

Practice Parameters for the Assessment and Treatment of Children and Adolescents With Conduct Disorder

ABSTRACT

These practice parameters address the diagnosis, treatment, and prevention of conduct disorder in children and adolescents. Voluminous literature addresses the problem from a developmental, epidemiological, and criminological perspective. Properly designed treatment outcome studies of modern psychiatric modalities are rare. Ethnic issues are mentioned but not fully addressed from a clinical perspective. Clinical features of youth with conduct disorder include predominance in males, low socioeconomic status, and familial aggregation. Important continuities to oppositional defiant disorder and antisocial personality disorder have been documented. Extensive comorbidity, especially with other externalizing disorders, depression, and substance abuse, has been documented and has significance for prognosis. Clinically significant subtypes exist according to age of onset, overt or covert conduct problems, and levels of restraint exhibited under stress. To be effective, treatment must be multimodal, address multiple foci, and continue over extensive periods of time. Early treatment and prevention seem to be more effective than later intervention. *J. Am. Acad. Child Adolesc. Psychiatry*, 1997, 36(10 Supplement):122S–139S. **Key Words:** conduct disorder, adolescents, children, disruptive behavior disorders, delinquency, practice parameters, guidelines.

*These parameters were developed by Hans Steiner, M.D., principal author, and the Work Group on Quality Issues: John E. Dunne, M.D., Chair, William Ayres, M.D., former Chair, Valerie Arnold, M.D., Elissa Benedek, M.D., R. Scott Benson, M.D., Gail A. Bernstein, M.D., William Bernet, M.D., Oscar Bukstein, M.D., Joan Kinlan, M.D., Henrietta Leonard, M.D., Jon McClellan, M.D. AACAP Staff: L. Elizabeth Sloan, L.P.C., Christine M. Miles. Research Assistant: Ross W. McQuivey, B.A. Consultants and other individuals who commented on a draft of these parameters include the California Wellness Foundation Violence Prevention Initiative at Stanford University (Zakee Matthews, M.D., Traci Pitts, Ph.D., Lisa Benton-Hardy, M.D., Sharon Williams, Ph.D.) and the AACAP Committee on Conduct Disorders (Hans Steiner, M.D., Chair, Bruce Perry, M.D., Ph.D., Graham Rogness, M.D., Jon Shaw, M.D., Marcus Kruesi, M.D., Richard Angell, M.D., Ronel Lewis, M.D., Zakee Matthews, M.D., Paula D. Riggs, M.D.). The authors wish to thank the Preventive Committee of the Group for the Advancement of Psychiatry (Naomi Rae-Grant, M.D., Chair, Morton Silverman, M.D., George Makini, M.D., Lynelle Thomas, M.D., Warren T. Vaughan, M.D., Brian McConville, M.D., David Offord, M.D., Stephen Fleck, M.D.), Dennis Cantwell, M.D., James Comer, M.D., Felton Earls, M.D., Shirley Feldman, M.D., Scott Henggeler, Ph.D., Carl Jesness, Ph.D., Alan Kazdin, Ph.D., Dorothy Otnow Lewis M.D., James Lock, M.D., Rolf Loeber, Ph.D., Mark Lipsey, Ph.D., Daniel Offer, M.D., David Offord, M.D., Gerald Patterson, Ph.D., Helmuth Remschmidt, M.D., Karl Richters, Ph.D., Sir Michael Rutter, M.D., and Pirooz Sholevar, M.D., for their thoughtful review. These parameters were made available to the entire Academy membership for review at the 1996 Annual Meeting and were approved by the AACAP Council on March 31, 1997. These parameters are available to AACAP members on the World Wide Web (www.aacap.org). These parameters replace the parameters developed by the AACAP Work Group on Quality Issues chaired by Steven Jaffe, M.D., and published in the *Journal of the American Academy of Child and Adolescent Psychiatry* 31:iv-vii, 1992.*

Reprint requests to AACAP, Communications Department, 3615 Wisconsin Ave. N.W., Washington, DC 20016.

0890-8567/97/3610-0122S/\$0.300/0©1997 by the American Academy of Child and Adolescent Psychiatry.

Literature Review

A National Library of Medicine search was performed in 1995 covering the preceding 5 years, since the literature had been summarized by Lipsey in 1992 and the first edition of these parameters was published in 1992 (American Academy of Child and Adolescent Psychiatry, 1992). The search was updated in March 1996. Using a combination of *Psych-Info* and *Medline* systems, the following topics were reviewed: conduct disorder (845 articles), conduct disorder and adolescence (401 articles), conduct disorder in delinquents (28 articles), disruptive behavior disorder (196 articles), aggressive behavior in adolescence (605 articles), aggressive behavior in delinquents (59 articles), treatment of delinquency (157 articles), and the Ontario Child Health Study (34 articles). Manual review of five representative journals (*American Journal of Psychiatry*, *Journal of the American Academy of Child and Adolescent Psychiatry*, *Archives of General Psychiatry*, *British Journal of Psychiatry*, and *American Psychologist*) complemented the search, adding 15 books and 50 articles that had not been retrieved by the online search. In addition, articles written by the following authors were searched due to their expertise: Nancy Guerra (11 articles), Benjamin Lahey (59 articles), Scott Henggeler (42 articles), Alan Kazdin (66 articles), Marcus Kruesi (2 articles), Rolf Loeber (47 articles), Joan McCord (14 articles), Daniel Offer (19 articles), David Offord (57 articles), Gerald Patterson (25 articles), Michael Rutter (71 articles), Patrick Tolan (11 articles), and Mark Zoccolillo (7 articles). Abstracts generated by these searches were reviewed for relevance and adequacy of research design.

Pertinent sources published before the 5-year search period were also reviewed.

Most of the research on conduct disorder (CD) has been performed on incarcerated male youths, and minority children and adolescents are more represented than in data bases for other disorders. Findings from boys do not readily generalize to girls with the disorder. External validity also may be limited by the skewed ethnic distributions in clinical and criminological samples, but socioeconomic status and ethnicity are confounded and not easily disentangled. The criminological literature addresses these issues systematically, but comparative studies from a psychiatric standpoint are lacking (Blumstein, 1995). Minority youth are more likely to be arrested for violent and drug-related crimes and are overrepresented in incarcerated populations, but this may reflect judicial practices or differential assignment to diversion programs as well as poverty (Lewis et al., 1980; Blumstein, 1995). Considering equal emotional disturbance in hospitalized Caucasian and African-American youths, the latter group is more likely to be incarcerated (Cohen et al., 1990).

The authors concentrated on a subgroup of recent works in which findings were obtained in optimal scientific fashion and seemed to be most compatible with each other and with current clinical practice. These texts form the nucleus of the recommendations in these parameters and are indicated with an asterisk in the "References" section.

Antisocial behavior is a common problem in the course of development of children (Verhulst et al., 1990; Wahler, 1994). Its relationship to psychopathology is much debated (Carey and DiLalla, 1994; Raine, 1993; Rutter, 1996; Wehby et al., 1993). Not all antisocial behavior is psychopathological or requires psychiatric treatment. A careful delineation of normative risk-taking behavior, isolated antisocial behavior, and syndromal clustering of behavior problems is always indicated. The recent introduction of a diagnostic category of "Conduct Disorder" makes certain forms of antisocial behavior clusters independent of criminological definition and allows more targeted study and treatment (Richters, 1993).

The following terms often are used in connection with CD but must be delineated from the psychiatric diagnosis. "Delinquent" is a legal term referring to juveniles committing offenses against the law. The behavior in question is viewed from a legal perspective. "Antisocial behavior" refers to behavior that is hostile to the principles, rules, and laws of a society. The behavior in question is evaluated from the point of view of a society but is not necessarily adjudicated. CD is a psychiatric, diagnostic term referring to a cluster of symptoms that include both of the above but defines them from the point of view of psychopathology.

Conduct disorder is one of the most common forms of psychopathology and also one of the most costly in terms of personal loss to patients, families, and society (Gureje et al.,

1994). It also is one of the most difficult conditions to treat, because the disorder is complex and pervasive. The complexity is further complicated by the lack of resources in the families and communities in which CD develops (Adam et al., 1991; Aronowitz et al., 1994; Ben-Amos, 1992; Bird et al., 1994; Blaske et al., 1989; Cantwell, 1972; Chiland and Young, 1994; Christ et al., 1990; Dishion et al., 1991; Finkelhor and Berliner, 1995; Haddad et al., 1991; Huizinga et al., 1994; Mendel, 1995).

Treatment also is complicated by the tendency of the juvenile justice and school systems to delay bringing children with CD to the attention of psychiatric professionals. Instead, these children often are handled by the probation and parole systems, delaying treatment and making intervention more difficult as the disorder becomes chronic.

During the past 5 years, epidemiological and diagnostic data, as well as data on the risk and resilience factors, have become available. In addition, new treatment approaches that are realistic and have a reasonable chance for success have been developed.

These practice parameters are predicated on two major points: (1) conduct disorder is a severe and complex form of psychopathology, presenting with multiple deficits in a range of domains of functioning; and (2) psychiatric interventions can be successful only if they are carefully coordinated, aimed at multiple domains of dysfunction, and delivered during extended periods of time.

Historical Development

Clinicians traditionally have viewed antisocial behavior in children from two perspectives: as an internal deficit, or as an ecological adaptation to extraordinary circumstances. The first view was derived from experiences with adult patients who showed substantial defects in character formation, often referred to as "psychopathic" behaviors. The second perspective was generated from treating delinquent youths. It was believed that children reacted with antisocial behavior because of harsh family or community circumstances. Garbarino (1995) termed these environments "psychosocially toxic." As environmental conditions changed, antisocial behaviors changed as well, supporting the belief that the childhood manifestations of "psychopathic behavior" were more treatable than the adult form (Earls, 1994). It was not until longitudinal studies were conducted that the stability of conduct problems over time was realized (Farrington et al., 1990; McCord and McCord, 1969; Robins and Rutter, 1990; Rutter, 1988).

