26 *Early intervention as preventive intervention*

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The notion that the type and nature of early experience to which human infants are subjected will make a measurable and permanent difference in their developmental life course as children and adults has been supported by a convergence of research findings from widely disparate disciplines: animal research, human genetics, and neuroanatomy. Continually debated are such issues as the degree of malleability or plasticity in development, the age at which intervention is necessary or useful, which types of intervention activities are beneficial, and the cultural relativity of outcome parameters. Some contend that development below age 2 years is highly canalized (i.e., there is a predetermined, genetically based pathway for infant development that exhibits strong "self-righting" tendencies and resists outside influences) and therefore intervention during early infancy may not be very useful (McCall, 1987). Others point out that recent evidence supports a probabilistic versus linear view of development (i.e., simple one-to-one relationships cannot adequately explain which factors or combination of factors actually account for developmental change) and that changes throughout the life span as well as individual differences play as much of a role as early experience in determining developmental outcome (Lerner, 1987; Scarr & Arnett, 1987). However, these same authors support early prevention and intervention activities because of a belief that it is easier to change or prevent problems and deficits the earlier one starts, although it is not necessarily impossible to intervene effectively later in life.

There is thus a spectrum of belief as to the relative importance of early experience, the degree of malleability of development, and the rigidity of "critical" or "sensitive" periods during which intervention may or may not produce results. One's position on this spectrum dictates one's belief as to the roles early intervention programs can play in preventing or treating developmental problems. Although there is currently common agreement that early intervention programs should be provided to infants with documented handicapping conditions (Guralnick & Bennett, 1987) and to those at some level of identifiable risk of developmental problems (Bennett, 1987), little attention is paid to the need for primary prevention programs for all young children. This chapter will discuss the prevention roles currently played by early intervention programs and the potential for expanding the range of prevention services in order to reach a larger number of infants and families. The discussion will begin by presenting traditional definitions of prevention and move to a discussion of the problems in defining the concept of risk. The current evidence for the preventive impact of early intervention programs will then be reviewed, followed by a discussion of the need to

develop a broader national policy oriented toward prevention of child and family dysfunction.

TRADITIONAL CONCEPTS OF PREVENTION

Traditionally, health services have been conceptualized as encompassing three levels of prevention: primary, secondary, and tertiary (Keogh, Wilcoxen, & Bernheimer, 1986). These three levels can be thought of as three progressively narrowing nets, with the largest number of individuals caught in the first net, fewer in the second, and the fewest in the last. However, when the net at either of the first two levels has gaps, that is, fails as a preventive agent, more individuals end up at the next level, requiring more intensive and costly services than if prevention efforts had occurred. Primary prevention thus involves providing services to the broadest group of individuals in order to prevent health-threatening conditions from occurring. Such services attempt to stem the conditions that give rise to the causes of illnesses and psychosocial problems – in other words, to stop the process before it starts. A program to provide prenatal care and education classes to all first-time mothers would be an example of a primary prevention effort to reduce birth complications that place infants at risk for later developmental problems. Immunizations and health screenings are other good examples of primary prevention services.

Secondary prevention involves services provided once a condition is identified, but before symptoms or problems become evident (i.e., in the asymptomatic or preclinical stage). Service delivery at this level is designed to prevent progression of the disease or problem and the development of more extensive symptoms that will require more intensive and costly intervention. For example, despite the best primary prevention efforts, some pregnancies will develop complications. Specialized management of these pregnancies, however, may still prevent insults to the fetus or neonate (as well as detrimental effects on the mother), thus constituting secondary prevention. Another example of secondary prevention is the provision of a special infant formula and subsequent specialized diet for children who screen positive for phenylketonuria (PKU). In early infancy these children show no symptoms, but without a special diet they will develop mental retardation due to an inability to process one of the nine amino acids, necessary for growth, present in many protein foods. Secondary prevention targets individuals whose characteristics or symptoms place them at risk of developing further problems if some type of intervention is not undertaken at that point.

Tertiary prevention is the smallest net – the one into which an individual falls if things go wrong or fail to be identified at an earlier stage of symptom or disease development. In some cases, despite our best efforts at earlier stages of identification and prevention, or because prevention efforts did not reach everyone or were flawed in methodology, the disease or problem will fully manifest itself. Tertiary prevention is thus not really "prevention" at all; rather, it is the treatment and management of the disease, disability, or problem once it has occurred. The goal is to ameliorate or "cure" the condition, to restore the earlier healthier condition, or to prevent continued deterioration or death.

Along this continuum of service delivery, early intervention services for infants and toddlers can most often be described as tertiary services because they primarily target children with a clearly identified medical or developmental problem. The goal is to manage the problem and provide services to mitigate the effects of the condition. In some instances, however, early intervention programs have also been utilized to provide secondary prevention services to young children, who at the time of referral, do not