
Developmental Morbidity in Infants in Multi-Risk-Factor Families: Clinical Perspectives

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PREVENTIVE INTERVENTION PROGRAMS designed to reduce infant morbidity often focus on the service programs that will offer the most help at the lowest cost per family. That is, the programs seek to reach families that will use a service if it is available for families that would require only modest encouragement to use the service. There are families, however, who will not use, or are not appropriately served by, prevention programs providing only the traditional services, whether or not the programs incorporate modest outreach efforts. These are the multi-risk-factor families that require highly innovative, comprehensive service programs with extensive outreach to win their participation. If we give due weight to the degree of impairment or morbidity present in each of these multi-risk-factor families, rather than focus on reaching the largest number of families per unit of expenditure, the need to reach this often neglected group becomes compelling. In planning

service programs for them, account must be taken of the incidence and prevalence of preventable disorders in the context of the degree of developmental impairment that is likely in the children without a comprehensive program.

In multi-risk-factor families, the parents are often psychiatrically impaired, social and economic stress is usually high, and the parents are generally deficient in a variety of coping functions (including self-care, planning for the future, and judgment). These families are at risk not only of infant mortality but of infant morbidity as well, particularly in the area of psychological and social functioning during the first years of life. The challenge of providing services to ensure a healthy baby physically during the first month and year of life is likely to be actively pursued, whereas the challenge of supporting a family environment in which adequate social and psychological development can take place is too often ignored. The same poor coping capacity of multi-problem families that increases the risk of perinatal complications also contributes to postnatal morbidity.

Even when the newborn infant in a multi-risk-family is constitutionally healthy and robust, in

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many cases a relative deterioration in functioning is often observed during the first month of life rather than the expected improvement. This downward trend appears to continue until suitable clinical and social system techniques are applied (for example, to improve an infant's alertness and ability to focus). It is encouraging that appropriate clinical services provided during the first year of life can decisively reduce maladaptation—that they can, for example, improve the child's regulation of somatic functions, increase his interest in the world, foster the formation of human relationships, and further the development of capacities for differentiation, communication, and exploration. When, however, such services are not offered to these families, in many cases deterioration in the child's expected functioning during the first and second year of life is almost inevitable.

Such deterioration can lead to severe and firmly established difficulties that will adversely affect the child's basic capacities. The child may be hampered in organizing his behavior, mood, and thoughts, in laying foundations for the testing of reality, in controlling his impulses, in anticipating the future, in internalizing limits, in forming ethical and moral

judgments, and in developing self-esteem. In essence, without services, the best that might be reasonably expected for many of these youngsters would be that they would develop only severely primitive character organizations along asocial, antisocial, and concrete lines. The less fortunate of these children are likely to become overtly or borderline psychotic or to experience markedly uneven personality development. Nevertheless, there are case by case impressions that some babies begin life with superior capacities, such as a remarkable ability for self-consolation, for regulation of attention, and for social interaction, and thus can progress even in a deprived environment.

The focus of this paper is on the risk of infant morbidity, particularly psychological, social, and cognitive malfunction. My colleagues and I in the Clinical Infant Development Program (CIDP) at the Mental Health Study Center of the National Institute of Mental Health in Adelphi, Md., have been able to obtain an in-depth picture of the unfolding of infant morbidity in the multiple-risk-factor family. Families are referred to the Center because of severe psychiatric illness or personality impairment that is believed to interfere with a

child's primary nurturing and development or because of the family's demonstrated difficulty in rearing an older child who is manifesting severe psychological, social, and cognitive problems.

We use the term "multiple-risk-factor families" for those not only at risk of infant mortality and perinatal morbidity, but also for those in which the children appear to be at risk of "developmental morbidity." Our clinical impression is that families at the high-risk end of the spectrum in respect to any single risk factor, for example, substance abuse or poor nutrition, often evidence multi-risk factors. Such families have also been described as "multi-problem," "hard to reach," "crisis-oriented," and so forth (1-9). In addition, they have been classified by the way they use the service system and according to the kinds and number of problems they have. Results of the latter approach suggest that poverty or welfare status is not the only identifying characteristic, since families across the socioeconomic strata evidence the same multi-problem characteristics (10).