The movement to link psychiatric clinics with juvenile courts increased the tension between those who regarded delinquent youth as young psychopaths and those who believed their behavior to be reactive to adverse circum-

stances. William Healy, an obstetrician who founded the first juvenile court clinics in the Chicago and Boston areas, described delinquents as having a "psychic constitutional deficiency" (Earls, 1994). He stressed the importance of finding both mental and physical defects in patients. A countervailing view was proposed by Aichhorn (1935) and later Redl (1951), who applied psychodynamics to the study of delinquency. Aichhorn, the principal of Vienna reform schools, described the "neurotic delinquent" as one who, through his delinquent deeds, seeks to assuage neurotic guilt by seeking punishment. Redl (1951) used the ecology of criminal behavior to devise novel treatment approaches to youths with conduct disorders. As a result, more integrated approaches began to appear. *The Mask of Sanity* (Cleckley, 1941) provided clinical descriptions and comprehensive assessment of both the constitutional and the psychodynamic theories of the psychopath. Cleckley believed that both hereditary and environmental influences were important in the development of the syndrome. At the same time, Bowlby (1944) was studying subtypes of delinquents. The description of "affectionless characters," with histories of prolonged disruptions in early relationships, became one of the sources of inspiration for the study of attachment.

Robins (1966) provided research on the natural history of delinquency, establishing a convincing link between childhood conduct problems and antisocial personality disorder (APD) in adults. A developmental perspective began to replace notions of constitutional inferiority as evaluation moved beyond court clinics into community and medical settings and as epidemiological studies demonstrating continuities between childhood and adult problem behaviors accumulated.

Beginning in the 1950s, Thomas et al. (1968) introduced the notion of the "difficult temperament," which served as an early childhood antecedent of behavior problems in some boys. In 1980, the diagnosis of CD appeared for the first time in the *DSM* (American Psychiatric Association, 1980). The diagnostic term established the syndrome as existing independently from the juvenile justice systems' classifications of delinquency. Unlike delinquency, CD was reserved for the clinical condition in which a pattern of antisocial behavior was present regardless of court involvement.

Recently, interest in the biological substrates of CD has been rekindled. Cloninger et al. (1993) further specified the risks for CD. High novelty-seeking with low harm-avoidance, both heritable traits, were instrumental in generating risk for the individual (Joyce et al., 1994). A recent series of studies involving twins and adoptees (Carey and DiLalla, 1994; Grove et al., 1990; Tellegen et al., 1988) found an aggregation of criminality and antisocial symptoms in families that could be determined genetically (Plomin, 1989). Others have disputed these conclusions (Offord, 1990; Plomin, 1994).

Epidemiology

There is general agreement in the literature that CD is one of the most common forms of psychopathology in children and adolescents. The disorder constitutes the most common reason for referral for psychiatric evaluation of children and adolescents, accounting for 30% to 50% of referrals in some clinics (Kazdin, 1985). Prevalence in the general population is estimated to be between 1.5% and 3.4% of children and adolescents (Bird et al., 1988; Blanz et al., 1990; Feehan et al., 1993; Fergusson et al., 1994a; O'Donnell, 1985) when clinical interviewing is used as a method of detection. The rates may appear higher when arrests are the defining criterion (Bartol and Bartol, 1989; Wolfgang, 1972). The occurrence of CD among youth seems to have increased during the past few decades, possibly due to the increase in the adolescent cohort or improved case-identification and diagnostic methods.

The prevalence of APD in adults is estimated to be 2.6% by structured interviews, showing comparable rates of illness in adults, the diagnosis of whom requires the presence of CD in childhood and considerable stability and continuity of symptoms over time (Loeber et al., 1993a; Regier et al., 1990; Riggs et al., 1995). Onset of CD peaks in late childhood and early adolescence but can range from preschool to late adolescence.

The ratio of boys to girls with CD is between 5:1 (Boyle et al., 1992) and 3.2:1 (Bird et al., 1988), depending on the age range studied. Boys are affected more commonly at all ages, but as children mature, the gap between boys and girls closes. Gender-specific features, which become especially apparent in adolescence, include boys' tendency to exhibit more aggression and girls' tendency to commit more covert crimes and engage in prostitution. In the most severely disturbed youths, these gender-specific symptoms disappear.

Ethnicity has not been a special focus of clinical study to date, but studies of hospital and clinic records (Kilgus et al., 1995) and self-report instruments (Zahner et al., 1993) support an influence of ethnic variables on diagnosis. African-American youths are more likely to be diagnosed with conduct disorder, have fewer diagnoses on Axis I, and report higher levels of internalizing and total symptomatology. Comparative transcultural studies are needed, as are studies using structured interviews that report on the epidemiology of CD while controlling for socioeconomic status and diversity of ethnic background.

Clinical Presentation

Although not exclusively a problem of the socially disadvantaged, there is general agreement in the literature that poverty and low socioeconomic status are common accompaniments of CD (Frick et al., 1989; Loeber et al.,

1993b). Increased criminality, substance abuse, and conflict and decreased community, school, and family structure are associated with the disorder (Cantwell, 1972; Frick et al., 1992; McCord, 1979; Rutter, 1980). CD is more common in urban than rural settings. Incidence of CD increases with age throughout the teen years (Loeber et al., 1993b), most likely reflecting the expanding behavioral repertoire of the adolescent.

Risk Factors. There is an impressive aggregation of empirical data on factors that place children at risk for the development of CD and predictors for the trajectory of the disorder after it has been established (Loeber, 1990; Loeber et al., 1992; Robins and Rutter, 1990). The risk factors also may describe causes of the problem. Most authorities agree that CD is a heterogeneous disorder (Forness et al., 1994; Frick et al., 1993). Although the definitive model of CD has yet to be developed, one possible model is that of genetic liability triggered by environmental risk and mediated by factors such as poor coping skills.

The familial aggregation of the disorder suggests a genetic risk for its development (Eaves et al., 1993; Faraone et al., 1995). It is unlikely that a single gene or even a combination of genes accounts for the occurrence of the highly complex behaviors expressed in CD, but there may be genetic causes for certain risk factors, such as hyperactivity (Grove et al., 1990; Rutter, 1996). Recent reviews present promising leads and a detailed summary of current knowledge in this area (Bock and Goode, 1996; Carey and DiLalla, 1994). Some reviews are more positive than others (Plomin, 1994), and it is clear that definitive studies are lacking. In addition, studies that assess both the environment and genetics of affected families lack sufficient detail and sophistication to allow firm conclusions about the relative importance of each. Clinical experience suggests that families of patients with CD generate conditions that may explain the emergence of conduct problems for psychosocial reasons alone. Children in a particular family may experience different environments, leading to special circumstances that are not obvious in superficial family assessments. Studies of adoptive and placement families (Plomin, 1994) show them to have similar difficulties as genetic families. Possible confounding variables should be studied and controlled before making definitive conclusions about the genetic contribution to CD.

Early constitutional factors, such as temperament and the biological impact of neglect and abuse, also may explain some of the aggregation. An excellent prospective study by Raine et al. (1994) shows that a combination of factors is needed to produce CD. It was shown in 4,269 Danish children that the presence of both birth complications and maternal rejection predicted later violent criminality at 18 years of age.

Estimating heritability retrospectively from adult populations also presents problems because most children with CD

do not develop APD. Those who do may represent a more severely ill subgroup. Concordance in monozygotic twins is higher than in dizygotic twins (Christiansen, 1977), but in an adopted-away study, both genetic and environmental factors were influential (Cadoret et al., 1983). The data in support of the role of genetic factors are inconsistent and inconclusive (Mrazek and Haggerty, 1994). Certain psychophysiological abnormalities have been reported repeatedly as risk factors for CD (Raine, 1993; Lahey et al., 1993), supporting the possibility of at least partial genetic control. The best researched area is the autonomic nervous system, which shows low reactivity on a variety of parameters in patients with CD. These findings predict adult criminality from mid-adolescence but leave open the question of how these changes came to be. Some studies contradict the general findings (Zahn and Kruesi, 1993).

Abnormalities in neurotransmitter systems have been found with regularity, although compared with the psychophysiological literature, the findings are less consistent. Of particular interest are the compounds reflecting the activity of sympathetic arousal, especially in light of the findings of Raine et al. and the fact that many regulatory hormones for this neurotransmitter system are under genetic control (Raine, 1993; Raine et al., 1995). The literature is increasing in scope and sophistication but is limited by an examination of only males (Lahey et al., 1995). Sensation-seeking is inversely related to 3-methoxy-4-hydroxyphenylglycol levels in older youth but not in younger boys with delinquent behavior (Gabel et al., 1994). Rogeness (1994) and Lahey et al. (1995) have repeatedly described abnormalities in the systems reflecting noradrenergic and dopaminergic activity, although these findings do not hold uniformly across other small samples (Pliszka et al., 1988). More recently, serotonin has been implicated in aggressive youth, although the literature is not methodologically strong (Kruesi et al., 1990; Lahey et al., 1993).

Many of the biological findings raise questions about the overlap between environmental stress and biological functioning. Because most children with CD have experienced pronounced, long-term maltreatment, it is likely that many biological alterations are due, at least in part, to emotional trauma. Recently, multiple promising leads on the biological implications of child maltreatment were identified (Mukerjee, 1995), including associations between reduced hippocampal size, physical or sexual abuse, dissociative disorders, and posttraumatic stress disorder (PTSD); low cortisol and emotional numbing; high cortisol and flashbacks; and lack of autonomic reactivity and extended, severe abuse (Resnick et al., 1995).

Gender is a clear risk factor in multiple studies (Offord, 1987), but by mid-adolescence, girls surpass boys in onset of CD. Much less is known about girls with CD, although

recent studies are beginning to document details (Loeber and Keenan, 1994; Quinton et al., 1993; Zoccolillo and Rogers, 1991). There has been much speculation associating gender-specific hormones with CD, but few convincing findings support their role. Although androgens play a major role in the organization and programming of brain circuits, best available data suggest that responses to androgens depend on the biochemical, environmental, and historical context of the individual (Rubinow and Schmidt, 1996).

