CHAPTER 15

Issues in Infant Psychiatry

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Introduction

Psychiatrists, pediatricians, and family practitioners see infants* from birth to 36 months in their practices and in academic and research settings. In recent years, the field of infancy and early childhood, and more specifically, infant mental health, has provided a wealth of information about emotional, intellectual, motor, and sensory patterns in infancy. Contributions to the science of infancy have included a substantial body of evidence regarding the types of challenges that can interfere with optimal development. Consequently, we are becoming better able to create, maintain, or improve conditions for healthy development. Prevention and intervention efforts may begin before babies are born or conceived, as in the case of interventions that target spacing subsequent children. However, gaining a comprehensive understanding of a child and family's circumstances in order to formulate an effective, preventatively oriented treatment approach is challenging.

Understanding the difficulties and developing a treatment plan with young children is harder to accomplish than with older children and adults for several reasons. First, despite enormous variation in children, their families, and the particular challenges being considered, infant distress signals often appear very similar. Second, since development occurs so rapidly over the first 3 years of life and multiple lines of development are highly interrelated, several observations over time are necessary to distinguish typical variations in development from patterns that may indicate a chronic problem. Most importantly, infants and young children need to be understood in context. The relevant contexts range from their relationships with their primary caregivers and families, to their cultural backgrounds, to the impact of events in their communities. Each of these contexts and the interrelationships among them impact infant development on an ongoing basis.

Infant mental health

In the last century, research and clinical work with infants and young children has provided a wealth of information about the origins of both typical and atypical development. Early experiences of deprivation, abuse and neglect, organic and medical complications, and relationship problems often appear in the histories of children and adults with difficulties (Fraiberg and Fraiberg, 1980). Even in the face of tremendous neural, emotional, and relational plasticity, scientific evidence suggests that development in the first few years of life sets the foundation for later capacities, achievements, and challenges (Shonkoff and Phillips, 2002)

A brief history

For the field of psychoanalysis, the mysteries of adult personality development lay in infancy. While Sigmund Freud based his theoretical framework on the early relationship
between infants and their parents, it is Anna Freud who is credited with launching the field of child analysis. As early as the 1920s, Anna Freud was practicing psychoanalysis with children. Her pioneering clinical and theoretical work emphasized the techniques of child analysis, infant behavior and development, childhood stress and relationships, and play. Colleagues and contemporaries included René Spitz, a leading figure in psychoanalysis, infant observation, and child deprivation. Spitz’s films and writings about infancy, *Hospitalism and Anaclitic Depression* (Spitz and Wolf, 1946; Spitz, 1946), chronicled infants’ early emotional development in the context of separation from parents. Margaret Mahler and D.W. Winnicott both based much of their theory on the very early relationship between the mother and the infant. Winnicott described the “good enough” mother who provided a relationship in which her baby could survive and thrive, and also wrote about the “goodness of fit” as the match between the parent and the baby. Winnicott did not separate the baby from its context arguing that “there is no such thing as a baby” (Winnicott, 1960, p. 586).

John Bowlby and James Robertson studied hospitalized infants. They identified three stages in the response to maternal separation: protest, despair, and denial/detachment (Bowlby et al., 1952). Bowlby’s development of attachment theory emphasized the evolutionary importance of maintaining contact with a caregiver with respect to the safety and emotional development of the infant. Exploring the mechanisms of Bowlby’s theories through systematic observations of infant-mother interactions, Mary Ainsworth and her colleagues identified four patterns of relationships between infants and their caregivers: secure, avoidant, resistant, and disorganized—each with its own distinct patterns of both infant and caregiver behaviors (Ainsworth, 1967; Ainsworth et al., 1978; Main and Solomon, 1986). By the early 1960s, a wealth of research about the infant-mother relationship existed.

In the 1960s Selma Fraiberg presented her work on congenitally blind infants. Fraiberg and her colleagues described parent-infant psychotherapy and detailed approaches for clinicians from various disciplines who were working with infants and their families. In her work, Fraiberg used parental responses and reactions toward the child to inform treatment. The goal was to help the infant-parent relationship emerge in a space free of the distortions and displaced affects that engulfed their contexts. She helped professionals understand the importance of identifying the language of infancy and helping caregivers key into what the baby was saying. “Ghosts in the nursery” (Fraiberg et al., 1975) was the first paper on clinical infant mental health and remains an essential reading for infant specialists.

In the 1970s, as the clinical work in infant mental health continued to evolve, researchers continued to explore infant development and the influencing factors (Sameroff and Chandler, 1975). The Clinical Infant Development Program (CIDP), a comprehensive assessment and intervention program with at-risk infants, was created at the National Institute of Mental Health (Greenspan and Wieder, 2003). In 1977, ZERO TO THREE: National Center for Infants, Toddlers, and Families emerged from CIDP. Today, ZERO TO THREE is one of the leading organizations in promoting and advancing the field of infant mental health. ZERO TO THREE conducts training programs (e.g. diagnostic classification, reflective practice), sponsors leadership initiatives, publishes texts and videos on infancy and early childhood, advocates on behalf of infants and toddlers on local, national, and international levels, interfaces with media and professionals regarding infant mental health, and houses resource centers for parents and professionals.

### Defining infant mental health

Infant mental health is synonymous with health, social, and emotional development. Zeanah and colleagues describe infant mental health as a “state of emotional and social competence in young children who are developing appropriately within the interrelated contexts of biology, relationships and culture” (Zeanah et al., 2000b, p. 14). Similarly, ZERO TO THREE: National Center for Infants, Toddlers, and Families considers infant mental health in the context of the developing capacity of infants and children from birth to 3 years to “experience, regulate and express emotion; form close and secure interpersonal relationships; and explore the environment and learn” (ZERO TO THREE, 2003). The first years of life reflect a period of rapid growth and change, including dramatic increases in the differentiation and complexity of a young child’s social and emotional development.

Infant mental health and infant development more generally occur within the context of the family, community, and cultural expectations for young children. While the infant-caregiver relationship is the focal context in which infant mental health emerges, this relationship is embedded in other contexts that interact and influence human development (Bronfenbrenner, 1979) and in this case, infant mental health.

Cultural considerations regarding infant mental health include how infant mental health is understood within the particular culture. Additionally, adult goals and expectations for infants and for child development shape interactions and experiences in which infants grow. Cultures also vary with respect to childrearing practices used to promote, protect, and restore infants’ and young children’s mental health.

### Infant development

No discussion of infant difficulties or the practice of infant mental health can begin without a solid understanding of typical development in the first 3 years of life. For practi-
tioners working with infants and young children, developmental theories offer useful guidelines for predicting future development and evaluating whether an infant is on a healthy trajectory. Developmental perspectives attempt to explain a child’s progression and maturation (Metcalf and Rowe, 2000). Infancy and early childhood is a time of rapid change linked to behavioral, cognitive and social-emotional advances. Typically, future development or current developmental level is predicated upon what already exists or has emerged. Importantly, developmental discontinuities are also evident, often marking key transition periods. The central role of experience in development must also be underscored. Experiences impact development differently depending on when they occur.

Key developmental theorists

While no single theory can adequately capture the complexity of human development, a number of key theorists emerged during the 20th century. Combining clinical experience, systematic observation, and experimental designs, Jean Piaget, Sigmund Freud, Erik Erikson, Anna Freud, John Bowlby, and their students and collaborators contributed a wealth of information about the progression from infancy to adulthood. These individuals, among the many other developmentalists exploring the earliest years of life, were perhaps most influential in informing the fields of infant psychiatry and infant mental health.

Especially relevant to infants and young children, Piaget emphasized the infant’s active role in exploring the world and attempting to master it. His explicit account of cognitive advances during the first few years of life (i.e. sensorimotor and preoperational stages) provide an avenue for understanding how young children learn about and understand their worlds.

Sigmund Freud’s theory of personality development and the stages he proposed sparked both psychoanalytic and developmental avenues for understanding and working with issues in infancy and early childhood. The Id, Ego, and Superego and the psychosexual stages (e.g. oral, anal, phallic) emerged from Freud’s work. Erik Erikson elaborated upon Freudian theory to encompass social and cultural dimensions. Erikson’s work identified the importance of interpersonal relationships above and beyond intrapsychic conflicts in shaping development. He articulated drives that moved people toward life and those that move people away with tension between these goals, creating typical crises in the life cycle. In Erikson’s eight-stage model of normal development, each stage presents both intrapsychic and interpersonal balances that must be achieved. Future development depends on previous accomplishments.

Anna Freud expanded her father’s theoretical framework and therapeutic approach to the realm of childhood. Credited with founding the field of child analysis, Anna Freud’s theories of ego defense and development emerged from her clinical work and extensive observations of young children in nurseries during the 1930s and 1940s. Together with her collaborators, Anna Freud provided foster care to many young children and attempted to help them form attachment relationships by providing continuity of caregivers and encouraging their mothers to visit frequently.

Credited with developing the field of attachment, John Bowlby’s work has had profound implications for the science of relationships. Trained as a psychoanalyst, Bowlby departed from drive theories and conceptualized infants’ relationships with their caregivers based on ethologic (the study of animal behavior), modern evolutionary theory, and control systems theories. Bowlby described attachment behaviors as those that maintain a child’s proximity to a caregiver in order to avoid harm. Over time and with consistent interactions with a familiar caregiver, the infant learns to tolerate the anxiety associated with brief separations and is able to move away from the caregiver in order to explore the environment. Bowlby’s work highlighted the social origins of relationships between infants and their caregivers.

Importantly, developmental theories have been challenged because many of them rely on infant characteristics and abilities, often at the expense of familial and environmental influences. As discussed previously, infant development cannot be understood without understanding the context in which the infant exists.

Transactional model

The Transactional Model, developed by Sameroff and his colleagues (Sameroff and Chandler, 1975; Sameroff and Fiese, 2000), proposes that developmental outcomes are the products of interactions over time of a child’s life and his or her experiences and environment. Continuous dynamic interactions between the child and his or her family and social contexts shape infant outcomes and the infant-caregiver relationship. Social relationships will amplify certain child characteristics and minimize others so that an infant born with certain characteristics will develop differently depending on the relationships and environment to which he or she is exposed.

Importantly, the earliest research on the transactional model suggested that the mechanism by which early risk influences development is often through negative effects of child characteristics on caregivers and the caregiving relationships (Sameroff and MacKenzie, 2003). Consider, for example, the situation when an infant is born prematurely. Premature infants are often medically fragile, developmentally immature and exhibit greater physiologic, motor, and state disorganization and fewer self-regulation capacities (Als, 1982). Because they have medical complications, are less responsive and available for social interaction, and provide diffuse and less predictable cues (Goldberg, 1979),
their parents or caregivers may experience difficulties in taking care of them. Caregivers are likely to interpret infant unavailability according to their own frameworks. Such frameworks may include things like guilt about having a baby early, memories of a traumatic birth, postpartum depression, worries about financial issues related to hospitalization, and lack of social support. Caregiver responses, therefore, will be based not only on what the infant brings into the situation, but also on their experiences and interpretations of infant behavior. Parents who are having difficulties coping with the Neonatal Intensive Care Unit (NICU) environment, who are experiencing life stressors, or who are trying to manage their own mental health difficulties are likely to respond to a premature infant very differently than parents who are coping well, have access to resources, and are psychologically healthy. In the former case, preterm infants’ characteristics may increase parents’ difficulties in determining appropriate responses, decrease infants’ experiences of sensitive and appropriate caregiving, and ultimately create a cycle in which parents feel less efficacious and infants experience fewer contingent interactions. More challenging interactions may also detract from some of the joy and pleasure inherent to parenting. In the latter, parents may be psychologically and physically available to the infant, enhancing their awareness of the infant’s cues and their ability to provide continuity of caregiving. The infant, in turn, will experience this responsiveness across repeated interactions, experience greater behavioral organization, and ultimately develop adequate self-regulation strategies.

