins of many problems may begin to be identified (Dunst & Trivette, 1990). It is only through an examination of the context of caregiving that a complete picture of a child's risk status will begin to emerge (Werner, 1986). Clearly, early identification must go beyond simple causal models that seek to identify single causes of disability and disorder.

### ***THE CONTEXT OF EARLY IDENTIFICATION***

The initial question raised in the design of most early identification programs is, "Which instrument should I use?" However, as programs of early identification become more context-oriented, that is, more sensitive to the social and environmental factors that affect a young child's development, the search for a single measure becomes more elusive, and the recognition of the need for a system that will account for the multiple determinants of a child's status becomes more pronounced.

Three overall principles should guide the design of such a system (Meisels & Provence, 1989). First, it is necessary to obtain developmental data periodically from multiple sources, including the child's family. Second, data collected about the child's health and developmental status must be combined with data about the child's care-giving and environmental status. Finally, quantitative measures of child development should never be used in isolation. Risk and disability are typically multidetermined. Systems of early identification must use designs that are sensitive to the particular needs of young children as expressed within their social and familial environments (Meisels & Wasik, 1990).

### ***Tests and Measures***

Numerous sourcebooks review instruments that are appropriate for use in early identification. These sources are listed in the guidelines document (Meisels & Provence, 1989). Also included in that document is a matrix that describes more than 40 tests and measures. Regardless of how a specific instrument is used, a number of cautions should be observed. First, all tests should be used in the context of the guidelines described in Table 1. This will, among other things, assure that screening and assessment are viewed as part of the intervention process and not only as means of identification and measurement. Second, all test users should apply traditional standards of psychometric practice to the selection and use of an instrument. While there is a clear and important role for clinical assessment, instruments that are intended for wide-scale use must be empirically valid and reliable. Third, it should be clear that tests normed on one group of children cannot be considered valid for another significantly different group without explicit standardization for that group. Too often procedures are developed without any high-risk or handicapped children included in the standardiza-

tion sample. Such procedures have unknown validity for children who are at-risk or who have disabilities. Fourth, one should never overlook the need for training and supervision within a testing program. Tests do not have magical properties. They are only as good as the people using them (though frequently enough the tests may obscure the knowledge of the users). Fifth, even when using an instrument that is psychometrically sound, multiple sources of data and clinical information are still needed. Especially with infants and toddlers, a single source of data will usually be inadequate for identification; it will always be insufficient for making diagnostic and prescriptive judgments. Finally, since few tests are demonstrably free of cultural bias, care should be taken in administering tests to members of minority groups to avoid confusing cultural and linguistic differences with statements about developmental deficiencies.

### ***Eligibility and Standard Deviations***

One significant source of confusion within the area of assessment is the problem of deciding how atypical a child's performance must be before it is considered delayed or disordered. This problem is closely linked to that of eligibility for services, as Part H requires states to define the eligibility criteria for developmentally delayed and at risk. States have responded to this requirement in a number of ways, primarily by defining delay in terms of standard deviations or percentage delays on standardized instruments (Harbin, Terry, & Daguio, 1989). There are numerous problems with this approach to identification, some of which are statistical and some of which reflect the practical limitations of the instruments.

Descriptively, a standard deviation represents the dispersion or spread of specific scores or performances around a mean. As such, it is based on the concept that these

measurements are bell shaped or symmetric. Another form of the standard deviation, the estimator standard deviation, is calculated differently from the descriptive standard deviation and is used to make estimates about population parameters (see Brown, 1982). This distinction is rarely observed in practice, although the two statistics have different meanings.

Another problem concerns comparisons of tests that may have different means and different standard deviations. In other words, if a state requires that a child must score "less than 1.5 standard deviations below the mean in two or more areas of development on a standardized assessment of development" in order to be eligible for services as a developmentally disabled child, and more than one such standardized test of development is permitted to be used, it is possible that children of greatly differing abilities may be considered eligible. This follows because even when mean abilities are equal, distributions of these abilities may vary. This is often the case when two separate groups are administered the same test or when tests are used that have different standardization samples.

Recent data from the Carolina Policy Studies Institute indicate that 25% of the states use standard deviations to determine eligibility for developmental delay and nearly half of the states rely on percentage delay (G. Harbin, personal communication, 1990). Percentage delay refers to the relationship between a child's demonstrated performance on a developmental scale and his or her chronological age. This metric is even more problematic than the standard deviation. Practically none of the states report that the percentage delay is differentiated by age, yet 25% of a 1-year-old's development may mean something quite different from 25% of a 3-year-old's growth. Further, this approach assumes not only that the available developmental scales are accurate enough to make such fine

distinctions, but that they are equivalent across the age span, an assumption that is highly questionable (see Campbell, Siegel, Parr, & Ramey, 1986).