Temperament also may be a risk factor (Maziade et al., 1990). Difficult temperament may make children more likely to be the target of parental anger, and thus poor parenting (Caspi et al., 1990; Quinton and Rutter, 1988), or may be linked directly to behavior problems later on. Other mediators, such as peer-to-peer relationships and relationships to adults in authority, also could be at work.

Hyperactivity also is a risk factor, although positive family functioning seems to mediate this risk (Hechtman and Weiss, 1996; Maziade, 1989; Offord et al., 1992). It has been reported recently that attention-deficit/hyperactivity disorder (ADHD) is implicated in the onset of CD rather than in its maintenance (Loeber et al., 1995). ADHD seems to facilitate a child's rapid progression to CD pathology. Cognitive deficits and speech and language problems also constitute clear risk factors for CD (Cantwell and Baker, 1991; Hinshaw, 1992; Mrazek and Haggerty, 1994; Satterfield et al., 1982). Whether the accompanying academic performance and intelligence problems represent antecedents or consequences of the disorder is unclear (Hinshaw, 1992; Hodges and Plow, 1990).

Chronic illness and disability also have been shown to be risk factors for CD (Cadman et al., 1986). Chronically ill children have three times the incidence of conduct problems than their healthy peers. If the chronic condition affects the CNS, multiple studies have shown the risk to be approximately five times as high (Rutter, 1988).

Inappropriate aggression at an early age, especially in combination with shyness, predicts later delinquency and drug abuse (Farrington et al., 1990). The combination of aggression and peer rejection also is a risk for adolescent delinquency. It is unclear whether early aggression is an early manifestation of CD or a risk factor for its development.

Poor family functioning, familial substance abuse and psychiatric illness, marital discord, child abuse and neglect, and poor parenting are significant risk factors (Frick et al., 1993; Gabel et al., 1994; Henggeler et al., 1987a,b, 1989; Lahey et al., 1988a,b; Loeber and Stouthamer-Loeber, 1986; Widom, 1989). Abusive and injurious parenting practices are the most influential risk factors (Luntz and Widom, 1994; Widom and Ames, 1994). Child maltreatment is a highly specific risk factor (Finkelhor and Berliner, 1995). An impressive body of research has been generated by Patterson and

colleagues (Patterson and Narrett, 1990; Patterson et al., 1989, 1992), documenting the specific parenting practices that increase risk for CD. His paradigm of "training in non-compliance," by parental capitulation or inconsistent responses to the child's coercive behavior, sheds new light on the relational pathogenesis of CD and opens new avenues for prevention and treatment (Patterson et al., 1989). Substantial evidence shows that children who carry other risk factors are more likely to develop violent behavior in response to the unsupervised viewing of violence in cartoons or other programs (Murray, 1980; Sege and Dietz, 1994). Witnessing real violence also leads to similar consequences (Feshbach, 1988).

Socioeconomic disadvantage, as manifest by inadequate housing, crowding, and poverty, exerts a negative influence, as does negative peer relationships and role models.

In general, the greater the number of risk factors and the earlier they appear, the higher the risk for delinquency (McCord, 1993; McCord and Tremblay, 1992; Mrazek and Haggerty, 1994). Multiple interactive loops may be at work: factors in the child interact with factors in the family to produce early aggressiveness in the child, which leads to rejection by peers and new negative interactions.

Resilience. When protective factors are broadly defined, there is evidence that they improve outcome (Rutter, 1985, 1988). Findings have indicated that protective factors interact with risk factors to mediate outcomes (Zimmerman and Arunkumar, 1994; Baron and Kenny, 1986). High IQ, easy temperament, the ability to relate well to others, good work habits at school, areas of competence outside school, (Rae-Grant et al., 1989) and a good relationship with at least one parent or other important adult (Werner and Smith, 1992) offer protection against antisocial behavior and delinquency in the presence of risk. Prosocial peers and a school atmosphere that fosters success, responsibility, and self-discipline (Rutter, 1979) also emerge as protective factors. The selection of nondelinquent peers and the selection of a "good" mate (as demonstrated by stable interpersonal relationships, a good work history, and capacity for good parenting) have been shown to protect against continuing criminal activity (Kandel and Raveis, 1989; Quinton et al., 1993; Rutter, 1990).

Studies describing the experimental manipulation of protective variables are not available. It would enhance clinical practice to know whether at least some protective factors can be induced or augmented and whether such augmentation would lead to a positive outcome for those at risk for CD as well as for those who are already symptomatic.

The Risk-Resilience Model. Although some authors propose a different approach (Loeber et al., 1993a; Waldman et al., 1995), the *DSM-IV* treats CD as a polythetic diagnostic category (Munir and Boulifard, 1995), which means that a specific single criterion is not necessary for the diagnosis and that any combination of criteria will suffice. Each criterion has an

imperfect probability that helps predict the presence of CD. There also is no hierarchy in the discriminating power of the criteria. This means that the diagnostic category is inherently more heterogeneous than classical medical disease models.

The *DSM-IV* conceptualization is supported by investigations of specific risk factors. Studies suggest that it is the accumulation of risk and the interaction among risks that leads to CD, rather than risk factors operating in isolation (Rutter and Casaer, 1991; Rutter and Sandberg, 1992). Loeber has illustrated the gradual accumulation of factors in the genesis of CD (Loeber et al., 1993a). An expanded risk/resilience model would include a parallel pyramid of protective factors, balancing the gradual aggregation of risk. From this model, it would be more apparent that factors accrue in a developmental pattern, which might guide prevention or intervention efforts.

Risk and resilience factors begin to operate perinatally and are influential across development. Ecological variables, such as poverty, psychosocial toxicity, and lack of supportive community structure, are the first to exert influence. The adequacy of prenatal and perinatal health care affects the development of additional risk, such as CNS impairment. Early in life, temperament (especially difficult), attachment (such as undifferentiated or anxious attachment), and early parenting in response to the child's coercive behavior exert important influence. The role of parenting is important through the school-age years but seems to decline from mid-adolescence on. Internal psychological structures develop and become more important for self-regulation than parenting (Feldman and Weinberger, 1994; Guerra et al., 1990, 1993; Joffe, 1990; Kirkcaldy and Mooshage, 1993; Slaby and Guerra, 1988).

Peer relationships gain importance during the school years and peak in adolescence (Snyder et al., 1986; Vincent et al., 1992). Relationships begin to include intimate partners, which present new opportunities for positive or negative change. The ability to perform in academic and vocational settings and to deal with authority figures appropriately begins to rise in importance and peaks during late adolescence, as the child begins to prepare for the exit from the family of origin to establish family and career.

As the child grows, there is an increasing aggregation of risk, so it takes greater protection to offset the risk (Hoge et al., 1996). The risk/resilience model also predicts a ceiling effect for these protective variables, making further prevention impossible. Treatment, i.e., the active iatrogenic reduction of risk and induction of resilience, is necessary, albeit difficult, if the outcome is to change (Steiner and Hayward, 1997).

Diagnostic Criteria

In contrast to *DSM-III-R* criteria, *DSM-IV* criteria allow for subtyping CD according to age of onset (before or after

10 years of age) and severity (mild, moderate, or severe). The age-based amendment reflects empirical findings that show that childhood-onset CD has a different comorbidity profile than adolescent-onset CD (Lahey et al., 1994). Additionally, children with childhood-onset CD seem to have a greater frequency of neuropsychiatric disorders, low IQ, ADHD, aggression, and familial clustering of externalizing disorders. The chances for children with ADHD to have persistent conduct disturbances into adulthood is a substantial finding in the literature (Mannuzza et al., 1990). The likelihood that a patient with childhood-onset CD will develop APD as an adult is much greater than chance alone.

Childhood-onset CD can be distinguished from adolescent-onset CD by the earlier onset's extensive history of delinquent acts, including fighting and school truancy, early substance abuse, stealing, out-of-home placements, placement failures, and more overt aggression. Late-onset CD usually does not present with such pervasive disturbance in as many domains, although there are exceptions. These youngsters have shorter crime paths and a significant ecological component to the onset of their delinquency. If these children were raised without gangs and drugs, there would be a good chance that they would not commit crimes. Often, the problems serve an ecological function in the youth's life. There are relatively more girls in this group, although boys still predominate. Many patients with adolescent-onset CD, however, have a difficult course (Steiner et al., in press; J. Tinklenberg, H. Steiner, W. Huckaby, unpublished) and a high relapse rate. Therefore, caution must be applied not to oversimplify the early/late-onset dichotomy.

Features not required for the diagnosis of CD, but that have implications for case management, include lack of empathy or concern for others, misperception of the intent of others in ambiguous social situations, lack of guilt or remorse, and low self-esteem (Dodge, 1993). These features are hidden behind a tough facade. Recklessness, poor impulse-control and restraint in stressful situations, irritability, and temper outbursts often are paired with low frustration tolerance. Risk-taking manifests early as impulsive sexual behavior, substance abuse, and cigarette smoking (Dodge, 1993). Suicidal ideation and attempts are much more common than in normal teens and sometimes surpass rates found in depression (Pfeffer et al., 1991; Shaffer, 1988). Also, social and academic performance at school is impaired. In general, low grade delinquent behaviors appear first and gradually become more severe.

Clinically Relevant Subtypes. Loeber has suggested a division of delinquent behavior into authority-conflicted (usually manifesting in relationships with authority figures), covert (e.g., stealing), and overt (e.g., violence) domains. The three subtypes follow different developmental patterns and have distinct comorbidities and prognosis (Loeber et al., 1993a,b,

1994). Loeber's distinction has implications for prognosis, because assessing which "behavioral portfolio" best describes the patient with CD provides specific targets for prevention and intervention.

The distinction between socialized and undersocialized (Quay, 1986) delinquents has been dropped in the *DSM-IV*. Debate continues, however, regarding whether the distinction between delinquents whose behavior is largely determined by ecological circumstances rather than internal and perhaps biological deficits should be retained (Bird, 1994; Lahey et al., 1995). Behavior driven by the norms of a delinquent peer group could be very different from that driven by an individual's inability or unwillingness to follow societal norms. The distinction might not be made easily but would have clinical implications. Suggesting that a family move to save their child from negative peer pressure, even if feasible, would affect only a socialized delinquent.