As illustrated in this example, the Transactional Model requires an understanding of the complex interactions among child characteristics (prematurity), caregiver characteristics (mental health, availability), and environmental factors (NICU, stressors). Such information is a prerequisite for drawing conclusions in evaluations, making appropriate treatment recommendations and, more globally, understanding child development.

**Developmental accomplishments**

The following section will detail some developmental accomplishments routinely observed during the first 3 years of life. We will provide an overview of development in the motor, cognitive, and social and emotional domains. Early development can be segmented in countless ways. Age groupings in the present chapter were selected to reflect some coherency across domains, emergence of new skills, and transitions that commonly signify developmental shifts.

As with any discussion of development, readers must be cautioned to use the information provided only as a guideline. Achieving or not having achieved particular milestones during a specific time period indicates neither giftedness nor delay. Typically, a comprehensive professional assessment is necessary to determine the extent and implications of developmental delays.

**Prenatal development**

The rapid advances in fetal development from a single cell to a complex organism makes prenatal development a time of particular interest to practitioners working with infants. Scientific and technological advances have afforded us a literal window into the world of the developing fetus. From three-dimensional photographic records of the fetus at each stage of development (Nilsson and Hamberger, 2003) to studies documenting the impact of prenatal exposure to teratogens (Lester et al., 2000), maternal stress, and chemical agents (e.g., pesticides), the role of the environment in shaping development is evident.

Typically, the protected uterine environment provides everything that the baby needs to develop appropriately. The mother’s body supplies nutrition, hormonal cycling, physiologic regulation, motoric input, modulated sensory stimulation and more. However, because development occurs so rapidly during pregnancy, perturbations to the fetus may have dramatic consequences with respect to infant outcomes. Maternal substance abuse (i.e. drugs, alcohol, and tobacco) may directly damage the developing nervous system and other organs or result in preterm delivery, which is associated with numerous developmental risks. Physical damage to the fetus may occur as the result of physical injury of the mother, inadequate blood/nutritional resources, and disease. Other risk factors during pregnancy include maternal viral infections and malnutrition.

Prematurity and obstetric complications necessitate special consideration with respect to infant development. Many premature infants experience ongoing medical complications that alter their development. Compounding these effects are the psychosocial aspects of beginning life in the NICU and experiencing an altered relationships with caregivers. In cases of congenital anomalies, genetic abnormalities alter developmental trajectories from the start. Importantly, this does not suggest that environment impacts development less. An infant diagnosed in utero with Down syndrome would be at risk for even greater developmental difficulties if he or she did not receive adequate nutrition during the prenatal period.

To optimize prenatal development, prevention efforts typically target providing prenatal care to mothers (e.g. folic acid, routine obstetric appointments, and access to nutritional resources). Other efforts aim to reduce exposure to teratogens by treating substance abuse. Mental health-oriented prevention programs typically consider psychosocial factors, including maternal psychologic health, family environment, and social support networks in addition to the above.
The neonatal period (0–2 months)

While little empirical evidence exists to suggest that the experience of being born has lasting psychologic impact on emotional development, the circumstances surrounding a birth certainly have the potential to impact later well-being. Among many elements, the physical environment of the labor and delivery room (e.g. a comfortable, home-like appearance versus the sterile operating room), the similarity between parents’ expectations of bringing a child into the world and the reality of the unfolding event, and the history that families bring with them to the hospital (e.g. having experienced previous perinatal losses) may all impact the emerging relationship between infant and his or her family. Consider the marked differences between a routine vaginal delivery, a planned Cesarean section, and an emergency delivery resulting from a placental abruption; or whether the first moments of life begin in a mother’s arms as opposed to starting life in a transport incubator on the way to the Neonatal Intensive Care Unit. For some infants, the neonatal period lasts a couple of months, while for others it may last for 6 months, as in the case of an infant born at 24 weeks. Supporting the emerging relationship regardless of the circumstances under which it begins is critical to promoting development and is a central aspect of early work with infants and their parents.

Importantly, the infant-parent relationship begins long before the baby is born and oftentimes, before the baby is conceived. Expectations about what an infant will be like and the psychologic relationship between parents and the baby develop throughout pregnancy (Cohen and Slade, 2000). They become especially salient during the third trimester, as delivery approaches and the corresponding physical changes clearly indicate that another person is there. Fertility history and previous birth experiences are among the many factors that impact expectations of childbirth and parenting. The birth of an infant may differ markedly for parents who have struggled for years to conceive a child in contrast to parents with a history of perinatal loss. For the family with fertility problems, the birth may be a time of joyous celebration. In contrast, the family with a history of perinatal loss may experience tremendous fear and anxiety about this baby’s survival coupled with trauma and grief stemming from past events. Clearly, history and prenatal relationship building blocks shape the way parents interact with newborns and, therefore, impact infant development.

Once outside of the protective uterine environment, a newborn is suddenly faced with the challenge of breathing, ingesting and eliminating nutrients, regulating body temperature, and directly processing environmental stimuli, among other things. Initially, newborns depend on adult caregivers to provide a substantial amount of regulation (e.g. changing a wet diaper, selecting appropriate clothing, providing food) for basic systems. During the first months of life, responses of others to distress and social initiations impacts infants’ understanding of what is expected of them and what they can expect of others. Repeated interactions with nurturing, protective, stable and consistent caregivers are essential to healthy development and form the foundation of attachment relationships.

Newborns have an array of behaviors that they use to communicate physiologically driven needs. Most commonly, adults identify distress in the form of crying or fussing as a primary mode of communication. However, newborns exhibit subtle and overt cues that signal organization or disorganization. Physiologic (e.g. breathing, heart rate, skin color changes), motor (e.g. extensions and flexions, tremors, fanning of fingers and toes), and state (e.g. transitions between states, types of available states) changes all indicate whether an infant is able to approach a situation or is in need of withdrawing to regroup (Als, 1982). For example, an infant who turns pale, pauses breathing and then resumes at a rapid rate and starts looking away or falling asleep while someone is trying to play with him is communicating that the social interaction is too challenging at that moment in time. Responding to these subtle cues might include pausing and allowing the infant to recover and resume the interaction by initiating a gaze.

The temperament literature (Chess and Thomas, 1991) suggests that infants are born with characteristic styles of behavior that evolve into consistent patterns. Caregivers respond to this style and their responses shape future behaviors. The “goodness of fit” between an infant’s behaviors and a caregiver’s style impact the manner in which development unfolds. For example, the combination of a baby displaying high levels of negative emotionality and the baby’s parent having a low frustration tolerance may create a pattern of negative and hostile interactions.

With respect to the attachment system, precursors of attachment are based upon both infant and caregiver behaviors. The infant must have a sufficient repertoire of behaviors to communicate with the caregiver. At the same time, the caregiver should demonstrate awareness and responsiveness to infants’ cues, flexibility in responding (Browne et al., 1996), and well-timed responses to infant signals (Kelly and Barnard, 2000). At birth, newborns show a preference for their mother’s voice and smell. Visual input is best when it is the distance of a caregiver’s face from the baby when the baby is being held (i.e. 6–12 inches away). In fact, the human face is one of the most interesting things for a newborn to see because it is designed with distinct focal points (the eyes), contrasting colors (darks and neutrals), and moves from time to time.

Over the course of the first months, newborns become better able to track objects and orient to sounds. Newborns appear to respond well to soft, high-pitched voices and soothing, cooing sounds. While often interpreted as social
and responded to with delight, smiles during sleep or waking in the first 4–6 weeks of life are reflexive in nature. The social smile typically emerges between 4 and 8 weeks. "Cooing" also emerges during the second month of life and vocal conversations between infants and caregivers can take place. While movement is typically limited to less controlled extremity and head movements with some tucking of the trunk, an infant's jittery and jerky movements become increasingly smoother during this period and startles begin to disappear.

Early infancy (2–9 months)

The rapid physical and developmental advances continue during the next few months of life. During this period, patterns of behavior emerge and families generally develop rhythms and routines based upon the infant's signals and factors in the environment. Caregivers can generally recognize and respond to the infant's efforts at communicating in addition to anticipating circumstances under which the infant will require support or intervention. Sleep-wake cycles become more regulated, shifting from shorter periods of sleep interspersed with feedings and alert times to several hours of undisturbed sleep followed by longer awake periods and regular naps. Motor and social advances drive cognitive development and the capacity to explore the environment.

Motor accomplishments are the products of improved coordination of movements and increased physical strength and control. The jerky and uncoordinated newborn movements tend to disappear. Initially, improved control of the head and body enables infants to track and follow objects, reach for them and ultimately transfer them between hands and to others. Exploration of the infant's own body increases. Early body movements and wiggling lead to rolling over and eventually scooting, crawling, or moving around. Most infants can bear weight on their legs and enjoy jumping up and down while being supported by a caregiver. Postural control also enables infants to sit up and explore the world differently because of their upright position and free hands. Some infants may also be standing with assistance, pulling up on objects, or even standing on their own and taking some steps. Refined hand control enables infants to be more purposeful in their efforts to pick up and manipulate small objects. New skills lead to exploration of the environment and development of play routines.

This period evidences remarkable changes in communication abilities and social exchanges. With longer periods of alertness and a growing capacity to attend and process the environment, young infants are able to engage in social interactions that form the basis of conversational skills. Verbalizations increase in response to seeing something stimulating in the environment, experiencing a need, or engaging in a social interaction. Cooing and gurgling become babbling of vowel and consonant combinations, from which emerge first words. Infants often acquire and use signs to communicate (e.g. waving, pointing) their intent during this period.

Increased capacities in attention and memory are markers of cognitive development at this time. Because of the developmental shift in representational capacity, infants exhibit changes in their engagement with objects. The trajectory evolves from infants losing interest in an object the moment it is out of sight, to looking for missing objects, to recognizing a partially hidden object, to searching for missing objects after they are hidden. These representational capacities impact the social and emotional domain as well, and infants become keenly aware of their primary caregivers and evidence distress when the caregivers are absent.

Repeated interactions with familiar and nurturing caregivers reinforce infant recognition of important attachment figures. Differential responses to parents are evidenced during this period with bigger smiles, body movements, and movement toward these close and important figures. Once these attachment bonds have been formed and maintained, the likelihood of forming additional attachment relationships decreases, barring unforeseen circumstances. Separation anxiety, or distress and discomfort at actually being separated from the caregiver or at the perceived threat of separation, emerges. Distress at seeing strangers, aptly named "stranger anxiety," also manifests itself at this point in development. As attachment relationships become more firmly established, infants notice and mind the absence of their attachment figure. By the same token, infants recognize unfamiliar people (and situations) as such and make efforts to move away from them and toward the safety of their attachment figures.

Later infancy (9–12 months)

Toward the end of the first year, locomotion advances and coordinated motor systems facilitate very active exploration and manipulation of the environment. Most infants can sit up, crawl toward or away from people and objects, and walk a few steps without support. Manipulation of objects as tools (e.g. a spoon) emerges as fine motor skills improve. Early signs of self-care behaviors and strides toward independence may appear. For example, older infants may pull clothing off, feed themselves, and carry desired objects to and from places.

Communication abilities continue to improve with consonant vowel combinations becoming first words (e.g. "ball," "mama," "bye-bye"). Infants begin to make meaningful distinctions between sights and sounds in their environment. They are able to use routines and predictability as signals for what happens next or what is expected of them in addition to facilitating transitions between events. Intentional
communication is apparent and older infants may become frustrated when they are not understood. Socially, older infants actively interact with others (e.g., peek-a-boo, building and knocking over blocks, singing songs), watch and imitate what others do, and delight in repetitions of favorite activities. They continue to express a preference for people and may even possess favorite objects. Social interactions continue to function in a regulatory capacity, helping infants manage their own affective experiences while simultaneously providing an enriching context for learning about the environment around them. Caregivers can elaborate experiences, narrate situations, communicate information (e.g., naming objects and activities), and demonstrate new skills all within the context of these interactions.