In spite of definitional differences, there has been general consensus on the clinical characteristics of these families. They tend, for example, to think only in concrete terms, to be need-oriented, and to have difficulty in anticipating the future and conceptualizing the consequences of their actions. The parents operate on a survival basis, often competing with their children for concrete, as well as psychological and social, supports (1,5,9,11-14). Although most of the families share these characteristics, an individual family may differ in some respects. Some of the families evidence clearly diagnosable mental illness such as a psychosis, and some, a predominance of severe antisocial and asocial personality patterns. Others are characterized by passivity and inadequacy in coping with life's daily challenges. Individual clusters of symptomatic behaviors also characterize the families—psychotic symptoms, child abuse, spouse abuse, marital difficulties, crime, delinquency, alcoholism, physical illness, and suicide (1,2,4,6,10).

Estimates vary regarding the use of health, social services, and welfare systems by these families. However, the significance of the challenge that they present is indicated by a study conducted some time ago (2), in which 6 percent of the study population was found to be using 45 percent of all public health resources and 55 percent of all social, psychiatric, and other auxiliary services. It has been estimated that this 6 percent use approximately 70 percent of all public expenditures for health, social, and auxiliary services (report of the congressionally authorized Joint Commission on the Mental Health of

Children, 1965). Moreover, the problem may be much greater now.

Children in Multi-Risk-Factor Families

Few in-depth studies have been conducted of the development of the children in multi-risk-factor families. In the classic descriptive study of Pavestaedt (1), only 13 of such families (which had 40 to 50 children between the ages of 2½ and 6 years) were studied. Nevertheless, the clinical impressions from the study were striking. Almost all the children showed social and psychological characteristics more consistent with 1½ to 2-year-olds in their egocentricity and need-orientation. Their ability to use a symbolic (or representational) mode to plan for their own needs and to consider the needs and actions of others was limited, and they had variable self-esteem. They tended to think in fragmented, isolated units, rather than in cohesive patterns. They were not capable of goal-directed organized action and were limited in their ability to socialize and interact appropriately for their age. The children already had an ingrained defeatist attitude and the core of an aimless (either asocial or antisocial) personality. The conclusion of the study was that there was a dire need to understand the developmental process in such children from the prenatal stage into later childhood.

Subsequently, no in-depth longitudinal studies have been done beginning with the prenatal period and following the children in multi-risk-factor families for 5 or more years—as is necessary to obtain information on how the behavioral patterns of these children develop and to gain insight into the repetitive, multi-generational nature of these families' problems. It seemed especially critical to identify the adaptive and maladaptive developmental patterns of such children and their families over time and to determine the clinical and service system techniques that are appropriate for preventive intervention. Therefore, my colleagues and I at NIMH's Mental Health Study Center undertook a study of multi-risk-factor families. The Center has provided periodic evaluations of the children in such families, based on standardized tests and naturalistic clinical and standardized recorded observations (for example, video tapes of interactions between the children and their care-givers). We have been able to study in depth for 2 or more years some 50 multi-risk-factor families with more than 200 children. (Details of the efforts made to recruit these families and of the clinical service approaches and assessments used will be described in another paper.)

Families were referred to the Clinical Infant Development Program as the result of an active outreach effort aimed at the "most difficult" families. A family was referred to the program if it met three criteria: (a) a history of difficulty in providing basic nurturing for an older child and in facilitating that child's development, (b) evidence of disturbed development in that older child, and (c) limitations in the mother's current functioning that could be expected to interfere with the provision of primary nurturing to a new infant. It quickly became apparent to the staff at the Center that we were dealing with families of various composition that were evidencing additional risk factors such as psychiatric impairment, low educational and socioeconomic status (not only in the case of the parents who were the potential participants in our program, but also in the case of their own parents), high levels of social and psychological stress during the woman's pregnancy, and varying degrees of nutritional deficits and substance abuse.