Recently, a subset of delinquent boys who were also "over-restrained" was described (Steiner and Huckaby, 1989; Steiner et al., 1993; Steiner et al., 1997a; Tinklenberg et al., 1996). Restraint, consisting of impulse control, consideration for others, responsibility, and suppression of aggression, is developed gradually in thousands of interpersonal interactions. Restraint usually is considered a protective factor, but it seems to have a curvilinear relationship to criminal activity, i.e., at very high and very low levels, youngsters are more likely to commit crimes. The over-restrained boys constituted approximately 38% of one incarcerated delinquent population and 30% of a delinquent population on parole (Carrion et al., 1996; Steiner and Huckaby, 1989; Tinklenberg et al., 1996). The crime path of over-restrained delinquents differs significantly from the more common under-restrained type (Steiner et al., 1997b). Over-restrained boys commit fewer but significantly more violent crimes against persons. They tend to be older than under-restrained delinquents, do not lack prosocial skills, and in many ways, seem oversocialized. Their academic and vocational functioning usually is not impaired and they may seem pseudomature. Such individuals have been described in the literature as "repressors" (Weinberger, 1990). They have a marked inability to attend to emotions and to elaborate mental states, especially when they are negatively charged. Their relapse rates are lower than those of under-restrained youths' but are not insubstantial. For over-restrained boys, exploratory psychotherapeutic treatment may be needed to provide reasonable explanations for the crimes they have committed; this treatment is a mandated condition for release from some jurisdictions' juvenile justice systems. Intervention for problems in anger management also may be needed for these boys.

It is likely that many of the subtypes of CD will ultimately be found to overlap and that only a more complex model of subclassification will do the clinical complexities justice.

Therefore, it is likely that the *DSM-IV* childhood-onset group, the Loeber "three-channel disturbed group," the "under-restrained" group, and the "undersocialized group" describe a core of patients with similar profiles from different perspectives. At the present time, data support each of these models and each should be considered to optimize management and treatment of this heterogeneous category of patients.

Differential Diagnosis. There are many excellent studies documenting the extensive comorbidities found with CD (Loeber and Keenan, 1994; Pfeffer et al., 1993; Soltys et al., 1992; Szatmari et al., 1989; Thomas, 1992; Walker et al., 1987). Most of the syndromes associated with CD have been so consistently supported by research that a question has been raised regarding a possible common underlying psychopathology and pathobiology. Comorbidities should be considered during treatment planning, because they provide suitable targets for multimodal intervention.

Of the externalizing disorders, ADHD is the most virulent comorbid condition and has been found repeatedly to overlap with CD. In fact, combining ADHD and CD into a single diagnosis has been debated, but several studies have revealed that the disorders' risk factors are different and their respective predictive powers for adult criminal outcomes are independent but additive (Farrington et al., 1990). Oppositional defiant disorder (ODD) frequently is found to be comorbid, although there is debate regarding whether ODD constitutes a separate diagnostic entity or a developmental antecedent of CD (Lahey et al., 1992; Loeber et al., 1993a; Rey, 1993). A recent analysis (Fergusson et al., 1994b) suggests that retaining the distinctions in the *DSM-III-R* is warranted and that there are equally strong grounds to distinguish between overt and covert CD. The same study also provides additional evidence that ADHD is highly correlated with CD but distinct. Substance abuse and dependence have a high degree of comorbidity with CD (Milin et al., 1991; Riggs et al., 1995).

Among internalizing comorbidities, mood and anxiety disorders are the most common. Data on somatoform disorders are very limited in this age group. Two studies on adolescent males in confinement have found a high frequency of PTSD with CD, by self-report (Burton et al., 1994) and by both structured interview and self-report (Steiner et al., in press). Little is known about girls in this context or about the influence of PTSD on CD or the developmental trajectory of this comorbidity. A preliminary study using semistructured interviews (Schabes et al., 1994) has reported a high frequency of comorbid dissociative disorders in this population.

Among Axis II disorders, the predominant comorbidities are borderline personality disorder in girls, APD in boys, mental retardation, and specific developmental disabilities. The extent of personality comorbidity on Axis II in juveniles with CD (Eppright et al., 1993) raises questions about the

validity of existing diagnostic criteria and the usefulness of interviews that produce these diagnoses for this age group. In prospective studies, only a minority of youths with CD receive a diagnosis of APD (Rutter, 1990).

Among Axis III comorbidities, head trauma and seizure disorders are more common than in the general population, especially in childhood-onset CD (Lewis, 1992; Loeber et al., 1994). Other medical morbidity also is quite common (Lewis et al., 1994).

The comorbidities follow different developmental trajectories and have different effects on gender and prognosis (Loeber and Keenan, 1994). ADHD occurs first in the externalizing spectrum, especially before adolescence, after which its frequency declines. The association between ADHD and CD is especially strong for boys in terms of prognosis. ADHD is followed by ODD and then CD. Finally, substance abuse occurs in adolescence. The addition of substance abuse to ADHD and CD is predictive of violent behavior in boys. In girls, it is much less clear whether the combination of ADHD and CD with substance abuse yields violent results. However, girls do show a much higher risk than boys to develop CD if they have ADHD (Loeber and Keenan, 1994). In both genders, ODD seems to have a critical role in the progression from simple behavior problems to CD (Loeber et al., 1993a).

Internalizing disorders usually are associated with CD during adolescence. Anxiety disorders appear at a higher level than chance, especially for girls, after puberty. Although anxiety disorders in isolation seem to protect against CD, when comorbid, their protective influence depends on the patient's age when the disorders appear (Loeber and Keenan, 1994). Depression and CD each increase in prevalence during puberty and also co-occur much more frequently. CD seems to antedate depression. Boys are more affected by this comorbidity before adolescence, whereas subsequently, girls predominate. The impact of depression on CD ranges from mixed to none but does add the possibility of suicidal behavior to the clinical picture. Somatization disorders, which generally appear during adolescence and predominate in girls, are frequently comorbid with CD, but little is known about their impact on the disorder (Loeber and Keenan, 1994).

In summary, children and adolescents with CD suffer from a variety of comorbidities, which negatively influence the clinical picture and prognosis. In the most severe cases, pathology is compounded. Although differentiating among comorbidities is complicated, in general, the persistent pattern of violating rules and the rights of others, along with accumulating legal consequences, is unique to CD and can assist with differential diagnosis.

Course. Several studies document that for most patients, untreated CD follows a predictable course for the worse through young adulthood, after which it seems to decline in

virulence (Loeber et al., 1993b; Offord et al., 1992; Robins and Rutter, 1990; Rutter, 1992). The course of CD may be explained by the steady accumulation of risk, engendered by increasingly negative interactions between old and new risk factors, whereas life demands more sophisticated skills for successful management. In the well-known Cambridge-Summerville study (McCord and McCord, 1969), a match between delinquent boys and benign supportive attachment figures produced the paradoxical result that boys who attached more fared worse in the long run (McCord, 1992; McCord and McCord, 1969). From a modern clinician's perspective, this study cannot be classified as an intervention, because no published, quality-controlled interventions were delivered. The study can be interpreted to mean that benign case management is not sufficient to improve the course of CD.

Most children with CD go on to lead lives in which many domains of functioning are negatively affected (e.g., interpersonal relationships, ability to maintain healthful life-styles, ability to be financially self-supporting). Approximately 40% of children with CD develop the most pernicious variant of the personality spectrum, APD (Kazdin, 1995; Zoccolillo et al., 1992). The consequences of APD to society are reduced as these young adults mature, however, because crime careers decline sharply in quantity and quality after 30 years of age (Bartol and Bartol, 1989). It is not clear at this point how mismanagement by the juvenile justice system, as well as the absence of treatment of comorbidities, contributes to the development of APD.

Assessment

The problems associated with CD manifest in multiple domains of functioning and require a multidimensional method of assessment. Multiple informants are required to obtain a complete picture and identify targets ideally involving multiple methods of assessment and in multiple settings. This is especially important because the patients themselves have a considerable tendency to minimize their problems and to omit events that indicate disturbance (Bank et al., 1993; Kazdin, 1992; Kazdin et al., 1989; Luiselli, 1991; Mezzich, 1990; Pelham et al., 1992; Pullis, 1991; Ramsey et al., 1990; Reid and Patterson, 1989). The patient usually is referred under the shadow of a behavioral or legal transgression, making initial contact difficult. The sequencing of contacts with the patient, parents, and personnel from the school, social service agency, and juvenile justice system requires thought and sensitivity to maximize development of a working alliance with the patient. The purpose of the evaluation (forensic, clinical management, or treatment) also should be clear from the outset to all concerned (Benton-Hardy and Steiner, 1997).

Several psychometric instruments may be helpful in the assessment process. The Conners Parent-Teacher Rating

Scales (1973) contain a Conduct Problem Factor that is helpful in measuring such problems and tracking response to treatment. The Jessness Inventory (Jessness, 1974; Roberts et al., 1990), the Carlson Psychological Survey (Carlson, 1981), and the Hare Psychopathy Checklist (Hare, 1991), developed with delinquent populations, provide detailed assessments of important behaviors specific to CD and more advanced criminal behavior reflective of APD. The Weinberger Adjustment Inventory yields specific subcategories of distress and restraint, which may predict acting out and impulsivity (Weinberger and Gomes, 1995).

Treatment

The psychiatric professional must differentiate the transient appearance of CD behaviors from the symptoms of severely ill patients and from those who are at severe risk and in whom early intervention is indicated. The evidence regarding early intervention is better supported by empirical findings than are treatments at later stages, although evidence for early intervention is not as complete as needed (Offord and Bennett, 1994; Tolan and Guerra, 1994).