Cognition and caregiving also interact in that infants develop the capacity to jointly attend to and share the viewpoint of the caregiver as well as request that caregivers attend to what they see. In a series of famous experiments using a “visual cliff,” researchers demonstrated that 1-year-olds used “social referencing” to visually check with their mothers before embarking on an ambiguous task (Klinnert et al., 1986). If the mothers’ facial expressions communicated joy or interest, most infants proceeded with the task, while expressions of anger or fear tended to prevent infants from completing the task.

Attachment relationships are typically solidified by the time infants reach 12 months of age. In securely attached dyads, a separation from the attachment figure results in distress, while reunions result in seeking comfort from and proximity to the caregiver, which alleviates distress (Ainsworth et al., 1978). Having a secure base typically enables the young child to actively explore the environment and supports optimal cognitive, social, and emotional development.

**Early toddlerhood (12–18 months)**

With the accomplishment of walking (then running and jumping) comes physical exploration and manipulation of a toddler’s surroundings. Over these few months, toddlers figure out how to build tall towers and knock them down, lift and carry objects, push and pull things, turn and open and close toys, climb on the playground or on furniture, dance, hop and jump, throw balls, pound objects, and make more refined movements with utensils and writing implements.

This active exploration provides the foundation for cognitive leaps and increases in knowledge about how things in the world work. Toddlers learn about means-ends relationships, physical and spatial characteristics of objects, and relationships among objects (e.g. in/out, up/down). Repetition and practice helps toddlers refine their skills. Because toddlers have the ability to access much of the environment, conflicts with parents often arise about what is appropriate or accessible. Thus, parents of toddlers find themselves having to set more limits, create more boundaries, and say “no” or redirect their children’s behavior.

While communication skills continue to improve, the young toddler still has difficulty communicating clearly when relying exclusively on words. The young toddler may string together two or three words (e.g. “more milk”) to communicate a desire or thought. Vocabulary increases over this period and toddlers are very interested in naming objects and having others name things for them.

Daily routines of playing, eating, self-care, and sleeping become increasingly important in helping the young toddler organize his or her world and prepare for events in the future. While still too young to comprehend these issues, rituals and routines also help toddlers learn the “rules,” including such things as appropriate behavior at the table, cleaning up, and sharing with others. Continuity and predictability in structured environments provide a sense of safety and comfort for the toddler; he or she knows what to do and what will happen when he or she does it. This continuity and predictability extends to relationships with caregivers. Toddlers are very sensitive to separations from their caregivers. In addition to separation anxiety, young children may experience other fears. Sudden noises, large or unfamiliar objects, or strangers might evoke distress. Relationships with caregivers also provide important information about how to behave. Toddlers are keen observers of parent behavior and are likely to imitate things they see their parents doing, regardless of whether they understand the nature of the behavior. Aside from modeling behaviors, parents also reinforce or punish toddler behaviors, thereby informing toddlers of what they consider right and wrong.

**Toddlerhood (18–36 months)**

Perhaps the most salient developmental accomplishment of toddlerhood is the capacity for symbolic representation. Toddlers learn to use words and symbols to communicate their internal and external experiences. Pretend play affords toddlers with a mechanism to control both the outside world and express and work out their inner thoughts and feelings. While language development varies tremendously, many toddlers experience a language explosion between 18 and 24 months of age. By the time children are 2, their expressive vocabulary includes between 100–200 words and they can understand several hundred more. By age 3, young children are able to communicate using sentences.

Independence and self-assertion are central characteristics of toddler development. Toddlers may assert their wish to do things on their own while not having the requisite skills to complete the activity. Definite opinions and preferences emerge and are communicated, often at inopportune moments. These assertions and moves toward independence may increase the level of conflict between the toddler
and his or her parents. Obtaining cooperation from a toddler involves setting clear guidelines for choices, which usually means letting the toddler choose between one of two options that the parent is willing to support. Temper tantrums and low frustration tolerance necessitate anticipation of circumstances that will be challenging and the application of a consistent and clear intervention.

Relationships with parents remain central throughout toddlerhood. Although independence and the ability to do things on their own increase, toddlers elicit parental involvement in play and caregiving. Because they are avid explorers but cannot accurately assess situations, toddlers require close supervision and structure in order to ensure their safety. Some toddlers obtain additional security and comfort from particular special objects (e.g., a blanket) and may turn to these objects in times of distress or transition. The use of these “transitional objects” is particularly appropriate in situations where parents are not available.

With peers, toddlers move from parallel play, where toddlers play next to each other and may or may not be engaged in similar activities, to associative play where cooperation and joint involvement are observed. Toddlers are able to recreate routines and engage in elaborate pretend games (e.g., cooking dinner) that reflect their own experiences and understanding about how the world works.

Other considerations in toddlerhood include the arrival of a new sibling. For firstborn children, having to share what was once the undivided attention of parents may be quite challenging. Again, parental response to the situation is critical in terms of supporting the toddler through the transition. Some toddlers may begin daycare or preschool, necessitating assistance with that transition. Changes in the environment are likely to impact the toddler, and consequently, the toddler’s behavior and should be documented and considered during assessments.

Moreover, when appropriately diagnosed, infants may meet certain eligibility criteria that afford them and their families access to necessary therapeutic and supportive services. In current and emerging systems of health care, provision of services is linked to diagnoses. Standard diagnostic criteria are important not only for reimbursement for services, but also in designing and developing programs. Negative consequences of diagnostic classification systems include labeling and stigmatizing of individuals. Concerns about the “self-fulfilling prophecy” also emerge in thinking about diagnoses, particularly when they have been associated with poor prognosis. However, when used with proper training, a comprehensive, systematic assessment of interaction patterns, individual differences, and regulatory patterns should lead to identification of both strengths and vulnerabilities in major developmental areas, relationships, and the environment of the child (Harmon and Murrow, 1995).

Additional research and outcome studies on diagnostic assessment and classification in infancy are vital to advancing the field of infant mental health. Emerging research suggests that the Diagnostic Classification: 0–3 system (ZERO TO THREE, 1994) can help clinicians identify diagnostic issues and establish treatment guidelines for infants and young childhood through comprehensive assessment (Weston et al., 2003). Additional studies suggest that the DC: 0–3 may capture certain disorders better than the DSM-IV (Frankel and Harmon, 1996). Without an empirically validated classification system for infants and young children, professionals run the risk of labeling infants according to adult mental health criteria that do not capture the richness or complexity of these children’s situations. Using adult diagnostic labels is harmful in that it connotes a host of difficulties that are not manifested similarly in infancy.

### Evaluating Infants

#### General Guidelines

Evaluating infants is challenging. Clinicians attempt to capture the dynamic unfolding of biologic potential within a specific, ever evolving environmental context. Transitions between multiple determinants influence the developmental process and broaden the arena for assessment. Infants, young children, and their environments appear to be in constant flux. Seen on one day, a baby may appear a certain way, while the next time the baby may seem very different.

The many changes in early childhood necessitate that clinicians accurately diagnose infants according to uniform standards using valid and reliable assessment tools and classification systems. Such diagnostic precision enables professionals and families to speak the same language and ensure that individuals who use the same term mean the same thing.

A thorough evaluation should include:

- Developmental history including prenatal and perinatal events.
- Social history and current environment, including cultural factors.
- Physical examination.
- Psychosocial screening.
- Multiple observations of infant-caregiver interaction.

Incomplete evaluations:

- Focus on the presenting concerns without understanding the context in which they emerge.
- Depend on reports from one source without confirmation through observation or from another source.
- Offer the perspective of a single discipline rather than integrating information from various disciplines with information about the child.
- Do not assess whether the infant's performance was representative of typical functioning and capacities.
- Are not relationship-based.
Numerous issues complicate the early identification of infant mental health issues (Epplin, 1998). First, without specific diagnostic criteria, established developmental norms and standardized assessment tools, it is difficult to determine what is typical and atypical. Downward extension of adult diagnostic systems does not adequately capture mental health issues in the infant population. Moreover, assessment is difficult because of rapid changes in development, new levels of organization, and the changing meaning of specific behaviors or "developmental appropriateness." Second, lack of verbal communication by infants and young children limits our ability to ask questions about mental health issues in traditional, adult-centered interviews or self-report forms. Instead, mental health evaluators must rely upon behaviors and relational dynamics to determine mental health status. Recognition that infant mental health diagnoses exist primarily in the context of relationships is essential for accurate diagnosis. As with adults, environmental and organic factors confound mental health issues.

Assessment of infants and young children is a dynamic process that involves multiple evaluations over a period of time (three to five sessions at a minimum) and input from a variety of sources (caregivers, childcare providers, professionals from different disciplines). Sources of information typically include parent or caregiver reports of history, direct observation and interaction with the infant, observation of parent-infant interactions, parental reports of infant behaviors, and if available, another report of infant behaviors in a different setting (e.g. daycare). The diagnostic process in and of itself is considered to be an opportunity for relationship building, intervention, and treatment planning. Consequently, parents and caregivers are encouraged to ask questions and offer contributions throughout the evaluation. Additionally, feedback in the form of clarification of behaviors observed, parental questions, and goals for the evaluation may be provided after each assessment session.

The following sections provide information about methods of assessing infants and young children. While much of the information can be generalized, unique circumstances may dictate additional procedures or alternate methods. For example, legal involvement may necessitate individuals with specialized skills or advanced degrees conducting assessments (e.g. forensic evaluations, child custody evaluations). Working with young children in foster care may also be complicated. In this case, flexibility and adaptability in combination with familiarity with legal requirements aids in establishing who has guardianship of the child, communicating with various service agencies, and obtaining histories from several individuals.

Clinical interview

The clinical interview provides an opportunity to begin an ongoing conversation about the reason for referral, while at the same time serving as the starting point for building relationships with families and providing support and clarification about their unique circumstances. Because the focus is on the process as much as the content, information gathering and relationship building generally spans a number of sessions. The purpose of the interview is both to obtain a thorough understanding of historical and environmental factors that may contribute to the etiology or manifestation of the presenting problem and to form a working relationship with families. Empathic, reciprocal and supportive communication styles foster alliance and trust. Engaging in such a process ultimately enables the clinician and the family to "see the same child" (Seligman, 2000). The clinical interview also affords the clinician an opportunity to observe the infant-parent relationship.

In order to develop appropriate recommendations for intervention, it is helpful to obtain information about relevant areas of child functioning, child and family history, and the present context in which the child lives. Identifying information (name, age, race, ethnicity, address) is typically obtained during intakes to schedule initial appointments and should be verified early in the process. Throughout the clinical interview, the clinician observes the parent-infant relationship, the infant's individual functioning and developmental status, the parent's presentation, and the family system. The clinician also attends to the developing relationship between him or her and the family to inform regarding the family's capacity to utilize interventions and support (Seligman, 2000).

With respect to information about the infant, it is important to address in detail the presenting symptoms and behavior, the developmental history, and past and current functioning across a number of domains (affective, cognitive, motor, sensory, interactive). Obtaining specific information about the duration, frequency, and severity of symptoms or behaviors and about any relational or environmental factors that exacerbate or ameliorate the difficulties is important. The clinician should document when difficulties began and assess whether there were any identified precipitants (e.g. the birth of a sibling). In addition to detailing areas of difficulties, consider probing for information about areas of strength and adaptive functioning. Daily functioning may include information about sleeping, eating, relationships with others, elimination patterns, and routines.

When assessing infants, a mental status examination provides useful information about current level of functioning. Document individual infant characteristics such as appearance, reaction to situations, self-regulation, motor skills, speech and language, thought processes, affect and mood, play behaviors, and cognitive development (Benham, 2000). Consider exploring relatedness to caregivers, examiners/providers, and age mates in multiple settings in order to determine how the infant is functioning.