It quickly became apparent to us that infant morbidity, infant mortality, and perinatal morbidity all may be related to the same common factors—incapacities of the infant's care-givers for self-care or for care of another or for planning, anticipation, or organization (around a pregnancy or a child's developmental process). In our group of multi-risk-factor families, successful prenatal intervention reduced the expected levels of both infant mortality and immediate postnatal morbidity; few of the babies were born with physical or neurological handicaps. Yet we quickly observed that the next challenge, and in many respects the far more difficult one, was to reduce developmental morbidity.

Preliminary Report on Observed Trends

Because I am reporting in the middle of our study, I will discuss only some preliminary trends observed in children's development. These trends will be presented in a theoretical framework in which the stages of a child's early development and the adaptive infant and family patterns that can be expected in each phase of the child's development—as revealed in our work—are conceptualized (15–17). The trends described will not apply to every multi-risk-factor family, since different families and different infants apparently experience arrest at various levels of development. Intensive work with multi-risk-factor families, however, has shown us that they rarely are able to negotiate an infant's development into the second year of life without there being evidence of

disruption in their infant's development and a need for specific services to overcome it. We have been able to identify the point at which the family fails to support the infant's development and at which the subsequent disordered development occurs. We also have gained a preliminary impression of a distribution in which the more disturbed families show difficulties early in the infant's first year, whereas in some of the less disturbed families, there is no evidence of the likelihood of morbidity until the second year of life. In general, none of the multi-risk-factor families studied have been totally free of the morbidity described in this section.

We have observed babies at the Center who during the first few days of life are for the most part well in terms of weight, size, and overall physical health status, but who have difficulty in regulating social responsiveness, establishing habituation patterns, and organizing their motor responses. Some of them are withdrawn and unresponsive to animate stimuli; others are hyperlabile and overly responsive. Nevertheless, in contrast, a number of our babies also seem to be in optimal condition, even in terms of the soft neurological signs, and are appropriately adaptive in their initial capacity for homeostasis (self-regulation and an emerging interest in the world).

Yet, in general, babies in our program, most of whom were at high risk prenatally but who had normal patterns of development perinatally (prenatal intervention having assured adequate nutrition and other supports, including appropriate medical care), show significantly less than optimal development as early as the first month of life. Pediatric, neurological, and Brazelton neonatal examinations at 1 month of age, for example, show developmental progression but not the increased capacity for orientation, habituation, self-consolation, and social responses characteristic of a normative population.

By 3 months of age, instead of a capacity for self-regulation, organization, and an interest in the world, a number of our babies show increased tendencies toward lability, muscle rigidity, gaze aversion, and an absence of organized sleep-wake, alert, and feeding patterns. Their care-givers, instead of having an overall capacity for offering the babies comfort, protection, and an interest in the world, either withdraw from them and avoid them or overstimulate them in a chaotic and intermittent fashion.

At about the ages of 2 to 4 months, we expect to find in the infant the beginnings of a deep rich emotional investment in the human world, especially in his primary care-givers. We also expect a human en-

vironment that will "fall in love" with the child and will woo that child to fall in love in turn, in an effective, multi-modal, pleasurable manner. Instead, a significant number of these children exhibit a total lack of involvement in the human world or an involvement that is nonaffective, shallow, and impersonal, and we see care-givers who are emotionally distant, aloof, impersonal, and highly ambivalent about their children.

Between 3 and 9 months of age, we expect an infant's capacity for interacting with the world in a reciprocal, causal, or purposeful manner to further develop and form a foundation for his later organized causal behavior or thinking (reality orientation and testing). Instead, in the multi-problem families, the child's behavior and affects remain under the control of his internal states in random and chaotic or narrow, rigid, and stereotyped patterns of interaction. The child's environment, instead of offering the expected optimal contingent responsiveness to the child's varied signals, tends to ignore or misread them. The child's care-givers are overly preoccupied, depressed, or chaotic.