Risk-taking is a normal activity in adolescence and, in fact, evidence suggests that the complete absence of such behaviors can have negative implications for future growth and adjustment (Steiner and Feldman, 1996). Adolescents with isolated occurrences of problem behavior, good premorbid functioning, and preserved functioning in a majority of domains are good prognostic candidates, especially if the behavior changes are due to a move into a delinquent peer group or troubled neighborhood or if there has been a recent significant stressor. Such a profile, commonly seen in private practice, calls for an exploration of other primary diagnoses, e.g., depression, PTSD, or adjustment disorder. Conduct symptoms in these cases are secondary to the other disorder, treatment of which usually brings about resolution of the conduct problem. Examples include isolated drinking and buying of drugs in a patient with depression, and shoplifting in a patient with bulimia.

No single intervention is effective against severe CD. Multimodal interventions must target each domain assessed as dysfunctional and must be suited to the age and ethnicity of the patient. Treatment must be delivered long enough to make a difference. Single-session or short-term interventions have little chance of success (Henggeler and Schoenwald, 1994; Henggeler et al., 1990; Short, 1993; Webster-Stratton, 1993). Multiple services delivered in a continuum of care are best suited for treatment of CD (Abikoff and Klein, 1992; Grizenko et al., 1993; Mulvey et al., 1993; Shamsie et al., 1994; Sholevar, 1995). Inoculation approaches continue to resurface in a variety of forms (boot camps, shock incarceration, isolated medication trials, psychiatric hospitalization,

12-session cognitive behavioral treatment, etc.), but each of them, whether biologically or psychosocially based, are ineffective at best and injurious at worst, especially when used in isolation (Cowles et al., 1995; Kazdin, 1989; Mendel, 1995).

Special Aspects of Conduct Disorder in Preschool-Aged Children. Risk and resilience factors for this age group include poverty, perinatal complications, maternal attachment problems, temperamental traits, poor goodness of fit, and level of parental education. Programs such as Head Start may help prevent delinquency (Zigler, 1993). Such programs usually provide children with stimulation, provide parents with education about normal development and maturation, and provide parental support in times of crisis. In clinical settings, targets for intervention include the temperamental characteristics of the child, the goodness of fit between the child and the parent, and the facilitation of parental efficacy, especially in handling the child's normative coercive behaviors and tantrums. Although stimulants and other medications are prescribed frequently for this age group, especially by primary care physicians, there is no convincing support that medication is effective in the short- or long-term, especially in the absence of ADHD. A comprehensive intervention model for a clinical infant development program has been described and may serve as a focal point for other community services (Greenspan, 1987).

Special Aspects of Conduct Disorder in School-Aged Children. Risk and resilience factors in school-aged children involve more domains of functioning than for preschoolers. There is growing emphasis on the child's ability to function outside of the family, to respond to demands from authority figures, to perform academically, to perform under pressure, to acquire an age-appropriate peer group with major emphasis on same-sex peers, to assume increasing responsibilities in the home, to assist parents, and to be able to function without constant parental supervision.

Multiple studies show that for children with extremely disruptive behavior, both parenting skills training and training for the child aimed at improving peer relationships, academic skills, and compliance with demands from authority figures are effective for CD (McCord et al., 1994; Mendel, 1995; Patterson and Narret, 1990; Patterson et al., 1989; Tolan and Guerra, 1994; Wells, 1995). In this age group, the primary target for intervention should be the child and the family as well as the school context in which the child operates (Kazdin, 1995). In the treatment of school-aged children with severe antisocial behavior, behavioral approaches targeting problem-solving skills, with or without in-vivo practice, are superior to client-centered therapy in short-term outcome (Kazdin, 1995). Although prosocial functioning and antisocial behaviors are related domains, both must be targeted in treatment to fully capture the treatment response (Kazdin, 1992). Social competence seems to respond to various treat-

ment modalities, including television viewing and fantasy play (Tremblay et al., 1991).

The literature generally is not supportive of the effectiveness of individual, psychodynamic psychotherapy in this population, especially when used as a sole treatment modality, although decisive studies are yet to be undertaken. Recent studies, although methodologically limited, show that an attachment-based approach (Moretti et al., 1994) or a classical explorative approach (Fonagy and Target, 1993) might be helpful with at least a subset of children with antisocial traits. This finding is of interest because of the recent description of the over-restrained delinquent (Steiner and Huckaby, 1989; Steiner et al., 1993, 1997; Tinklenberg et al., 1996) who fits the classic description by Aichhorn (1935) and seems to be in need of such explorative approaches.

Special Aspects of Conduct Disorder in Adolescents. In adolescence, risk and resilience involve new and expanding domains. Parenting progressively declines in importance, and internal self-regulation assumes more predictive importance. Risk-taking, developing sexual relationships, performing at higher levels academically and vocationally, maintaining friendships, becoming a constructive member of a group, and coping with developing bodily strengths, skills, and sources of gratification also become important.

Paralleling the rapid expansion of behavioral and cognitive repertoires, delinquent behavior can escalate rapidly and become increasingly severe, complex, and complicated by comorbidities. The subtypes of CD are more pronounced and important for treatment planning.

Some have questioned whether it is advisable to intervene with violent juvenile offenders (Kologerakis, 1992; Tate et al., 1995), especially since resources are limited and there is evidence that developmental shifts occur away from the family, a previously prime target for intervention. Even though evidence supporting treatment efficacy in violent juvenile offenders is lacking, the severity of their problems justifies treatment.

Because adolescents rely more on peers than parents for the generation of values and to chart a course of action, interventions should be targeted to peers as well as to the family (Feldman and Weinberger, 1994). Perhaps the most promising approach is Henggeler's Multi-Systemic Therapy, which treats adolescents with CD in their psychosocial environments while combining aggressive case management in the community with targeted family interventions. Carefully designed studies have shown this approach to be superior to incarceration and other treatments, at substantially reduced cost (Borduin et al., 1995; Henggeler et al., 1987a,b).

Cognitive interventions and skills training may be helpful, but their long-term efficacy is untested. Vocational and academic preparation have some positive influence. A meta-analytic review of Lipsey (1992) for all psychosocial interventions

in this population yielded only a modest effect size of 0.1. Effect sizes varied across studies; better controlled, more practical and behaviorally oriented interventions seemed to be more successful.

Psychoeducational packages targeting social skills, conflict resolution, and anger management are available to augment treatment. Some have better empirical support than others; the better ones can be recommended to educational and other settings dealing with groups of adolescents and parents (Mendel, 1995).

Psychopharmacology. In all cases, psychopharmacological treatment alone is insufficient to treat CD. Medications are best looked on as adjuncts in the treatment of uncomplicated CD and may be useful for crisis management and short-term intervention (Tate et al., 1995). Decisive studies have not been undertaken (Richters et al., 1995).

Comorbid conditions and their specific symptoms, such as aggression, mood lability, or impulsivity, may be targets for psychopharmacological intervention (Marriage et al., 1986). Antidepressants, lithium carbonate, anticonvulsants, and propranolol have been used clinically, but rigorous scientific studies demonstrating their efficacy have yet to be conducted (Campbell, 1992; Lavin and Rifkin, 1993). Neuroleptics have been shown to decrease aggressive behavior, but their potential side effects may outweigh their benefits, especially in long-term use.

The best case for medication can be made for the management of comorbid ADHD symptoms with stimulants (American Academy of Child and Adolescent Psychiatry, 1991, 1997; Hinshaw et al., 1989, 1992). Considering the problems with substance abuse in the CD population, however, caution should be exercised in providing stimulants without extensive clinical support for the diagnosis, and the clinician should be cognizant of the street value of these medications to patients and their parents.

DEVELOPMENT OF THESE PARAMETERS

Conflict of Interest

As a matter of policy, some of the authors of these practice parameters are in active clinical practice and may have received income related to treatments discussed in these parameters. Some authors may be involved primarily in research or other academic endeavors and also may have received income related to treatments discussed in these parameters. To minimize the potential for these parameters to contain biased recommendations due to conflict of interest, the parameters were reviewed extensively by Work Group members, consultants, and Academy members; authors and reviewers were asked to base their recommendations on an objective evaluation of the available evidence; and authors and reviewers who believed that they might have a conflict of

interest that would bias, or appear to bias, their work on these parameters were asked to notify the Academy.

Scientific Data and Clinical Consensus

Practice parameters are strategies for patient management that have been developed to assist clinicians in psychiatric decision-making. These parameters, based on evaluation of the scientific literature and relevant clinical consensus, describe generally accepted approaches to assess and treat specific disorders or to perform specific medical procedures. The validity of scientific findings was judged by design, sample selection and size, inclusion of comparison groups, generalizability, and agreement with other studies. Clinical consensus was obtained through extensive review by the members of the Work Group on Quality Issues, child and adolescent psychiatry consultants with expertise in the content area, the entire Academy membership, and the Academy Assembly and Council.

These parameters are not intended to define the standard of care, nor should they be deemed inclusive of all proper methods of care or exclusive of other methods of care directed at obtaining the desired results. The ultimate judgment regarding the care of a particular patient must be made by the clinician in light of all of the circumstances presented by the patient and his or her family, the diagnostic and treatment options available, and available resources. Considering inevitable changes in scientific literature and technology, these parameters will be reviewed periodically and updated when appropriate.