It is also helpful to understand the caregiver's perspective on the reason for referral, the referral source, and how the child's
behaviors are affecting the family. If the caregiver was not the referral source, discrepancies in perceptions about the extent to which the infant or young child is exhibiting difficulties may exist. Obtaining permission to speak with other providers or review records may provide additional information about history or perspectives on current difficulties. Involvement of social services or the legal system should alert the clinician to the importance of obtaining a release to speak with representatives from these agencies regarding child and family functioning in the context of systems issues that may be relevant.

Detailed history about pregnancy and delivery and developmental accomplishments helps contextualize current difficulties. In obtaining a history, consider including questions about maternal well-being, maternal substance use, exposure to stressors or traumatic events, and prenatal care during pregnancy. Attempt to understand the nature and course of the pregnancy and delivery, attending to important psychosocial elements (e.g., desire for the pregnancy, past pregnancy history, social support) as well as the medical course. Prugh’s “Five Questions” approach (Prugh, 1983) provides a relationship-based way to obtain some of the history. Questions progress from asking how the mother is feeling in general, to concerns about the baby, what the baby’s name is and where it came from, exploring “violations of expectation” concerning the pregnancy, delivery, and about the baby, to reflections on the pregnancy and thoughts about the future as well as the support systems and services for the mother and baby.

Careful documentation of newborn characteristics that might compound current presentations, including low birth weight, intracranial hemorrhages, birth asphyxia, central nervous system problems (e.g., seizures or infections), sensory impairments, and congenital anomalies, is also important. After discharge from the hospital, ascertain the nature of eating, sleep-wake, and elimination routines and document any difficulties in these areas. Subsequent hospitalizations and serious illnesses should also be documented. In order to evaluate developmental accomplishments, consider using one of the screening tools described in the next section. Important domains to consider in infancy and early childhood include sensory development, motor milestones, language development, social and emotional capabilities, and relationship factors.

Family history of medical, psychiatric, or psychosocial difficulties should also be documented. The clinician would benefit from understanding past history and current symptoms of parental mental illness, mental retardation, substance use, and impairment in functioning. Developmental and relationship histories of the caregivers and siblings may also be explored. Pay particular attention to history of traumatic events, chronic stressors, and other sociodemographic factors that might compound past or present difficulties. Experiences of violence at the interpersonal or community level should be documented and reported as mandated by law.

Because the environment has tremendous influence on infants, it is critical to understand what the environment is like. Who lives with the infant? What is the nature of their relationship with the infant? What resources do the family have and what resources do the family need? Is the infant exposed to or experiencing violence or neglect? Under what conditions does the infant live? Is the infant getting his basic needs (e.g., food, shelter, care) met? What other agencies are involved with the family and what is the nature of their involvement? Attempt to obtain a picture of each of the environments in which an infant spends a lot of time. These environments may include the home, daycare settings, and the neighborhood or community.

The initial assessment period offers a window into the infant-parent relationship. Careful observation and documentation provides essential information about the extent to which the relationship provides a nurturing context for infant development. The dynamic exchange between caregivers and infants suggests that observing one will provide information about the other and observing the relationship will provide information about both. For example, parents

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**KEY CLINICAL QUESTIONS**

- **Why are you here today?**
  - Determine the caregiver’s understanding of the reason for referral.
  - Identify caregiver concerns and questions.
  - Begin by listening and respecting the caregiver, which helps to establish rapport.

- **What is a typical day like? (Or, describe a typical day.)**
  - Assess patterns of sleep and waking, eating, social time and any difficulties or concerns surrounding tasks of everyday living.
  - Examine family routines and environmental consistency, continuity, and predictability.
  - Obtain a baseline of adaptive functioning (may want to have the caregiver describe good days and bad days if a discrepancy emerges).
  - Identify areas for intervention and support.

- **What things do you love about being (child’s name)’s parent?**
  - Assess the child’s strengths and unique characteristics.
  - Help focus the caregiver on positive aspects of the relationship.
  - Identify reinforcing elements of the relationship that can be bolstered.

- **How does your experience compare with what you were expecting when you thought about parenting (child’s name)?**
  - Assess expectations and violations of those expectations or disappointments.
  - Identify hopes and wishes that can inform treatment planning and recommendations.
  - Provide information that may correct unrealistic demands.
who are emotionally available to their infants are able to help infants regulate their own affective experiences. Similarly, nurturing and responsive parents have infants who are generally secure and have high self-esteem. Other parent and infant characteristics that may merit exploration include: protection/vigilance and safety, comforting/comfort seeking, teaching/learning and mastery, play/imaginative, discipline and limit setting/self-control and cooperation, and structure and routine/self-regulation and predictability (Zeanah et al., 2000a).

All of the information provided during a clinical interview and in any subsequent observations should be contextualized within the infant and family’s culture. Culture has been conceptualized as “a distinct system of meaning or a cognitive schema that is shared by a group of people or an identifiable segment of the population” (Coll and Magnuson, 2000, p. 97). Typically, daily interactions within the family embody beliefs and values that transmit culture across generations. Understanding cultural and personal child-rearing approaches and beliefs provides insight into existing dynamics. For example, behaviors that might be “problematic” in one culture may be acceptable and even desirable in another. Diversity extends far beyond race, ethnicity, and culture to include factors such as gender, socioeconomic status, age, and sexual orientation. Diversity issues should be openly acknowledged and addressed in interactions with families and in interpretations of behaviors or assessment results. The goal of assessment and intervention is to help reach a mutual understanding about the young child within his or her unique context.

Assessment tools

A variety of assessment instruments is available for use with infants and young children and their families. Ranging from screening instruments that provide snapshots of developmental achievements to parent self-report measures of problem behaviors to comprehensive dimensional assessment procedures, these measures are designed to identify early social, emotional, and developmental difficulties that may be targeted for early intervention or prevention efforts.

Screening instruments

Screening instruments are designed to provide rough approximations of infant functioning in a timely and cost-effective way. Information is often used to identify infants in need of further evaluation and intervention. Large numbers of infants may be screened (e.g., Apgar scores), or screening can be more targeted on the basis of individual or group risk factors or concerns. Collected at a single time point and with broad strokes across domains, screening instruments may over- or underestimate infant functioning or fail to capture individual differences in development. As such, infants may either be incorrectly denied access to necessary interventions or be targeted as “at risk” by virtue of their performance on global measures.

Parents are often used as sources of information for screening instruments either through self-report measures or interviews. Forms may also be available for completion by day care providers or teachers. A few screening tools utilize observation of the young child. Table 15.1 provides an overview of several instruments used to assess infants and young children during the first 3 years of life. The table presents the names of the instruments, appropriate age ranges, and approximate administration times.

In selecting the appropriate screening instrument, it is important to consider how the measure was developed, who the target population is, and whether it demonstrates adequate reliability and validity. Reliability refers to whether the same score would be obtained by the same child if tested at other points in time. Validity addresses whether the instrument measures what it is supposed to measure. Predictive validity refers to the measure’s relationships to characteristics that appear in the future. Assessment in infancy and early childhood is complicated by the fact that scores on many tools are not highly related to long-term developmental outcomes. Concurrent validity describes the relationship between scores on the screening instrument and scores on other assessments conducted at the same time (e.g., Bayley Scales of Infant Development).

Developmental assessments

Psychologists or other specially trained professionals (e.g., early childhood educators, developmental specialists) may conduct comprehensive developmental assessments of infants and young children using standardized, empirically validated tools. These tools typically require substantial training in administration, scoring, and interpretation prior to their use with infants. For a detailed discussion of developmental assessments and screening instruments please refer to Infant Assessment by M. Virginia Wyly.

In the newborn period, several assessment systems provide information about a range of newborn behaviors and capabilities. These assessment systems examine newborn sensory, physiologic, motor, and state functioning and elicit various reflexes. Evaluators consider the interplay among these domains of functioning in the context of the infant’s medical risk factors (Brazelton et al., 1993) and sociodemographic circumstances.

Brazelton Neonatal Behavioral Assessment Scale

The NBAS assesses a newborn’s ability to respond to social and nonsocial stimuli through a series of graded manipulations that promote different states and levels of arousal. Throughout the evaluation the infant is an active participant who makes purposeful efforts at regulating incoming
TABLE 15.1

<table>
<thead>
<tr>
<th>Assessment tool</th>
<th>Age range</th>
<th>Administration time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages and Stages Questionnaires: Social–Emotional (ASQ–SE; Squires, Bricker &amp; Twombly, 2002)</td>
<td>6–60 mths</td>
<td>10–15 mins</td>
</tr>
<tr>
<td>Assessment of Preterm Infant Behavior (APIB; Als, 1984)</td>
<td>Preterm Infants</td>
<td>45–90 mins</td>
</tr>
<tr>
<td>Bayley Scales of Infant Development–II (BSID–II; Bayley, 1993)</td>
<td>15 days–42 mths</td>
<td>30–90 mins</td>
</tr>
<tr>
<td>Child Behavior Checklist for Ages 1½ to 5 (CBCL; Achenbach &amp; Rescorla, 2000)</td>
<td>18 mths to 5 yrs</td>
<td>15–20 mins</td>
</tr>
<tr>
<td>Denver Developmental Screening Test II (Frankenberg et al., 1990)</td>
<td>0–6 yrs</td>
<td>30 mins</td>
</tr>
<tr>
<td>Devereux Early Childhood Assessment (DECA; LeBuffe &amp; Naglieri, 1998)</td>
<td>2–5 yrs</td>
<td>5–10 mins</td>
</tr>
<tr>
<td>Mullen Scales of Early Learning (MSEL; Mullen, 1991)</td>
<td>0–68 mths</td>
<td>15–60 mins</td>
</tr>
<tr>
<td>Neonatal Behavioral Assessment Scale (NBAS; Brazelton, 1973)</td>
<td>0–6 wks</td>
<td>30–60 mins</td>
</tr>
<tr>
<td>Parents’ Evaluation of Developmental Status (PEDS; Glascoe 1997)</td>
<td>0–9 yrs</td>
<td>&gt; 5 mins</td>
</tr>
<tr>
<td>Parenting Stress Index (PSI; Abidin, 1995)</td>
<td>&lt; 12 yrs</td>
<td>20–25 mins</td>
</tr>
</tbody>
</table>

Environmental stimuli. The infant’s capacity to habituate to stimuli, self-organize, and maintain robust states are also examined. Considerable skill is required in order to elicit the infant’s best performance and score the instrument reliably. More recent adaptations of the NBAS include using the assessment as a demonstration to provide parents with information about their infants’ responses to environmental stimuli (Brazelton, 1990; Fowles, 1999).

Assessment of Preterm Infant Behavior (APIB)
Using the NBAS as a template, Als developed the APIB for use with preterm and fragile infants (Als, 1984). The five subsystems in the synactive theory (physiologic, motor, state, attentional–interactional, and self-regulation) are assessed before, during, and after the environmental manipulations. The examiner evaluates the infant’s ability to adapt to manipulations and tolerate stimulation in addition to detailing disorganized and organized behaviors throughout the examination.

Beyond the newborn period, numerous developmental assessments exist. These instruments assess cognitive development, information processing, parent–infant interaction, emotion and temperament, and play, among other things. Reviewing each of these domains and the accompanying instruments and methods is beyond the scope of this chapter. Instead, we will discuss a few key instruments that are commonly used in infancy and early childhood.

Bayley Scales of Infant Development–II
The BSID–II (Bayley, 1993) includes a mental scale, a motor scale, and an infant behavior record for infants aged 15 days–42 months. Items are arranged in developmental order and many items can be scored through incidental observation. The mental scale includes 147 items measuring language, object permanence, problem-solving, imitation, perceptual–motor integration, and visual and auditory attention. The motor scale has 111 items tapping gross and fine motor skills. The Infant Behavior Record describes infant behavioral traits observed over the course of the examination. The examiner completes it after the exam is finished. Domains evaluated include sensitivity to stimuli, interest, energy, affective arousal, and social responsiveness. The caregiver also responds regarding whether performance on the exam reflected the infant’s typical affect, activity level, and ability. While the scales provide important information about current developmental status, the scores are limited in their ability to predict later intellectual performance.