Toward the end of the first year of life and the beginning of the second, a child in a multiple-risk-factor family, instead of showing an increase in organized, complex, assertive, and innovative emotional and behavioral patterns (for example, taking his mother's hand and leading her to the refrigerator to show her the kind of food he wants), tends to exhibit fragmented, stereotyped, and polarized patterns. These toddlers may be withdrawn and compliant or highly aggressive, impulsive, and disorganized. Their human environment tends to be intrusive, controlling, and fragmented. The toddler may have been prematurely separated from his care-givers, or the care-givers may exhibit patterns of withdrawal instead of admiringly supporting the toddler's initiative and autonomy and helping him to organize what are now more complex capacities for communicating, interacting, and behaving.

As the toddler's potential capacities continue to develop in the latter half of the second year and in the third (18-36 months), profound deficits can be more clearly observed. The child, instead of developing capacities for internal representations (imagery) around which to organize his behavior and feelings and for differentiating ideas, feelings, and thoughts pertaining to the self and the non-self, either develops no representational or symbolic capacity, or if the capacity develops, it is not elaborated beyond the most elementary descriptive form so that the child's behavior remains shallow and

polarized. His sense of the emerging self, as distinguished from the sense of other people, remains fragmented and undifferentiated. The child's potentially emerging capacities for reality testing, impulse regulation, and mood stabilization are either compromised or become extremely vulnerable to regression. In other words, we see patterns either consistent with a later borderline and psychotic personality organization or severe asocial or antisocial impulse-ridden character disorders.

At this stage, the underlying impairment manifests itself in the child's inability to use a representational or symbolic mode to organize his behavior. In essence, the distinctly human capacity of operating beyond the survival level, of using internal imagery to elaborate and organize complex feelings and wishes and to construct trial actions in the emotional sphere, and of anticipating and planning ahead are compromised. In many of our families, the parents simply do not have these capacities. Even when they are not under emotional distress or in states of crisis or panic, they do not demonstrate a symbolic mode, as evidenced in the lack of verbal communication (only one aspect of symbolic communication) and in the lack of symbolic play. Such families tend to be fearful and to deny and fail to meet needs in their children that are appropriate for their ages. They engage the child only in nonsymbolic modes of communication, such as holding, feeding, and administering physical punishment, and at times they misread or respond unrealistically to the child's emerging communication, thus undermining the development in the child of a sense of self and a flexible orientation to reality.

Needless to say, the mastery by the children in these families of higher level developmental tasks is even more difficult. At each new level of development, the infants and toddlers who for a variety of reasons have survived earlier developmental phases intact invariably challenge the multi-risk-factor environment with their new capacities, for example, with their capacity for symbolic communication. The healthier the toddler, the more challenging and overwhelming he is likely to be to the people around him. In a pattern that we have frequently observed, the child moves ahead of the parent (engaging, for example, in symbolic play around themes of dependency or sexuality), and thus the parent becomes confused and either withdraws from, or behaves intrusively, toward the child. Shortly, unless other more skillful care-givers are available, the child begins to regress to presymbolic modes of behaving. The child may be able to consolidate his

higher level capacities when he begins to receive support from other systems, such as the school, and is capable of understanding his parents' limitations. These capacities, however, can only develop when the child is a little older. The youngster who experiences developmental failures, including the failure to develop a full representational or symbolic capacity (the basis for formal school experience later on), will unquestionably be handicapped in all subsequent opportunities for learning and copying.