OUTLINE OF PRACTICE PARAMETERS FOR THE ASSESSMENT AND TREATMENT OF CHILDREN AND ADOLESCENTS WITH CONDUCT DISORDER

- I. Diagnostic assessment. Every child presenting with significant conduct problems merits a careful diagnostic assessment. Interview patients and parents (separately and together) to obtain history. Interview other family members and medical, school, and probation personnel as indicated. (The order of obtaining data may vary.)
 - A. Obtain patient's history.
 1. Prenatal and birth history, focusing on substance abuse by mother, maternal infections, and medications.
 2. Developmental history, focusing on disorders of attachment (e.g., parental depression and substance abuse), temperament, aggression, oppositionality, attention, and impulse control.
 3. Physical and sexual abuse history (as victim and perpetrator).
 4. *DSM-IV* target symptoms.
 - B. Obtain family history.
 1. Family coping style, resources (socioeconomic status, social support/isolation, problem-solving skills, conflict-resolution skills), and stressors. Assess parenting skills, including limit-setting, structure, harshness, abuse, neglect, permissiveness, inconsistency, and management of child's aggression. Explore the parents' and patient's coercive interaction cycles leading to reinforcement of noncompliance.
 2. Antisocial behaviors in family members, including incarceration, violence, physical or sexual abuse of patient or family members.
 3. ADHD, CD, substance use disorders, developmental disorders (e.g., learning disabilities), tic disorders, somatization disorder, mood disorders, and personality disorders in family members.
 4. Adoptions and placements in foster care and institutions.
 - C. Interview patient. Adolescent interview may precede parental interview. Review family history, the patient's personal history, substance use history, and sexual history (including sexual abuse of others). *DSM-IV* target symptoms may not be apparent or acknowledged during the patient interview but may be discovered by interviewing parents and other informants. Evaluate the following:
 1. Capacity for attachment, trust, and empathy.
 2. Tolerance for and discharge of impulses.
 3. Capacity for showing restraint, accepting responsibility for actions, experiencing guilt, using anger constructively, and acknowledging negative emotions.
 4. Cognitive functioning.
 5. Mood, affect, self-esteem, and suicide potential.
 6. Peer relationships (loner, popular, drug-, crime-, or gang-oriented friends).
 7. Disturbances of ideation (inappropriate reactions to environment, paranoia, dissociative episodes, and suggestibility).
 8. History of early, persistent use of tobacco, alcohol, or other substances.
 9. Psychometric self-report instruments might provide useful information.
5. History of symptom development, including impact on family and peer relationships and academic problems (with attention to IQ, language, attention, and learning disabilities).
6. Medical history, focusing on CNS pathology (i.e., head trauma, other illnesses involving CNS, chronic illnesses, extensive somatization).

D. School information.

1. Functioning (IQ, achievement test data, academic performance, and behavior). Data may be obtained in person, by phone, or through written reports from appropriate staff, such as school principal, psychologist, teacher, and nurse.
2. Standard parent- and teacher-rating scales of the patient's behavior may be useful.
3. Referral for IQ, speech and language, and learning disability (high incidence of concurrence) and neuropsychiatric testing if available test data are not sufficient.

E. Physical evaluation.

1. Physical examination within the past 12 months; baseline pulse rate.
2. Collaboration with family doctor, pediatrician, or other health care providers.
3. Vision and hearing screening as indicated.
4. Evaluation of medical and neurological conditions (e.g., head injury, seizure disorder, chronic illnesses) as indicated.
5. Urine and blood drug screening as indicated, especially when clinical evidence suggests substance use that the patient denies.

II. Diagnostic formulation.

A. Identify *DSM-IV* target symptoms.

B. In the assessment of adolescents and children with symptoms suggestive of CD, consider the following:

1. Biopsychosocial stressors (especially sexual and physical abuse, separation, divorce, or death of key attachment figures).
2. Educational potential, disabilities, and achievement.
3. Peer, sibling, and family problems and strengths.
4. Environmental factors, including disorganized home, lack of supervision, presence of child abuse or neglect, psychiatric illness (especially substance abuse) in parents, and environmental neurotoxins (e.g., lead intoxication).
5. Adolescent or child ego development, especially ability to form and maintain relationships.

C. The subtype of the disorder (childhood onset versus adolescent onset; overt versus covert versus authority; under-restrained versus over-restrained; socialized versus undersocialized).

D. Possible alternate primary diagnoses with conduct symptoms complicating their presentation, especially in adolescents. These syndromes may be confused or concurrent with CD.

1. ADHD.
2. ODD.

3. Intermittent explosive disorder.

4. Substance use disorders.

5. Mood disorders (bipolar and depressive).

6. PTSD and dissociative disorders.

7. Borderline personality disorder.

8. Somatization disorder.

9. Adjustment disorder.

10. Organic brain disorder and seizure disorder.

11. Paraphilias.

12. Narcissistic personality disorder.

13. Specific developmental disorders (e.g., learning disabilities).

14. Mental retardation.

15. Schizophrenia.

III. Treatment. Treatment should be provided in a continuum of care that allows flexible application of modalities by a cohesive treatment team. Outpatient treatment of CD includes intervention in the family, school, and peer group. The predominance of externalizing symptoms in multiple domains of functioning call for interpersonal psychoeducational modalities rather than an exclusive emphasis on intrapsychic and psychopharmacological approaches. As a chronic condition, CD requires extensive treatment and long-term follow-up. Mild CD, as seen in private practice, might respond to minor intervention, i.e., consultation with parents and schools. Patients with severe CD are likely to have comorbidities (consider D.1-D.15) that require treatment.

A. Treat comorbid disorders (e.g., ADHD, specific developmental disabilities, intermittent explosive disorder, affective or bipolar disorder, anxiety disorder, and substance use disorder).

B. Family interventions include parent guidance, training, and family therapy.

1. Identify and work with parental strengths.

2. Train parents to establish consistent positive and negative consequences and well-defined expectations and rules. Work to eliminate harsh, excessively permissive, and inconsistent behavior management practices.

3. Arrange for treatment of parental psychopathology (i.e., substance abuse).

C. Individual and group psychotherapy with adolescent or child. Technique of intervention (supportive versus explorative; cognitive versus behavioral) depends on patient's age, processing style, and ability to engage in treatment. Usually, a combination of behavioral and explorative approaches is indicated, especially when there are internalizing and externalizing comorbidities.

D. Psychosocial skill-building training should supplement therapy.

- E. Other psychosocial interventions should be considered as indicated.
1. Peer intervention to discourage deviant peer association and promote a socially appropriate peer network.
 2. School intervention for appropriate placement, to promote an alliance between parents and school, and to promote prosocial peer group contact. Vocational training may be useful.
 3. Juvenile justice system intervention, including court supervision and limit-setting, as well as special programs when available.
 4. Social services referral, to help the family access benefits and service providers, e.g., case managers.
 5. Other community resources, such as Big Brother and Big Sister programs, Friends Outside, and Planned Parenthood, as indicated.
 6. Out-of-home placement (crisis shelters, group homes, residential treatment) when indicated.
 7. Job and independent-living skills training.
- F. Psychopharmacology.
1. Medications are recommended only for treatment of target symptoms and comorbid disorders and are recommended only on the basis of clinical experience, which shows them to be efficacious for some patients. Adequate efficacy studies are lacking in patients with CD and comorbidity (e.g., stimulants for ADHD, antidepressants for mood and anxiety disorders, low-dose major tranquilizers for paranoid ideation with aggression, anticonvulsants for partial complex seizure disorder).
 2. Antidepressants, lithium carbonate, carbamazepine, and propranolol are currently used clinically for CD, but rigorous scientific studies to demonstrate their efficacy have not been performed.
 3. The risks of neuroleptics may outweigh their usefulness in the treatment of aggression in CD and require careful consideration before use.
- G. Level of care decision-making.
1. There is significant agreement on criteria for hospitalization of patients with CD (Lock and Strauss, 1994), but level of care decision-making continues to be complex and unsupported by empirical data. The psychiatric professional should choose the least restrictive level of intervention that fulfills both the short- and long-term needs of the patient. Imminent risk to self or others, such as suicidal, self-injurious, homicidal, or aggressive behavior or imminent deterioration in medical status, remain clear indications of the need for hospitalization.
2. Inpatient, partial-hospitalization, and residential treatment should include the following:
 - a. Therapeutic milieu, including community processes and structure (e.g., level system, behavior modification).
 - b. Significant family involvement tailored to the needs of the patient (with or without patient present), including parent training and family therapy. If family treatment is not provided, the reasoning for its omission should be documented. The younger the patient, the more critical the involvement of the family or other caretakers.
 - c. Individual and group therapy.
 - d. School programing, including special education and vocational training.
 - e. Specific therapies for comorbid disorders.
 - f. Psychosocial skills training to improve social function (e.g., assertiveness, anger control).
 - g. Ongoing coordination with school, social services, and juvenile justice personnel to ensure timely and appropriate discharge to step-down facilities and return to community.

REFERENCES

- References marked with an asterisk are particularly recommended.*
- Abikoff H, Klein R (1992), Attention-deficit hyperactivity and conduct disorder: comorbidity and implications for treatment. *J Consult Clin Psychol* 60:881-892
- Adam B, Kashani J, Schulte E (1991), The classification of conduct disorders. *Child Psychiatry Hum Dev* 22:3-16
- Aichhorn A (1935), *Wayward Youth*. New York: Viking
- American Academy of Child and Adolescent Psychiatry (1991), Practice parameters for the assessment and treatment of attention-deficit hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* 30:1-III
- American Academy of Child and Adolescent Psychiatry (1992), Practice parameters for the assessment and treatment of conduct disorders. *J Am Acad Child Adolesc Psychiatry* 31:iv-vii
- American Academy of Child and Adolescent Psychiatry (1997), Practice parameters for the assessment and treatment of children, adolescents, and adults with attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* 36(suppl):85S-121S
- American Psychiatric Association (1980), *Diagnostic and Statistical Manual of Mental Disorders, 3rd edition (DSM-III)*. Washington, DC: American Psychiatric Association
- Aronowitz B, Liebowitz M, Hollander E, Fazzini E (1994), Neuropsychiatric and neuropsychological findings in conduct disorder and attention-deficit hyperactivity disorder. *J Neuropsychiatry Clin Neurosci* 6:245-249
- Bank L, Duncan T, Patterson G, Reid J (1993), Parent and teacher ratings in the assessment and prediction of antisocial and delinquent behaviors. Special issue: viewpoints on personality: consensus, self-other agreement, and accuracy in personality judgement. *J Pers* 61:693-709
- Baron R, Kenny D (1986), The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *J Pers Soc Psychol* 51:1173-1182