Mullen Scales of Early Learning
Based on a neurodevelopmental model, the MSEL (Mullen, 1991) ranges from birth to 68 months. The instrument uses five scales to assess: gross motor base, visual receptive organization, visual expressive organization, language receptive organization, and language expressive organization. Scores reflect infant strengths and areas of concern.

Diagnostic classification
Before 1994, the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1994) was the only available system for classifying disorders in infants and young children. For infants and young children, few diagnostic classifications in the DSM–IV and other adult classification systems are appropriate. These systems, developed, validated, and used with older children and adults, do not consider many of the developmental issues and char-
KEY CLINICAL QUESTIONS

- What concerns might indicate a need for further developmental evaluation?
  For newborns, neurobehavioral difficulties (e.g., tremors, seizures), state issues, feeding problems, high levels of chronic irritability, sensory deficits, history of major medical conditions or complications. Significant delays in milestones (e.g., motor, communication, interactional).
  Behavioral issues including outbursts, rages, withdrawal, anhedonia, impulsivity, lack of inhibition, self-injury.
  Regulatory difficulties including problems with sleeping, eating, elimination, daily routines, sensory processing, and interacting.
  Cognitive abilities and adaptive functioning.
  Developmental regressions where previously acquired skills are lost or new skills are not being acquired.
- What is the reason for referral? In other words, what is the clinician hoping the evaluation will reveal?
  Clarify the nature of concerns and how the information will be used.
  Provide an opportunity to collaborate with the caregiver in understanding concerns and current circumstances.
  Provide diagnostic clarification when the presenting symptoms can be the manifestation of different underlying difficulties.
- What information can comprehensive evaluations provide?
  Diagnostic impressions and integration of presenting symptoms in the context of a thorough history and of the psychosocial environment.
  Treatment planning including specific behavioral and systemic targets for intervention, modalities of intervention, frequency and duration and expected results.
  Clarification regarding the current level of functioning and prognosis for the future.

Boxes 15.1

DSM-IV disorders diagnosable in infancy and early childhood

- Mental retardation
- Motor skills disorder
- Developmental coordination disorder
- Pervasive developmental disorders
- Autistic disorder
- Rett syndrome
- Childhood disintegrative disorder
- Asperger syndrome
- Pervasive developmental disorder NOS
- Attention-deficit and disruptive behavior disorders
- Attention-deficit/hyperactivity disorder
- Feeding and eating disorders of infancy or early childhood
- Pica
- Rumination disorder
- Feeding disorder of infancy or early childhood
- Other disorders of infancy, childhood, or adolescence
- Separation anxiety disorder, early onset
- Reactive attachment disorder of infancy or early childhood
- Stereotypic movement disorder
- Disorder of infancy NOS

acteristics of disorders relevant for the under-3 population. As detailed in Box 15.1, the DSM-IV criteria for certain disorders may be used to classify disorders seen in infancy and early childhood. However, these diagnostic categories do not adequately capture the complexity of infant difficulties. In contrast to the DSM-IV, the Diagnostic Classification: 0–3 (DC: 0–3) is unique in that it was developed to assess vulnerabilities, difficulties, and adaptations of infants and young children across major developmental areas. The system is described in detail in the next section.

History of Diagnostic Classification: 0–3

The Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood (DC: 0–3) is the product of an 8-year effort by a multidisciplinary Diagnostic Classification Task Force comprised of clinicians and researchers. DC: 0–3 is designed to focus attention on all key aspects of young children’s experiences including relationships with important adults; individual differences in motor, sensory, language, cognitive, and emotional development; the child’s capacity to organize experience; family patterns; and psychosocial factors in the environment that affect the young child. Using this framework, an individual or team is able to collect and integrate information regarding the child’s vulnerabilities, strengths, adaptive capacity, and level of functioning across major developmental areas.

In the course of evaluating infants and young children and formulating diagnostic possibilities, the DC: 0–3 assesses the contribution of constitutional/maturational factors, interactional capacities, emotional functioning, relationship quality and characteristics, and family and environmental factors. Each of these domains alone or in combination with others may impact diagnostic and treatment decisions. Issues that arise during the course of an evaluation should be integrated into a comprehensive treatment plan or preventative intervention that addresses them.

Axis I, primary diagnosis

The primary diagnosis generally reflects the core elements and features of the disorder as expressed through the maladaptive behavior of the child. As can be seen in Table 15.2, diagnoses range from traumatic stress disorder to disorders of affect, to adjustment disorders and regulatory disorders.
The multiaxial system

**Axis I:** Primary Diagnosis
- 100. Traumatic Stress Disorder
- 200. Disorders of Affect
- 300. Adjustment Disorder
- 400. Regulatory Disorders
  - Type I: Hypersensitive Type
  - Type II: Under-Reactive Type
  - Type III: Motorically Disorganized, Impulsive
  - Type IV: Other
- 500. Sleep Behavior Disorder
- 600. Eating Behavior Disorder
- 700. Pervasive Developmental Disorders or Disorders of Relating and Communicating

**Axis II:** Relationship Classification (based on the PIR-GAS)
- 901. Overinvolved relationship
- 902. Underinvolved relationship
- 903. Anxious/tense relationship
- 904. Angry/hostile relationship
- 905. Mixed relationship – specify
- 906. Abusive relationship
  - Verbally abusive relationship
  - Physically abusive relationship
  - Sexually abusive relationship

**Axis III:** Medical and Developmental Disorders
**Axis IV:** Psychosocial Stressors
**Axis V:** Functional Emotional Developmental Level

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**Axis II, relationship classification**
Three aspects of a relationship are evaluated and categorized on axis II. During the evaluation, observers attend to the behavioral quality of the interaction, its affective tone, and the psychological involvement of each of the participants. The Parent-Infant Relationship Global Assessment Scale (PIR-GAS) is used to assess the quality of infant-parent relationship. Relationship problems may or may not occur with symptomatic behaviors. Ability to rate relationships using the scale is not predicated upon knowing the reason for the relationship problem. Scores on the PIR-GAS range from 90 (well adapted) to 10 (grossly impaired). PIR-GAS subscales cluster scores into three levels: no disorder (80–99), tendency to disorder (40–79), and disorder (10–39). See the diagnostic decision tree presented in Figure 15.1 for more detailed information about axis II.

**Axis III, medical and developmental disorders and conditions**
Axis III details any co-existing physical (including medical and neurologic), mental health, and/or developmental disorders. For example, a congenital anomaly (e.g., cleft lip) would be recorded on this axis. A chronic medical condition such as asthma would also be recorded on axis III.

**Axis IV, psychosocial stressors**
Axis IV details the forms and severity of psychosocial stress that are influencing factors in various disorders. Considerations include severity of stressor (intensity and duration at that intensity level), suddenness of initial stress, frequency, and unpredictability of its recurrence. The same stressor may impact a child very differently depending on the developmental level, chronological age, endowment, and ego strength of the child. Axis IV also documents the availability and capacity of caring adults to serve as protective buffers and help children understand and cope with the stressor. The Stress Index identifies sources of stress (e.g., abduction, adoption, loss of parent, natural disaster, parent illness), their duration (acute to enduring), and the overall impact of each event (none, mild, moderate, severe).

**Axis V, functional emotional and developmental level**
Axis V documents essential processes or capacities including attentional factors, interactive displays, and communicative functions appropriate for different developmental levels. For example, infants at all ages are assessed with respect to their ability to engage in mutual attention with a caregiver while representational skills and affective communication are not assessed until infants are 18 months or older. Assessment is based on observations of infants interacting with parent(s) or another significant caretaker. The Functional Developmental Level Rating Scale rates quality of child’s play with each significant caretaker and summarizes a child’s overall functional level. Infants and young children are classified along a continuum ranging from “has fully reached expected level” to “not mastered any prior level” with points in between.

**Guidelines for using the DC: 0-3 system**
One of the more valuable features of DC: 0-3 is the guidelines, or “diagnostic decision tree,” an example of which is included in Figure 15.1. As can be seen in Figure 15.1, the clinician is asked to consider various aspects of the relationship and the intensity, frequency, and duration of difficulties in determining the appropriate diagnostic classification. It is important to note that while a relationship may not meet diagnostic criteria, it may still be characterized by certain features or tendencies that should be detailed on axis II. The decision tree approach to diagnosis is based on the evaluator paying attention to disorders often overlooked and “ruling out” environmental, constitutional, or interactional problems which may need immediate attention or a specific treatment approach (such as infant-parent psychotherapy).

The guidelines presented below assist the clinician in systematically evaluating the infant and making appropriate
Fig. 15.1 Diagnostic Classification 0-3: decision tree – axis II (relationship disorder classification). Assess the relationship for each parent-child dyad, whenever possible. If there are difficulties in the relationship, then assess for the intensity, frequency and duration of the disturbance. A “tendency” is not given a diagnosis, but a note is made on axis II that the relationship has features of or a tendency to be overinvolved, underinvolved, anxious/tense, angry/hostile, mixed or abusive. Adapted from ZERO TO THREE /National Center for Clinical Infant Programs. Diagnostic Classification: 0-3; Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood. 1994. [Northcutt & Wright (2002) ©Funding for Dr Northcutt provided by First Five Sacramento Commission].

1 If there is a clear severe or significant stressor or trauma to account for the disordered behavior or emotions, then traumatic stress disorder should be considered initially. This would be the appropriate progression if, for example, the young child had recently been in a serious automobile accident.

2 If there is a clear constitutionally or maturational-based sensory, motor, processing, organizational, or integration difficulty related to the observed maladaptive behavioral and/or emotional patterns, then a regulatory disorder should be considered initially. Children born prematurely frequently display regulatory difficulties resulting from a combination of being born early, having an immature nervous system, and beginning life in the critical care environment of an NICU rather than being at home with their families.

3 If the presenting problems are mild, < 4 months duration, and related to a clear environmental event, then an adjustment disorder should be considered initially. A family that recently relocated or a toddler who started daycare within a few months of the evaluation may fall into this category.

4 If there is neither a clear constitution- or maturational-based vulnerability, nor a severe or significant stress/trauma and the problem is not mild, of short duration, and not related to a clear event, then the categories of mood and affect disorders should be considered initially.

5 Disorders of multiple delays, including communication and social relatedness, are distinct and usually involve chronic patterns of maladaptation (e.g. pervasive developmental disorders) and an ongoing pattern of deprivation (e.g. reactive attachment disorder). Even when underlying constitutional or maturational vulnerabilities or clear stressors are present, these disorders usually take precedence over other categories and are exceptions to the above general rules. This guideline would apply in cases where parents present a history including elements such as not achieving typical milestones, unusual or extreme behaviors (e.g. self-injurious behaviors), and serious communication delays. Alternatively, a history may include pathogenic care in addition to infant behavioral or constitutional factors.

6 If the problem is specific to a certain situation or a relationship to a particular person, an adjustment disorder and a relationship disorder should be considered. Difficulties with one parent or in a particular context (e.g. daycare) that result in behavioral changes and symptoms that extend beyond the relationship would fall into this category.

7 If the problem only involves a relationship without other symptoms, use axis II instead of axis I. That is, if difficul-
ties emerge exclusively in the context of a specific relationship, for example, with one parent, criteria would not be met for an axis I diagnosis.

8 Reactive attachment disorder is appropriate when there is inadequate basic physical, psychologic and emotional care. Concerns about the relationship or attachment are to be considered in the relationship axis or other diagnoses related to the present symptoms.