Clinical and Service System Approaches

On the encouraging side, we have found that in most of the families we work with, the maladaptive trends just described can be reversed. By carefully pinpointing the area in which a child's development first begins to go awry and by using organized and comprehensive clinical techniques and service system approaches, we have been able to effect significant reversals in the direction of more adaptive patterns. Many parents in our population began their childrearing as teenagers and have commonly experienced further deterioration in their own functioning and that of their infants with each subsequent birth. In most instances, however, even when a woman has had four or more children, we have been able to reverse this pattern of deterioration by means of appropriate clinical methods and services. In a number of these multi-risk-factor families, we have observed that after they enter our program, a gradual improvement takes place in the mother and a modest but positive change in the first baby born thereafter. Then, if the family remains in the program and a second baby is born, the change in the family is dramatic and is reflected in the new baby's more optimal development.

For example, Mrs. E. was pregnant when she came to our attention. At first glance she appeared to the team social worker to be beyond help after she was found sleeping on the street. All of her children had been removed from her care by the county department of protective services after she had severely abused and neglected them. Mrs. E. appeared unable to think except in concrete terms, at times was psychotic, could not communicate her thoughts and plans, and seemingly lived by impulse only and a talent for survival. Shortly before the birth of her child a few months later, however, she entered our program, prompted by our outreach efforts. All of our collective efforts to induce Mrs. E. to use a support structure (for example, to obtain housing, food, or clothing) failed. Nevertheless, subsequently, of her own accord, she requested foster

care for the new infant before severe trauma could be inflicted on the child. Mrs. E. maintained contact with this child and made a great deal of progress in treatment over a 2-year period. When she became pregnant again, not only could she care for the newest baby but was able to work and support an apartment. Thus far, with therapeutic support, she has nurtured a competent 11-month-old and also has become constructively involved with her older children.

Even when improvement was not so dramatic, the expected patterns of deterioration often did not take place in our families, and some of them became capable of adequately supporting the growth and development of their children. Many mothers, for example, who previously had children taken away and put in foster care became able to care for a new infant as well as for their older children. Also, some mothers who had been recurrently hospitalized for psychiatric illness in the past developed the ability to function appropriately with a new baby and have not been rehospitalized for psychiatric illness for 2 or more years.

We found that the babies in our families had a surprising capacity to recover from early developmental deviations. Even when an infant's development had deteriorated during the first 3 months of life (as evidenced by gaze aversion, muscle rigidity, and a state of lability), intervention with appropriate patterns of care (including special clinical techniques) could lead to adaptive homeostatic and attachment capacities within 1 to 2 months. Infants would become apathetic and withdrawn and begin to show delays in sensorimotor development when no one would read their signals or respond to them. However, with patient, clinically informed care, they would begin interacting with people and, within 2 to 3 weeks of intensive intervention, would begin to catch up developmentally.

Implications for Clinical Services

I can discuss only briefly some of the principles on which a clinical and service system approach to multi-risk-factor families should be based. Although services for this population have been a subject of much study (2,5,9,12,13,18-27), I will try to present some perspective on the organization and services challenges for the child and family related to the child at each stage of his development.

A comprehensive approach requires that a number of elements be combined: (a) services that respond to concrete needs for survival (food, housing, and so forth), (b) a planned effort to meet the need

of the family and the child for an ongoing, trusting human relationship, (c) specific clinical techniques and services that focus on the many lines of a child's development and that are specific to the child's tasks at each developmental subphase, and (d) a special support structure to provide at one site partial or full therapeutic day care for the child, innovative outreach to the family, and ongoing training and supervision of the program staff.

To respond to the family's concrete needs, various community agencies need to be organized to build a foundation for the family's survival. However, this approach alone will not ensure a family's survival, since many of the families, for a variety of reasons, are adept at circumventing offers of traditional supports.

The second component of a comprehensive effort, and one that is absolutely necessary for these families, is a human relationship with one or more workers. Such a relationship, however, is not easy to establish, because distrust is often ingrained in each parent as well as in the family as a unit. This human relationship needs to grow in ways paralleling the infant's development and needs to help the parents facilitate that development. To provide this human relationship, we have used both a team and a single primary clinician.