- Bartol C, Bartol A (1989), *Juvenile Delinquency: A Systems Approach*. Englewood Cliffs, NJ: Prentice Hall
- Ben-Amos B (1992), Depression and conduct disorders in children and adolescents: a review of the literature. *Bull Menninger Clin* 56:188-208
- Benton-Hardy L, Steiner H (1997), Conduct disorders. In: *Clinical Child Psychiatry*, Klykylo W, Kay J, Rube D, eds. Philadelphia: Saunders
- Bird H (1994), Structure of *DSM-III-R* criteria for disruptive childhood behaviors: confirmatory factor models. *J Am Child Adolesc Psychiatry* 33:1155-1157
- *Bird H, Canino G, Rubio-Stipec M et al. (1988), Estimates of the prevalence of childhood maladjustment in a community survey in Puerto Rico: the use of combined measures. *Arch Gen Psychiatry* 45:1120-1126
- Bird H, Gould M, Staghezza-Jaramillo B (1994), The comorbidity of ADHD in a community sample of children aged 6 through 16 years. *J Child Fam Stud* 3:365-378
- Blanz B, Schmidt M, Esser G (1990), Conduct disorders (CD): the reliability and validity of the new ICD-10-categories. *Acta Paedopsychiatr* 53:93-103
- Blaske D, Borduin C, Henggeler S, Mann B (1989), Individual, family, and peer characteristics of adolescent sex offenders and assaultive offenders. *Dev Psychol* 25:846-855
- Blumstein A (1995), Violence by young people: why the deadly nexus? *Natl Inst Justice J* 299:2-9
- Bock G, Goode J (1996), *Genetics of Criminal and Antisocial Behaviour*. Ciba Foundation Symposium 194. Chichester: Wiley
- Borduin C, Mann B, Cone L et al. (1995), Multisystemic treatment of serious juvenile offenders: long-term prevention of criminality and violence. *J Consult Clin Psychol* 63:569-578
- Bowlby J (1944), Forty-four juvenile thieves: their characters and home-life. *Int J Psychoanal* 25:1-57
- Boyle M, Offord D, Racine Y, Szatmari P, Fleming J, Links P (1992), Predicting substance use in late adolescence: results from the Ontario child health study follow-up. *Am J Psychiatry* 149:761-767
- Burton D, Foy D, Bwanuasi C, Johnson J (1994), The relationship between traumatic exposure and post-traumatic stress symptoms in male juvenile offenders. *J Trauma Stress* 7:83-93
- Cadman D, Boyle M, Offord D et al. (1986), Chronic illness and functional limitation in Ontario children: findings of the Ontario Child Health Study. *Can Med Assoc J* 135:761-767
- Cadoret R, Cain C, Crowe R (1983), Evidence for gene-environment interaction in the development of adolescent antisocial behavior. *Behav Genet* 13:301-310
- Campbell M (1992), The pharmacological treatment of conduct disorders and rage outbursts. *Psychiatr Clin North Am* 15:69-85
- Cantwell D (1972), Psychiatric illness in the families of hyperactive children. *Arch Gen Psychiatry* 27:414-417
- Cantwell D, Baker L (1991), *Psychiatric and Developmental Disorders in Children With Communication Disorder*. Washington, DC: American Psychiatric Press
- Carey G, DiLalla D (1994), Personality and psychopathology: genetic perspectives. *J Abnorm Psychol* 103:32-43
- Carlson KA (1981), *Manual: Carlson Psychological Survey*. London, Ontario: Research Psychologists Press
- Carrion V, Williams S, Steiner H (1996), Predictors of restraint in juvenile delinquents. In: *Proceedings of the Annual Meeting of the American Academy of Child and Adolescent Psychiatry*, 12:105, Philadelphia
- Caspi A, Elder G, Herbener E (1990), Childhood personality and the prediction of life-course patterns. In: *Straight and Devious Pathways from Childhood to Adulthood*, Robins L, Rutter M, eds. Cambridge University Press
- Chiland C, Young J (1994), *Children and Violence*. Northvale, NJ: Jason Aronson
- Christ M, Lahey B, Frick P et al. (1990), Serious conduct problems in the children of adolescent mothers: disentangling confounded correlations. *J Consult Clin Psychol* 58:840-844
- Christiansen K (1977), A review of studies of criminality among twins. In: *Biosocial Bases of Criminal Behavior*, Mednick S, Christiansen K, eds. New York: Gardner
- Cleckley H (1941), *The Mask of Sanity*. St. Louis: Mosby
- Cloninger R, Svrakic D, Przybeck T (1993), A psychobiological model of temperament and character. *Arch Gen Psychiatry* 50:975-990
- Cohen R, Parmelee D, Irwin L et al. (1990), Characteristics of children and adolescents in a psychiatric hospital and correctional facility. *J Am Acad Child Adolesc Psychiatry* 29:909-913
- Cowles E, Castellano T, Gransky L (1995), "Boot camp" drug treatment and aftercare interventions: an evaluation review. Research in Brief, National Institute of Justice, Washington, DC
- Dishion T, Patterson G, Stoolmiller M, Skinner M (1991), Family, school, and behavioral antecedents to early adolescent involvement with antisocial peers. *Dev Psychol* 27:172-180
- Dodge K (1993), Social-cognitive mechanisms in the development of conduct disorder and depression. *Annu Rev Psychol* 44:559-584
- Earls F (1994), Oppositional-defiant and conduct disorders. In: *Child and Adolescent Psychiatry: Modern Approaches*, Rutter M, Taylor E, Hersov L, eds. Oxford, UK: Blackwell Scientific, pp 308-329
- Eaves L, Silberg J, Hewitt J, Rutter M (1993), Analyzing twin resemblance in multisystem data: genetic applications of a latent class model for symptoms of conduct disorder in juvenile boys. *Behav Genet* 23:423
- Eppright T, Kashani J, Robinson B, Reid J (1993), Comorbidity of conduct disorder and personality disorders in an incarcerated juvenile population. *Am J Psychiatry* 150:1233-1236
- Faraone S, Biederman J, Chen W, Milberger S (1995), Genetic heterogeneity in attention-deficit hyperactivity disorder (ADHD): gender, psychiatric comorbidity, and maternal ADHD. *J Abnorm Psychol* 104 334-345
- Farrington D, Loeber R, Van Kammen W (1990), Long-term criminal outcomes of hyperactivity-impulsivity-attention deficit and conduct problems in childhood. In: *Straight and Devious Pathways from Childhood to Adulthood*, Robins L, Rutter M, eds. Cambridge University Press
- Feehan M, McGee R, Williams S (1993), Mental health disorders from age 15 to age 18 years. *J Am Acad Child Adolesc Psychiatry* 32:1118-1126
- Feldman S, Weinberger D (1994), Self-restraint as a mediator of family influences on boys' delinquent behavior: a longitudinal study. *Child Dev* 65:195-211
- Fergusson D, Horwood L, Lynskey M (1994a), Prevalence and comorbidity of *DSM-III-R* diagnoses in a birth cohort of 15 year olds. *J Am Acad Child Adolesc Psychiatry* 32:1127-1134
- Fergusson D, Horwood L, Lynskey M (1994b), Structure of *DSM-III-R* criteria for disruptive childhood behaviors: confirmatory factor models. *J Am Acad Child Adolesc Psychiatry* 33:1145-1157
- Feshbach S (1988), Television research and social policy: some perspectives. Special issue: television as a social issue. *Appl Soc Psychol Annu* 8:198-213
- Finkelhor D, Berliner L (1995), Research on the treatment of sexually abused children: a review and recommendations. *J Am Acad Child Adolesc Psychiatry* 34:1408-1423
- Fonagy P, Target M (1993), The efficacy of psychoanalysis for children with disruptive disorders. *J Am Acad Child Adolesc Psychiatry* 33:45-55
- Forness S, Kavale K, King B, Kasari C (1994), Simple versus complex conduct disorders: identification and phenomenology. *Behav Disord* 19:306-312
- Frick P, Lahey B, Hartdagen S, Hynd G (1989), Conduct problems in boys: relations to maternal personality, marital satisfaction, and socioeconomic status. *J Clin Child Psychol* 18:114-120
- Frick P, Lahey B, Loeber R, Stouthamer-Loeber M (1992), Familial risk factors to oppositional defiant disorder and conduct disorder: parental psychopathology and maternal parenting. *J Consult Clin Psychol* 60:49-55
- Frick P, Lahey B, Loeber R, Tannenbaum L (1993), Oppositional defiant disorder and conduct disorder: a meta-analytic review of factor analyses and cross-validation in a clinic sample. *Clin Psychol Rev* 13:319-340
- Gabel S, Stadler J, Bjorn J, Shindledecker R, Bowden C (1994), Sensation seeking in psychiatrically disturbed youth: relationship to biochemical parameters and behavior problems. *J Am Child Adolesc Psychiatry* 33:123-129
- Garbarino J (1995), *Raising Children in a Socially Toxic Environment*, 1st ed. San Francisco: Jossey-Bass