9 Assess the underlying basis for common symptoms such as feeding and sleep disorders, which may be separate problems, part of various diagnostic categories, an ongoing relationship pattern, or regulatory and pervasive developmental disorders. Thus, a child with a sleep disorder as a result of posttraumatic stress disorder or a mood disorder or a child who is very anxious in daycare and refuses food and vomits only in that setting, do not meet criteria for feeding and sleep disorders. This differs from a child who has a primary eating problem with food refusal in all situations or a child with sleep onset difficulties without other symptoms. Careful history taking, observation, and assessment of various contextual factors will enable the clinician to obtain diagnostic clarification.

Selected diagnostic categories and case studies

Regulatory disorders

Regulatory disorders emerge in infancy and early childhood. They are characterized by an infant’s difficulties in modulating both internal organization and incoming environmental stimuli. Symptoms of regulatory disorders often get communicated during history taking that reveals difficulties doing the routine things infants and young children "should" be doing (e.g. eating, sleeping, playing with others, learning in their environments).

Internally, infants with regulatory disorders may exhibit less physiologic stability (e.g. maintaining a steady heart rate, regular respirations, and good oxygenation) and less organized state behaviors, including a more limited repertoire of available states (e.g. full range of states from deep sleep to quiet alertness to a robust cry), more rapid transitions between states (e.g. abrupt shifts from asleep to extremely fussy) instead of smooth transitions, and the shorter durations of a state. The capacity of a young child to attend is dependent on state organization and, therefore, difficulties in attending and in sleeping are also characteristic of regulatory disorders. Eating and elimination patterns require a combination of internal and external modulation and may be problematic. Gross and fine motor difficulties may also be evident. A poorly regulated infant is likely to demonstrate affective disorganization as a limited range of affect, the inability to modulate affective expression, or constricted or expansive affective tone. Chronic disregulation may ultimately result in language and cognitive difficulties.

In order to be diagnosed with a regulatory disorder, an infant must display at least one sensory, sensory-motor, or processing difficulty in addition to evidencing behavioral symptoms: over- or under-reactivity to sensory stimulation includes noises, visual input, tactile stimulation and pain, odors, and temperature. Sensory-motor difficulties may be seen in oral-motor difficulties or incoordination resulting from poor muscle tone or hyper/hyporeactivity, balance problems, hyper/hypotonicity of muscles, and deficits in motor planning skills, modulation of motor activities, or fine motor skills. Deficits in processing capacities may be presented as limitations in auditory-verbal processing, articulation, visual-spatial processing, or attentional difficulties.

Young children diagnosed with regulatory disorders are categorized into one of four types. Type I, Hypersensitive Type, describes children who are fearful and cautious or negative and defiant. These children may become easily overwhelmed by their environment and retreat with very little input or they may over-react to environmental input with behavioral outbursts and refusals. Type II, Under-Reactive Type, characterizes children who are withdrawn or difficult to engage or self-absorbed. These infants may require a great deal of input to notice what is happening in the world around them and may be less responsive to typical social overtures, making it more challenging to interact with them. Young children meeting criteria for Type III, Motorically Disorganized/Impulsive, Regulatory Disorders, may appear erratic, inattentive, uncoordinated, and chaotic. They often demonstrate poor planning and processing capacities and have difficulties completing routine, developmentally appropriate tasks. These children may later meet criteria for attention-deficit/hyperactivity disorder. If one of the first three types does not characterize the infant, Type IV, Other, is used.

Mood disorders

Mood disorders are related to a young child’s affective experience and behavioral expressiveness. Symptoms arise as part of the child’s functioning rather than as the result of a particular situation or in the context of a specific relationship. In contrast to children with regulatory or developmental disorders, children with mood disorders do not exhibit major constitutional or maturational difficulties or severe developmental delays. While mood symptoms are frequently expressed within a particular relationship or seen in caregiver-child interactive patterns, the interactive difficulties are related to the child’s general affective and behavioral difficulties and are not unique to the relationship or situation. Thus, a critical aspect of diagnosing mood disorder in infancy and early childhood involves determining whether symptoms are a
Alina's story

Alina, a 5-month-old hospitalized infant, and her mother were referred by a nurse working with them. Nurses, physicians, and therapists reported having difficulty communicating with Alina's family. These professionals reported that they were unable to effectively engage in treatment with Alina because her mother would not allow them access to the child, would undo what they did, and did not appear to be listening to and incorporating their suggestions. Professional after professional indicated that Alina's mother did not seem to be able to read the baby's cues and that she frequently overwhelmed the baby. Alina was born at term and diagnosed with a number of congenital anomalies, including a heart condition, for which she was awaiting transplant. Additionally, she was microcephalic and was extremely sensitive to sound and touch. Medical professionals were concerned about her ability to see and more generally, about Alina's prognosis. The neonatologists, specialists, and nurses had all met with the family a few times to discuss potential paths and choice points. After one such conference, the mother stated that she just wanted to let nature take its course and did not want to provide extreme levels of intervention. The very next day she told the nurse caring for the baby that the baby was on the heart transplant list and was likely to receive a new heart very soon.

During the assessment period, a number of issues emerged. First, a neurobehavioral examination confirmed Alina's frailty and sensitivity to environmental input. Alina was easily overwhelmed by even distal environmental input presented during sleep and did not demonstrate an ability to habituate after repeated presentation. She showed her distress through rapid breathing, color changes, decreased oxygen saturation, and prolonged motor instability. She had fleeting alert states during which she was available for social interaction and had difficulty maintaining a deep sleep because of her sensitivity to the environment and the demands of the hospital environment. An assessment by an expert revealed a profound visual impairment: Alina could sense light and dark but had little acuity. A second and critical issue involved Alina’s mother’s own mental health issues. Her mother presented with unusual interpersonal communication skills, including avoidant behaviors and extreme mistrust of new people, disorganized behaviors (e.g., losing things and seeming quite scattered), memory and attentional difficulties, and alternating sad or very angry affect. Despite repeated conversations with professionals who were telling her the same things about her baby, Alina’s mother continued to ask the same questions and interact with Alina in ways that directly contradicted what she had been told. Diagnostically, a Regulatory Disorder, Hypersensitive Type, was considered because of Alina’s extreme sensitivity and over-reactivity to environmental stimulation and her visual impairment. Because of the intrusive nature of her mother’s interactions, difficulties in the infant-parent relationship suggested that the relationship could be characterized as disturbed (PIR-GAS = 40, tendency to be overinvolved).

Treatment involved several different elements. Initially, Alina’s mother had difficulty talking with or even making eye contact with the specialist. During one early meeting when the specialist offered the mother papers that she had requested, the mother grabbed the papers, said “thanks but I have so many papers I’m not sure I can read these,” and returned immediately to reading her magazine. After spending several days developing a working alliance with the mother and answering her many questions, the specialist gently began offering information about Alina in the context of her mother’s interactions with her. Information about Alina’s signs of stress and about her attempts to regulate environmental input were discussed and demonstrated. For example, during a bath the specialist pointed out how Alina’s breathing became more regular when her mother turned off the radio, dimmed the lights, moved slowly, and talked to her in a very soft voice. The specialist also arranged for an examination by an expert in visual assessment and offered to be present during both the evaluation and feedback. Intervention also involved informing hospital professionals about Alina’s sensitivities and working with them to develop appropriate plans of care that would not overwhelm Alina. Unfortunately, the circumstances did not permit the specialist to provide the amount of support necessary to directly address Alina’s mother’s mental health issues. Instead, these were addressed as they pertained to the infant-parent relationship.

Over the course of several weeks, Alina’s condition stabilized to the point of being ready for discharge. Because others in her environment changed the nature of their interactions with her and provided more external regulation to support her emerging abilities to self-regulate, Alina’s reactivity decreased. However, she still required extensive support and structure in order to help her maintain her balance and not become overwhelmed. Importantly, Alina’s interactions with her mother also improved to the point where her mother could anticipate Alina’s response to a situation and take measures to prevent her from becoming overwhelmed. This case illustrates the various types of interventions provided by infant mental health specialists in a consultation and liaison model in hospital settings.

general feature of the child’s functioning or whether they are relationship or situation-specific. As mentioned previously, if the symptoms appear primarily in the context of a relationship, a relationship disorder (axis II) would be considered.

Mixed disorder of emotional expressiveness

Infants and young children beginning to internalize difficulties regulating affect may suggest a diagnosis of mixed
Sam's story
Sam was a 3-year-old referred by his pediatrician because of head banging. Sam and his mother had both remained hospitalized for 1 week following his birth due to a maternal infection that he also contracted. His early development was characterized by difficulties in motor and language development. He also had an esotropia and was clumsy. At the age of 15 months, Sam’s mother had a second son. At that time, Sam began to head bang when he did not get his way. Over time, he developed a hematoma on the front of his head from chronic head banging. His language continued to be a problem. Sam’s mother seemed overwhelmed and unsure what to do. Her younger son was developing normally and seemed to be ahead of her older son, whom she could not manage nor communicate with.

During the assessment phase, several things became evident. First, Sam’s mother was very depressed and her marriage was stressed by her son’s behavioral difficulties. Second, the “identified patient” clearly had difficulty regulating affects and when frustrated, banged his head, often threatening his parents and the evaluator that he would do so. Diagnostically, a Regulatory Disorder was considered given his problems (from birth) with motor and language development and his visual problems. We were also concerned about the effects of his chronically banging his head and wondered whether he might have symptoms consistent with head trauma. However, from a diagnostic perspective, a mixed disorder of emotional expressiveness was also considered, because Sam had difficulty identifying and expressing emotions and often seemed confused about feeling states. It became clear that there were also problems in the parent-child relationship, although the quality of the relationship was not considered disordered (PIR-GAS=50, features of a disorder).

Treatment of this family involved several components including: 1) focusing quickly on the mother’s depression, including psychotherapy and medication; 2) mother-child therapy sessions to help mother develop better strategies for dealing with her son’s anger and head banging; 3) physical, occupational, and speech-language therapy for Sam’s motor and language problems; and 4) some conjoint sessions with the parents to focus on marital issues. Most of the interventions were of short duration and the family successfully regained their equilibrium. The therapy with Sam focused on helping him identify his emotions, particularly angry and sad feelings, and giving him alternative ways to express his feelings. Foot stamping, rather than head banging, was encouraged when he could not tell adults that he was angry or upset and negotiate a more adaptive solution.

Over time, Sam was able to express his frustrations, needs and wants, and the foot stamping was no longer needed. So, although Sam had clear constitutional vulnerabilities, a several year history of his inability to express his emotions and his mother’s inability, primarily because of her own depression, to help him regulate those emotions, lead to the development of a mixed disorder of emotional expressiveness. What was particularly striking about this dyad was that the PIR-GAS score at the end of treatment (with the mother) had increased to 78, clearly of much less clinical concern.

Infants at risk

Infants born preterm
When a baby is born prematurely, serious, ongoing medical and physical complications may require hospitalization in the NICU for days and sometimes months. Regardless of the reason for the early birth or the hospital course, disruption of the typical relationship between parents and their newborn may adversely affect the emerging parent-child relationship. As a consequence, the baby’s mental health and overall development may be impacted.