An even more disturbing aspect of standard deviations and percentage delays is that in some cases they are used to determine eligibility not only by means of an unsubstantiated methodology, but also with a single measure. Such an approach violates several of the guidelines noted in Table 1. Further, through adopting this approach, the preventive potential of early identification is severely restricted, because multiple factors will not be considered and the possibility for misidentifications (usually false negatives or under-identifications) is greatly increased. Standard deviations may have a place in establishing population parameters in screening tests that (1) have been validated against widely used outcome measures of development and (2) are used in combination with other sources of data. But these metrics have little justification in their current use for eligibility decisions and should be replaced by a multidisciplinary assessment of a child and family's overall functional capacity for growth and development.

### ***FUTURE DIRECTIONS***

If one generalization can be drawn, it is that no single test can accomplish the tasks required for effective early identification. Rather, a process containing multiple levels and multiple sources of information, obtained on multiple occasions, must be devised. Examples of such a multivariate model are presented in Kochanek and Friedman (1988) and Meisels and Provence (1989). Also presented in the latter document are 10 future policy directions for screening and assessment. They include the following:

1. **Prevention.** As discussed here, the concept of screening and assessment should be expanded to include prevention efforts. Through a focus on multiple sources of risk and on the social and familial origins of risk and disability, we can expect service providers to become increasingly aware of those factors that have a high probability of placing young children at risk. It then becomes the task of the early intervention system to provide some assistance to these families before these factors are transformed into developmental delays for the child.
2. **Eligibility.** New approaches must be considered for determining more clearly and equitably the eligibility for service of children and families. In many states eligibility is based on psychometric criteria that are of very questionable validity. Rather than standard deviations, a more appropriate approach would be a functional one designed to ascertain a child and family's problems and current abilities and resources.
3. **Validity and Reliability.** Although no single instrument can meet all of the challenges of early identification, it is often very valuable to have some direct psychometric data available for analysis. Needed are more and better early childhood developmental screening measures that are reliable and valid so that standardized screening and assessment can take place with greater accuracy.
4. **Clinical Data.** Early identification must rely on more than quantitative data. It is also essential that clinical information derived particularly from families be incorporated into the screening and assessment process. Such data should be closely linked to the IFSP process, with careful attention

being devoted to the needs and desires of parents.

5. **Parent–Child Interactions.** Research has demonstrated that the quality of infant–parent interactions can have a significant impact on child growth and development. Yet, most of the methodology available for assessing parent–child interactions is labor- and time-intensive and often requires research expertise for interpretation. More accessible measures are needed, as is more research that will further explicate the meaning and implications of existing parent–child interaction measures.
6. **Family Functioning.** One of the empirical discoveries of the past two decades is that the family’s functioning or lack of function can affect the development of young children. But very few instruments or approaches are available for screening or assessing families. This is an area requiring additional research.
7. **Screening the Environment.** The environmental component of a child’s life has also received major attention in the research literature, yet measures for screening the environment that are multicultural and that are appropriate for various social and economic groups are very limited. More development is needed in this area if service providers are to be expected to use this information in a multiple risk model.
8. **Restandardization.** Nearly all screening and assessment instruments were originally standardized on groups of healthy, low-risk children. It is essential that a corpus of instruments be restandardized on disabled and high-risk children and families, so that these instruments’ validity be known for these populations as well.
9. **Training.** Too often attention is paid only to instrument selection or instru-

ment development, but not to training and supervision of the administration of the instruments. This is particularly true of large scale, or mass screening, which is often conducted by lay professionals rather than by specialists. There is definitely a place in early identification for paraprofessionals, but training and supervision must be made a systematic priority so that the goals of early identification and intervention are not obscured by uninformed assessment.

10. **Longitudinal Data.** Long-term data should be collected that will enable us to devise more accurate risk indexes to be used for prediction, prevention, and intervention. Inclusion of multiple risk factors in a serial, multivariate early identification system requires longitudinal study of the impact of these factors on development and the efficiency of periodic rescreening for detecting situations that require early intervention. These studies should be population-based, to include both high-risk and low-risk families. In this way it will be possible to isolate those risk factors that are most frequently associated with subsequent developmental problems.

## **CONCLUSION**

As with so many elements in the field of early intervention, early identification is on the verge of emerging as an area with more dimensions than ever before recognized. Among these dimensions is that of prevention, and central to this purpose is the provision in Part H to find and serve children at risk for disabilities. It is no exaggeration to state that the emphasis on serving at-risk children, no less than the overall commitment to creating an effective process of early intervention, is dependent on the success of



the early identification system—one that is multivariate, serial, and sensitive to the multiplicity of factors that impinge on a young child's life.

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