Organizing to respond to a family's concrete needs and offering the family a human relationship, however, are not enough. That human relationship must be able to help the parents understand some of their maladaptive coping strategies and teach them how to deal both with their own primary needs and those of their infant. In addition, special clinical techniques and patterns of care (17) to reverse maladaptive developmental patterns in the areas of affect and social interaction, sensorimotor development, and cognition must be available at the appropriate time. Moreover, the intervention must occur over a sufficiently long period to allow the family's own strengths to take over and sustain it. We are speaking here then not of a crisis intervention approach over a few months but an approach that will be available to the families for several years at a minimum. We have found that after working with many of these families for some 2 years, the mother's capacity to nurture and facilitate the development of a new baby is significantly more advanced than when she entered the program pregnant with an earlier child. In other words, when the helping relationship is offered over a period of time, the frequently observed trend of multi-problem families to deteriorate further upon the birth of each subsequent baby (a

trend that often starts when the parents are still teenagers) begins to be reversed.

In addition, the approach to the multiple needs of these infants and their families must be integrated. Simply offering nutritional advice (28) or educational counsel, providing cognitive stimulation, or taking an entirely infant-centered or entirely family-centered approach is not sufficient. The infants have individual differences that dictate special patterns of care; at the same time, the concerns of their caregivers and other family members have to be addressed. Each stage in the infant's and the family's development requires specialized clinical services and service system approaches (17).

Conclusion

In summary, infant morbidity, including social, psychological, and cognitive malfunction, is a major national concern. Yet, reducing the risk factors in infant morbidity has, perhaps necessarily, been considered of secondary importance to reducing the risk factors in infant mortality. As infant mortality is increasingly reduced through improved technology and improved delivery of services, more and more babies will be potentially capable of optimal development along social, psychological, and cognitive dimensions. However, as the families in our study have shown, the risks of infant morbidity are grave. These risks encompass a broad range of basic human needs—the fundamental need to survive associated with physical protection and care, the need to form some human attachment, the need for someone to read and respond correctly to a baby's signals, and the need to foster a youngster's own capacity for basic skills, such as reality testing, impulse modulation, mood organization, initiative, and mastery of new experience. These risks of morbidity will remain grave until the programs organized to reduce them take on an integrated prenatal and postnatal focus that extends over at least 3 to 5 years. In these programs, consideration must be given both to the infant's and the family's needs, and treatment approaches must build on the potentially solid constitution and developmental pattern of the infant. Only then will such intervention offer the promise of reversing the unhealthful trends that we have observed in multi-risk-factor families, in which one generation with many problems leads to another generation with many of the same problems. Many of the families in our study already represent the third or fourth generation of multi-risk-factor families.

Although the costs of offering programs of inter-

vention are great, the costs of not offering them are even greater. The estimated 6 percent of the U.S. population that use 50 to 75 percent of all health, mental health, and social services account for economic and social costs that are compounded by the additional loss to society that these people might have contributed to the labor force and to other creative endeavors (2).

Programs of prevention are expensive, but they are not so costly as might be imagined, since even when services are offered to an entire high-risk community, only a small percentage of the families in that community will actually need the most intensive help. Selma Fraiberg, as director of a Michigan infant mental health program, found that in a program offering a range of preventive services including intensive individual clinical services, the average cost per family participating was \$850 (personal communication, December 1980). In terms of providing screening and backup for an entire community, the cost per family for such preventive services would average out to a significantly lesser amount.

Perhaps we need to look at the cost-benefit ratio. Using cases from our own study to project the probabilities (based on observed family patterns and clinical assumptions) of different outcomes with and without preventive intervention, we found that benefits outweighed costs by five or six to one (depending on the degree of risk). Interestingly, in the cases at greater risk, in which initial costs might be high, the benefit to cost ratio was often better than in less severe cases, because the benefits of preventive intervention were relatively greater (29).

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