Alfonso's story
Alfonso’s family came to take care of him every afternoon during the 6 months he spent in the NICU. His mother had to wait for her husband to come home from work before coming to the hospital because the family had only one car. Alfonso’s siblings, both under 4 years of age, came with their parents and wanted to play with their very sick brother. It was hard for them to understand why they could not touch or hold him and why they had to come to the hospital instead of taking Alfonso home. His parents often had to focus on the siblings or divide their attention, which led to turn-taking with Alfonso. While staff wanted the family to be with Alfonso, some people got frustrated at the level of activity at his bedside when the children were there. However, the family did not have alternative childcare resources, nor did they want to be apart from their children. Additionally, Alfonso’s father only spoke Spanish, making communication with hospital staff challenging. He was often forced to wait for his wife to translate the exchange for him.
For preterm infants and their parents, many relationship disruptions can emerge during pregnancy, delivery, and hospitalization. These disruptions can affect the emerging infant-parent relationship. Prenatal and postnatal disruptions include events such as diagnosis of a congenital anomaly during pregnancy, medical complications, preterm delivery, and long-term hospitalization. Parental factors such as maternal depression, grief, traumatic experiences, family violence, and language barriers may also disrupt the parent-infant relationship. Infant factors that might disrupt relationships include exhibiting disorganized behaviors and behaviors that are hard to read, having difficulty calming and quieting, and being sleepy or unable to socially engage. Finally, with respect to the hospital and NICU environments, numerous elements including hospital policies, relationships with professional caregivers, and access to resources (e.g., money, transportation, privacy, comfortable chairs) may impact the infant-parent relationship.

A preterm birth violates parental expectations about pregnancy, childbirth, parenting, and development (Macey et al., 1987). Because pregnancy ends early and sometimes abruptly, parents of preterm infants experience disruptions in the normative biologic, physical, and psychologic changes associated with pregnancy. They also miss out on traditional rituals, such as baby showers, naming ceremonies, and the baby’s first bath that mark the transition to parenthood.

Despite efforts to provide family-centered care and developmentally supportive practices that promote parental involvement with their preterm babies (Davis et al., 2003), parents of preemies often experience guilt, anxiety, and depression (Gennaro, 1988; Maloni et al., 2002); elevated symptoms of posttraumatic stress disorder (DeMier et al., 2000); and anger, helplessness, hopelessness, terror, and ambivalence about the baby’s survival (Easterbrooks, 1988; Tracey, 2000). While research suggests that mothers’ anxiety and depression decrease during the months after their babies are discharged from the NICU (Brorenten et al., 1988), mothers of high-risk, very low birth weight children report high levels of emotional distress even 2 years after the child’s birth (Singer et al., 1999). Supportive relationships within and between the family bolster parents’ well-being during the crisis of a preterm birth, facilitate infant-parent interactions, and promote infant development (Miceli et al., 2000).

Many contextual factors affect the relationship between parents and their preterm baby. These include: the financial burden on parents; the ease or difficulty of travel to the NICU; the needs of siblings; the quality of the marital relationship; and family history. Typically, a number of these contextual factors interact, creating an even more complex picture of family functioning.

The preterm baby’s condition powerfully affects what he or she can bring to the parent-infant relationship. Neurologic immaturity and medical complications make preterm babies capable of less physiologic, motor, and behavioral organization and modulation (Als, 1982) than infants born full-term. Thus, a preterm infant may be fussy and irritable, but cannot be soothed by a feeding because it may hurt when he or she eats. The baby whose underdeveloped lungs require high-frequency ventilation may not be able to be held. The infant who does not have the energy to wake up and look at his or her parents even for brief periods misses the most basic early relationship-building opportunities.

The infant factors discussed above may affect relationships well after the baby’s discharge from the NICU. Preterm infants may experience ongoing health, academic, and emotional difficulties that create chronic stress for their families (Blackburn, 1995). Even when difficulties are not “diagnosable,” they may present challenges. Sensory overload, difficulties with transitions, and laborious efforts to complete schoolwork emerge repeatedly in parents’ descriptions of life with prematurely born children.

Disruptions in the relationship between preterm infants and their parents occur for many reasons and may be associated with infant outcomes across a broad range of developmental domains. From 20–50% of infants born preterm meet criteria for a physical, emotional, or cognitive disability (Lorenz et al., 1998). Family stress places children born prematurely at high risk for maltreatment. The risk of maltreatment among children with disabilities is more than three times greater than among typically developing children (Sullivan and Knutson, 2000).

Nurturing and cultivating the infant-parent relationship during the perinatal period is critical. It is the infant-parent relationship that can protect the preterm baby from risk and foster healthy long-term development. Clinicians can promote the mental health of preterm babies and their families by using psychoeducational interventions to teach parents and caregivers about preterm infant development, including similarities to and differences from typical development. Clinicians working with preterm infants and their families should take into consideration the above-mentioned relationship disruptions and assess for their potential impact on the current relationship and on presenting problems. Understanding the family’s experience in the NICU is also a critical element to working effectively with them. The case below illustrates some of the complex dynamics that families face. These factors operate above and beyond the fact that their baby is medically fragile and hospitalized.

**Prenatal exposure to substances**

According to the National Institute on Drug Abuse (NIDA), approximately 5.5% of pregnant women use an illicit drug during pregnancy (National Institute on Drug Abuse, 1996). Drug use estimates vary by sociodemographic characteristics including race and family income. Specifically, drug use during pregnancy is higher for African American women.
and for women living below the poverty level and in inner-city neighborhoods. Methodologically, it is difficult to study exposure to a single substance, since drug use is frequently poly-substance use, co-occurring with alcohol, tobacco, and other substances. Moreover, drug use also has high comorbidity with mental illness and involvement with the legal system (Lester et al., 2000), both of which have tremendous implications for infant development. With any prenatal substance exposure, it is also important to consider the postnatal effects resulting from growing up in an environment where substances are being used.

In the mid-1980s, awareness of cocaine use during pregnancy spread to the national level. Sensationalized by the media, “crack babies” were expected to have severe developmental consequences resulting from prenatal exposure. NIDA figures suggest that about 45,000 infants exposed to cocaine are born each year (National Institute on Drug Abuse, 1996). More recent literature, based on longitudinal developmental studies of children exposed to cocaine in utero, suggests that the effects of prenatal exposure to cocaine are subtler than initially predicted (Lester et al., 2002) but certainly not benign. Findings suggest that prenatal exposure to cocaine affects neurobehavioral development, attention, affect and temperament, and arousal regulation (Lester et al., 2000). Subtle differences in IQ scores and on measures of receptive and expressive language translate to millions of dollars annually in special education services necessary when children with specific deficits require services (Lester et al., 1998).

Fetal alcohol syndrome (FAS) was identified in the late 1960s. FAS is characterized by deficits in growth, physical structures, and in central nervous system functioning and is a leading cause of mental retardation (Fitzgerald et al., 2000). Subsequent to its identification, studies examining the effects of prenatal exposure to alcohol began emerging. While alcohol is considered a teratogen (i.e., an agent that crosses the placenta and circulates in the fetus during gestation and later causes birth defects in the baby), its effects on developmental outcomes vary depending on the timing of exposure and the dose (Streissguth, 1997), with the central nervous system most affected by exposure to alcohol. Infants exposed prenatally to alcohol show the most enduring changes in neurobehavioral functioning relative to their non-exposed counterparts.

Clinicians working with infants and young children would benefit from understanding what substances an infant might have been exposed to prenatally and whether there is ongoing exposure. Other substances to consider include illicit drugs, nicotine exposure in utero resulting from maternal tobacco use, exposure to second-hand smoke after birth, and exposure to maternal medications, including mood stabilizers and antidepressants.

Child abuse and neglect

Although a chapter of this volume is devoted to child abuse and neglect, writing about infants and young children necessitates a discussion of the issue. The field of infant mental health was influenced and actually grew out of early observations of parental neglect, maternal separation, and the impact of being raised in institutions on young children’s development (Bowlby et al., 1952). Although cruelty to children has been documented throughout history and around the globe, it was not until 1962, when Dr. Henry Kempe and his colleagues (Kempe et al., 1962) at the University of Colorado School of Medicine, explicitly named child abuse as a major health concern with devastating developmental consequences in a landmark paper entitled “The Battered Child Syndrome.” By 1963, all states in the United States had laws protecting children under 18 from non-accidental serious physical injury, sexual exploitation or misuse, neglect, or grave emotional or mental injury resulting from acts of commission or omission by parents, legal guardians, or caretakers.

Maltreatment of infants and young children varies by cultural practices and values and according to biologic predispositions of both children and caregivers (Huberman et al., 2000). Child abuse cuts across all socioeconomic, racial, and ethnic groups. Categories of abuse include physical abuse, sexual abuse, neglect, and emotional abuse. For fragile infants and young children, rates of child abuse and neglect are even higher. Epidemiologic research revealed that the prevalence of maltreatment of children with disabilities was 31% as compared with 9% in children without disabilities (Sullivan and Knutson, 2000).

Child abuse and neglect includes exposure to extreme violence, whether it be domestic violence, community violence, or war conditions. Infants and young children are highly susceptible to their surroundings. Conditions of chronic chaos, fear, danger, and battle, whether experienced by their caregivers, their neighbors, or strangers, influence their capacity to develop secure relationships that form the foundation for later development. Situations of extreme deprivation, poverty, or stress in which caregivers do not have the resources to invest in infants may be considered as extreme neglect and have similar developmental consequences. Examples include infants and young children across the globe who are raised in orphanages and infants in communities and countries where deprivation is so severe and infant mortality rates are so high that parents are forced to stop providing basic care to one child in order to save another.

Children who have been abused, neglected, or exposed to violence may evidence indiscriminate sociability and unpredictable social cues, making it difficult for others to interact
Consider consultation with a multidisciplinary child protection team and report to the police or a local department of human services as mandated by law and ethical guidelines when there is:

- Physical evidence of injury (e.g., skin lesions, bone deformities, anogenital findings of past or recent trauma, multiple episodes of bodily trauma at various stages of healing, “shaken baby syndrome”);
- Verbal disclosure of abuse by the child or a trusted person who knows the child;
- Inappropriate sexual play or knowledge;
- Growth deficiency or sudden shift in growth pattern to far below standard growth curve;
- Repeated use of medical system resulting from illnesses whose origins are unknown or unexplained (Munchausen syndrome by proxy).

with them. Pathogenic care clearly deviates from expected interactions between children and their caregivers and has marked consequences for development. In some cases, severely compromised interactions may warrant a diagnosis of Reactive Attachment Disorder.

Other infants at risk

Other groups of infants are at risk for poor developmental outcomes. Among these are infants who are born into conditions of extreme deprivation and infants who are HIV positive. In this section, we will briefly consider each of these groups.

Both globally and in the United States, infants are born into and raised in conditions of extreme deprivation. When basic resources like food and water are not readily and routinely available, physical, cognitive and emotional development are jeopardized. Infants and young children may die of starvation, dehydration, dysentery, or diseases that may be preventable under other circumstances. Deprivation also includes the absence of parents or caregivers, as in the case of infants reared in orphanages, in war zones, or those whose parents have died because of other epidemics. For example, the global human immunodeficiency virus (HIV) epidemic, particularly in sub-Saharan Africa, leaves hundreds of thousands of infants orphaned each year. In some cases, clinicians working with infants and young children in the United States may be asked to consult with families who have adopted infants from other countries. Understanding the impact of extreme deprivation on child development is essential in working with these families.

Concern regarding infants exposed to HIV continues. Although considerable progress has been made in reducing the amount of maternal-fetal transmission of HIV, with clinical trials reporting transmissions rates below 2%, the pragmat-ics of pharmacologic regimens, cost, and surgical deliveries limit the affordability and feasibility of such interventions (Kourtis, 2002). Importantly, HIV status is often a correlate of multiple difficulties, including conditions of poverty, drug exposure, and chronic illness. HIV status is associated with growth and developmental delays in infants (Pollack et al., 1996). Such delays may be compounded by factors such as having caregivers who are HIV positive and coping with illness and death. Family functioning may be dramatically altered depending on the stage of illness, whether death is imminent, and the cause of infection. For example, an infant living in a family where chronic substance use caused the infection may face repeated separations from his or her caregiver because of the drug use and its social and legal ramifications. In working with families where HIV infection is

Kyra’s story

Kyra, a 32-year-old, HIV positive, African-American woman was referred by the social worker at the home for pregnant women where she was living. Kyra was in her fourth month of pregnancy and was being treated with antiretroviral therapy to decrease the likelihood of transmitting the virus to her baby. During the clinical interview, a number of salient issues emerged. First, Kyra was in treatment for crack cocaine use. Although she denied current use, she indicated that she had been asked to leave her previous placement because she “went missing for a weekend on a crack binge.” Kyra indicated that she was aware of the detrimental effects of cocaine use during pregnancy. A second important issue concerned the placement in out-of-home care of Kyra’s 3-year-old son. James lived with Kyra’s mother and Kyra sporadically dropped in to see him but was unable to live in her mother’s home or consistently follow the treatment plan developed by social services.

Kyra’s involvement with the medical, legal, and human welfare systems was extensive and required continual communication and collaboration among treatment providers. Individual psychotherapy involved bi-weekly, in-home therapy that initially centered on grief work with Kyra surrounding her HIV status. Kyra felt tremendous remorse and guilt about her drug use and the possibility that she would transmit a lethal virus to her unborn child. Kyra appeared committed to continuing her medication regimen. However, she was unable to maintain her sobriety or sever ties from a social circle that perpetuated her addiction. About 6 weeks into treatment, Kyra disappeared for a weekend. When she returned, she acknowledged having used drugs and was asked to leave her placement. Unfortunately, because she did not have a place to live, Kyra had to relocate to a different community and was no longer able to access the services she had been receiving.
an issue, clinicians may consider the impact of environmental factors, stage of the illness, social stigma regarding the illness, and the profound isolation and fear these families face knowing that without a cure, they may be permanently separated from their infants by death.

**Treatment issues**

**Treatment settings and modalities**

Infants and young children may be seen in a variety of settings. Clinic and office-based evaluation and treatment are available and utilized by some consumers of infant services. Parents may bring their children to offices for developmental and medication evaluations and therapy. Among these, specialty clinics serve the needs of targeted populations. For example, clinics provide follow-up care for infants who were hospitalized in the NICU, evaluations of infants who were adopted internationally, or see infants who are HIV positive. Infants and young children may also be seen in the context of programs providing services to parents, and in particular, to mothers (e.g. substance abuse treatment, postpartum depression groups). In addition to these more traditional settings, assessment and intervention frequently occurs in other contexts where infants and young children are seen.

Not uncommonly, parents and caregivers raise concerns about behavioral and developmental issues at routine pediatric visits. Alternatively, the primary care physician may be alerted to an issue through observation of the child at such a visit. For medically fragile infants and young children, treatment may begin almost immediately after birth and take place in a hospital setting. Evaluations, consultations, and interventions with mental health professionals, physicians, developmental specialists, and others often occur at the infant's bedside. Because it is often difficult for parents and caregivers of young children to leave the house and attend the various appointments they have scheduled, home visitation programs offer treatment in the convenience of the family's home. Daycare and educational environments also provide contexts for evaluating and treating infants and their families. Professionals working with infants and their families benefit from being flexible about the context in which concerns emerge and services are provided. Such flexibility will afford greater opportunity to conduct comprehensive evaluations that take into consideration the various contexts and relationships in which infants function.

We share the recent concern raised by Zito and colleagues (Zito et al., 2000) regarding dramatic increases in the prevalence of medication usage in preschool-aged children. In the face of inadequate research (e.g. randomized, double-blind controlled clinical trials) regarding the effects of medication on young children and in light of recent concerns by the Food and Drug Administration regarding the effects of selective serotonin reuptake inhibitors (SSRIs) (Davis et al., 2003), we contend that medication should not be used as a first-line intervention in children under 5 years of age. Only after psychologic, behavioral, and family interventions have been implemented and deemed inadequate to alleviate the symptoms should pharmacologic intervention, in the context of a complete psychiatric evaluation, be pursued (Harmon and Riggs, 1996). This recommendation is consistent with the principle of doing no harm that we are bound to uphold as physicians and mental health professionals treating young children.

**Infant-parent psychotherapy**

Psychotherapy with infants and young children from birth to 3 often involves working with both infants and their parents. Rather than working exclusively with the infant or treating the parent using an individual psychotherapy model, the dyadic relationship is the identified patient in infant-parent psychotherapy. Stemming from a rich psychoanalytic tradition, the goals of infant-parent psychotherapy are to bolster and support social and emotional functioning, and development more generally, through improving the infant-parent relationship. Specifically, treatment centers around “aligning the parents’ perceptions and resulting caregiving behaviors more closely with the baby’s developmental and individual needs within the cultural, socioeconomic, and interpersonal context of the family” (Lieberman et al., 2000, p. 472).

The relationship between an infant and his parent can be accessed through infant behaviors, the interaction between the parent and the infant, infant representations of the self and the parent, parental representations of the infant and of the self, and the parent-therapist relationship. Each of these “ports of entry” may be of immediate clinical attention, enabling the therapist to enter the system (Lieberman et al., 2000). Clinicians focus on salient clinical issues in order to access mutually constructed meanings subsumed within the relationship.

Fraiberg and Fraiberg (1980) eloquently described the nature of infant-parent psychotherapy:

“In treatment, we examine with the parents the past and the present in order to free them and their baby from old ‘ghosts’ who have invaded the nursery, and then we must make meaningful links between the past and the present through interpretations that lead to insight … We move back and forth between present and past, parent and baby, but we always return to the baby (p. 61).”

Infant-parent psychotherapy typically involves joint meetings with the baby and the parents or caregivers present. In some cases, particularly as babies move into toddlerhood, treatment may also include separate sessions with the parents in addition to joint sessions. Similarly, in circumstances where the infant requires additional treatment to address
specific developmental issues or vulnerabilities, additional individual treatment with the infant may be indicated. Flexibility and collaboration with other treatment providers is essential. Regardless of the work being done in individual modalities, the infant-parent psychotherapist attempts to maintain a focus on implications for the relationship.

Although the infant-parent relationship may be the focus of evaluation and treatment, we should not neglect the mental health and social support needs of parents, primary caregivers, families, and communities with babies and young children. Parental psychiatric disorders, substance abuse or dependence, and sociodemographic stressors must be addressed and treated in order to promote optimal infant mental health and development. Many infants and young children are affected by the untreated mental health needs of their families, ongoing exposure to violence, and the psychologic consequences of living in depleted and devastated communities (Shonkoff and Phillips, 2000).

Prevention

The malleability of infants and young children and the profound impact of the environment on development make the first 3 years of life especially appropriate as targets for preventive efforts. Goals of prevention efforts have included, among others: improving pregnancy and newborn health outcomes by providing information and access to prenatal care and decreasing exposure to teratogens; lowering incidence of child abuse and neglect through parent education, providing support, and psychotherapy; increasing the time between subsequent births; improving the infant-parent relationship; and enhancing developmental outcomes through the provision of services and enriched environments. Models of prevention range from home visitation by nurses and paraprofessionals during the prenatal and postnatal periods (Olds et al., 2002) to early childhood intervention efforts as exemplified by Early Head Start programs (Robinson and Fitzgerald, 2002). The following is a detailed description of one such preventive intervention, the Chicago Health Connection’s Doula Project.

Chicago Doula Project

Chicago Health Connection’s (CHC) community-based doula model is rooted in the service community and is a culturally sensitive approach to pregnancy, childbirth, infant development and family support. The Doula Model provides opportunities prior to labor and delivery to enhance the mother’s knowledge of proper prenatal care, early brain development and the critical role they play in shaping the emotional, social and cognitive development of their children. CHC’s consulting and technical assistance provide a flexible framework for replicating this model based on the priorities of an organization and the unique needs of the service community.

The Doula program is one component of an array of support services that are offered to pregnant and birthing women by the partner agency. In many cases, doula participants are also receiving health services, prenatal care and social services. Follow-up services by the partner agencies are provided, such as long-term home visiting, postnatal care and Head Start programs.

Doulas are full- or part-time salaried laywomen recruited from the communities served by the community partners. Doulas come from a variety of sources, local schools, churches, Head Start programs and hospitals, and are generally natural leaders in the community. Successful doulas share certain qualities: a commitment to helping young women “own” their birth; a capacity to form strong trusting relationships, and an ability to meet women where they are and to listen and respond to their needs. A doula’s relationship with the mother begins as soon as the agency is notified of the pregnancy. Regular contact throughout the pregnancy includes accompanying the client on at least one prenatal care visit, helping her develop a birth plan, and providing labor and delivery classes. When labor begins, the doula is available to the mother, helping her determine if she is actually in labor, and supporting her through labor, delivery, and the first few hours postpartum. The doula visits the mother at home during the first working day after hospital discharge, up to five times a week during the first week, two or three times the second week and one to two times in weeks three and four. During the second month postpartum, the doula continues to visit the home at least once a week. At the end of 6-12 weeks, the doula steps back from her relationship with the mother, and the agency steps in to provide ongoing postnatal services.

Preliminary findings about doula support show that when doulas provided continuous emotional support to young, low-income mothers, the women had significantly shorter labors, were more likely to be awake after labor, and were more likely to interact and talk to their babies immediately following labor than women who had not received doula support. In a study of 229 births in the Chicago Doula Project, C-section rates were 8% for single births (compared with 14.5% for US teens and 12.8% for Chicago teens), epidural rates were 11.4% (compared with 50% nationwide), and only 10.5% of participants received inadequate prenatal care (compared to 17.6% for Chicago teens). Breastfeeding initiation rates were 80% (compared with 47.3% for US teens, and 42% for all Illinois women). The sites report that their teen moms are holding their babies more, talking to them more, and are more comfortable talking about their births (Abramson et al., 2000).

Summary

Practitioners who work with infants, young children, and their families know all too well that applying adult stand-
ards to evaluation and treatment of this population is not in the best interest of either the patient or the clinician. Developmental science and the field of infant mental health have contributed much to our understanding of the first 3 years of life. As discussed throughout this chapter, diagnosis and treatment of infants and young children requires an extensive knowledge base, specialized skills, and approaches that take into consideration both the child and the context in which the child exists. Infants and young children must be understood within their important and close relationships, at multiple points in time, and with a thorough assessment of developmental level.

We close this chapter with some thoughts about infants and young children that we hope will inform those who work with them:

- Infants need close and secure interpersonal relationships.
- Infants must explore the environment to learn and grow cognitively and develop a sense of mastery.
- Infants learn through their interactions with adults how to regulate their emotions, attention, and behavior.
- Family, community, and cultural expectations must always be considered in work with young children and their families.
- Clinical infant mental health is a relational construct that begins with the transition to parenthood.
- The theoretical framework for work with young children is developmental within a systems perspective. Psychodynamic and behavioral approaches can be used to work with infants, young children, and their families.
- The field of infant mental health continues to evolve, but the development of Diagnostic Classification: 0–3 has been an important first step in understanding developmentally sensitive diagnostic issues in young children.

- Clinical work in the first years of life creates an excellent opportunity for research related to basic developmental processes, prevention, intervention, and clinical disorders.

Annotated bibliography

A comprehensive review of the field of infant mental health detailing the promise, progress, and future directions of the field with international perspectives. Volume I offers "Perspectives on Infant Mental Health." Volume II addresses "Early Intervention, Evaluation, and Assessment." Volume III examines "Parenting and Child Care." Volume IV reviews "Infant Mental Health in Groups at High Risk."

Provides a detailed evaluation and integration of the science of early childhood development. The book reviews contemporary research, answering questions and making policy recommendations for young children and their families.

A comprehensive overview of infant assessment in the first 3 years of life. Topics include screening tools, newborn assessments, cognitive assessments, and interactional evaluations.

An excellent resource for information on various topics in infant mental health. Chapters include information on contextual factors, treatment, and specific disorders and clinical presentations.

ZERO TO THREE (1994) Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood. Zero To Three/National Center for Clinical Infant Programs, Arlington, VA.
The definitive diagnostic manual for use in the birth to 3 population. The manual details the multi-axial system and describes diagnostic criteria for a range of disorders relevant to infants and young children.