- Greenspan S (1987). A model for comprehensive preventive intervention services for infants, young children, and their families. *Clin Infant Rep* 3:377-390
- Grizenko N, Papineau D, Sayegh L (1993). Effectiveness of a multimodal day treatment program for children with disruptive behavior problems. *J Am Acad Child Adolesc Psychiatry* 32:127-134
- Grove W, Eckert E, Heston L, Bouchard T, Segal N, Lykken D (1990). Heritability of substance abuse and antisocial behavior: a study of monozygotic twins reared apart. *Biol Psychiatry* 27:1293-1304
- Guerra N, Huesmann L, Zelli A (1990). Attributions for social failure and aggression in incarcerated delinquent youth. *J Abnorm Child Psychol* 18:347-355
- Guerra N, Huesmann L, Zelli A (1993). Attributions for social failure and adolescent aggression. *Aggressive Behav* 19:421-434
- Gureje O, Omigbodun O, Gater R, Acha R (1994). Psychiatric disorders in a paediatric primary care clinic. *Br J Psychiatry* 165:527-530
- Haddad J, Barocas R, Hollenbeck A (1991). Family organization and parent attitudes of children with conduct disorder. *J Clin Child Psychol* 20:152-161
- Hare R (1991). *The Hare Psychopathy Checklist — Revised*. Tonawanda, NY: Multi-Health Systems
- Hechtman L, Weiss G (1996). Controlled prospective fifteen year follow-up of hyperactives as young adults: non-medical drug and alcohol use and anti-social behaviour. *Can J Psychiatry* 31:557-567
- Henggeler S, Borduin C, Mann B (1987a). Intrafamily agreement: association with clinical status, social desirability, and observational ratings. *J Appl Dev Psychol* 8:97-111
- Henggeler S, Edwards J, Borduin C (1987b). The family relations of female juvenile delinquents. *J Abnorm Child Psychol* 15:199-209
- Henggeler S, Mann B, Borduin C, Blaske D (1990). An investigation of systemic conceptualizations of parent-child coalitions and symptom change. *J Consult Clin Psychol* 58:336-344
- Henggeler S, McKee E, Borduin C (1989). Is there a link between maternal neglect and adolescent delinquency? *J Clin Child Psychol* 18:242-246
- Henggeler S, Schoenwald S (1994). Boot camps for juvenile offenders: just say no. *J Child Fam Stud* 3:243-248
- Hinshaw S (1992). Academic underachievement, attention deficits, and aggression: comorbidity and implications. *J Consult Clin Psychol* 60:893-903
- Hinshaw S, Buhrmester D, Heller T (1989). Anger control in response to verbal provocation: effects of stimulant medication for boys with ADHD. *J Abnorm Child Psychol* 17:393-407
- Hinshaw S, Heller T, McHale J (1992). Covert antisocial behavior in boys with attention-deficit hyperactivity disorder: external validation and effects of methylphenidate. *J Consult Clin Psychol* 60:264-271
- Hodges K, Plow J (1990). Intellectual ability and achievement in psychiatrically hospitalized children with conduct, anxiety and affective disorders. *J Consult Clin Psychol* 58:589-595
- Hoge R, Andrews D, Leschied A (1996). An investigation of risk and protective factors in a sample of youthful offenders. *J Child Psychol Psychiatry* 37:419-424
- Huizinga D, Loeber R, Thornberry T (1994). Urban delinquency and substance abuse. Research Summary, Publication of the Office of Juvenile Justice and Delinquency Prevention, Washington, DC
- *Jessness CF (1974). *Classifying Juvenile Offenders: The Sequential I-Level Classification Manual*. Palo Alto, CA: Consulting Psychologists Press
- Joffe R (1990). Social problem-solving in depressed, conduct-disordered, and normal adolescents. *J Abnorm Child Psychol* 18:565-576
- Joyce P, Mulder R, Cloninger R (1994). Temperament predicts clomipramine and desipramine response in major depression. *J Affect Disord* 30:35-46
- Kandel D, Raveis V (1989). Cessation of illicit drug use in young adulthood. *Arch Gen Psychiatry* 46:109-116
- *Kazdin A (1985). *Treatment of Antisocial Behavior in Children and Adolescents*. Homewood, IL: Dorsey
- Kazdin A (1989). Hospitalization of antisocial children: clinical course, follow-up status, and predictors of outcome. *Adv Behav Res Ther* 11:1-67
- Kazdin A (1992). Child and adolescent dysfunction and paths toward maladjustment: targets for intervention. *Clin Psychol Rev* 12:795-817
- Kazdin A (1995). *Conduct Disorders in Childhood and Adolescence*. Thousand Oaks, CA: Sage Publications
- Kazdin A, Bass D, Siegel T, Thomas C (1989). Cognitive-behavioral therapy and relationship therapy in the treatment of children referred for antisocial behavior. *J Consult Clin Psychol* 57:522-535
- Kilgus M, Pumariega A, Cuffe S (1995). Influence of race on diagnosis in adolescent psychiatric inpatients. *J Am Acad Child Adolesc Psychiatry* 34:67-72
- Kirkcaldy B, Mooshage B (1993). Personality profiles of conduct and emotionally disordered adolescents. *Pers Individ Differ* 15:95-96
- Kologerakis M (1992). Juvenile delinquency. In: *Clinical Handbook in Child Psychiatry and the Law*, Schetky D, Benedek E, eds. Baltimore: Williams & Wilkins
- Kruesi M, Rapport J, Hamburger S et al. (1990). Cerebrospinal fluid monoamine metabolites, aggression, and impulsivity in disruptive behavior disorders of children and adolescents. *Arch Gen Psychiatry* 47:419-426
- Lahey B, Applegate B, Barkley R, Garfinkel B, McBurnett K, Kerdyk L (1994). DSM-IV field trials for oppositional defiant disorder and conduct disorder in children and adolescents. *Am J Psychiatry* 151:1163-1171
- Lahey B, Hart E, Pliszka S, Applegate B, McBurnett K (1993). Neurophysiological correlates of conduct disorder: a rationale and a review of research. *J Clin Child Psychol* 22:141-153
- Lahey B, Hartdagen S, Frick P, McBurnett K (1988b). Conduct disorder: parsing the confounded relation to parental divorce and antisocial personality. *J Abnorm Psychol* 97:334-337
- Lahey B, Loeber R, Quay H, Frick P, Grimm J (1992). Oppositional defiant and conduct disorders: issues to be resolved for DSM-IV. *J Am Acad Child Adolesc Psychiatry* 31:539-546
- Lahey B, McBurnett K, Loeber R, Hart E (1995). Psychobiology. In: *Conduct Disorders in Children and Adolescents*, Sholevar P, ed. Washington, DC: American Psychiatric Press, pp 27-44
- Lahey B, Piacentini J, McBurnett K, Stone P (1988a). Psychopathology in the parents of children with conduct disorder and hyperactivity. *J Am Acad Child Adolesc Psychiatry* 27:163-170
- Lavin M, Rifkin A (1993). Diagnosis and pharmacotherapy of conduct disorder. *Prog Neuropsychopharmacol Biol Psychiatry* 17:875-885
- Lewis DO (1992). From abuse to violence: psychophysiological consequences of maltreatment. *J Am Acad Child Adolesc Psychiatry* 31:383-391
- Lewis DO, Shanok SS, Cohen RJ, Kligfeld M, Frisone G (1980). Race bias in the diagnosis and disposition of violent adolescents. *Am J Psychiatry* 137:1211-1216
- Lewis DO, Yeager C, Lovely R, Stein A, Cobham-Portorreal C (1994). A clinical follow-up of delinquent males: ignored vulnerabilities, unmet needs, and the perpetuation of violence. *J Am Acad Child Adolesc Psychiatry* 33:518-528
- Lipsley M (1992). Juvenile delinquency treatment: a meta-analytic inquiry into the variability of effects. In: *Meta-Analysis for Explanation*. Thousand Oaks, CA: Russell Sage Foundation, pp 83-128
- Lock J, Stauss G (1994). Psychiatric hospitalization of adolescents for conduct disorder. *Hosp Commun Psychiatry* 45:925-928
- Loeber R (1990). Developmental and risk factors of juvenile antisocial behavior and delinquency. *Clin Psychol Rev* 10:1-41
- Loeber R, Green S, Keenan K, Lahey B (1995). Which boys will fare worse? Early predictors of the onset of conduct disorder in a six-year longitudinal study. *J Am Acad Child Adolesc Psychiatry* 34:499-509
- Loeber R, Green S, Lahey B, Christ M (1992). Developmental sequences in the age of onset of disruptive child behaviors. *J Child Fam Stud* 1:21-41
- Loeber R, Keenan K (1994b). Interaction between conduct disorder and its comorbid conditions: effects of age and gender. *Clin Psychol Rev* 14:497-523
- Loeber R, Keenan K, Lahey B, Green S, Thomas C (1993a). Evidence for developmentally based diagnoses of oppositional defiant disorder and conduct disorder. *J Abnorm Child Psychol* 21:377-410
- Loeber R, Russo M, Stouthamer-Loeber M, Lahey B (1994a). Internalizing problems and their relation to the development of disruptive behaviors in adolescence. *J Res Adolesc* 4:615-637

- Loeber R, Stouthamer-Loeber M (1986), Family factors as correlates and predictors of juvenile conduct problems and delinquency. In: *Crime and Justice: An Annual Review of Research*, Vol. 7, Morris N, Tonry M, eds. University of Chicago Press, pp 29–149
- Loeber R, Wung P, Keenan K et al. (1993b), Developmental pathways in disruptive behavior. *Dev Psychopathol* 5:101–132
- Luiselli J (1991), Assessment-derived treatment of children's disruptive behavior disorders. Special issue: current perspectives in the diagnosis assessment, and treatment of child and adolescent disorders. *Behav Modif* 15:294–309
- Luntz B, Widom C (1994), Antisocial personality disorder in abused and neglected children grown up. *Am J Psychiatry* 151:670–674
- Mannuzza S, Klein R, Konig P, Giampino T (1990), Childhood predictors of psychiatric status in the young adulthood of hyperactive boys: a study controlling for chance association. In: *Straight and Devious Pathways from Childhood to Adulthood*, Robins L, Rutter M, eds. Cambridge University Press
- Marriage K, Fine S, Moretti M, Haley G (1986), Relationship between depression and conduct disorder in children and adolescents. *J Am Acad Child Psychiatry* 25:687–691
- Maziade M (1989), Should adverse temperament matter to the clinician? In: *Temperament in Childhood*, Kohnstamm G, Bates J, Rothbart M, eds. Chichester, England: Wiley, pp 421–435
- Maziade M, Caron C, Cote R et al. (1990), Psychiatric status of adolescents who had extreme temperaments at age 7. *Am J Psychiatry* 147: 1531–1536
- McCord J (1979), Some child-rearing antecedents of criminal behavior in adult men. *J Pers Soc Psychol* 37:1477–1486
- McCord J (1992), The Cambridge-Somerville study: a pioneering longitudinal experimental study of delinquency prevention. In: *Preventing Antisocial Behavior: Interventions from Birth through Adolescence*, McCord J, Tremblay R, eds. New York: Guilford, pp 196–206
- McCord J (1993), Conduct disorder and antisocial behavior: some thoughts about processes. Special issue: toward a developmental perspective on conduct disorder. *Dev Psychopathol* 5:321–329
- McCord W, McCord J (1969), *Origins of Crime*. Montclair, NJ: Patterson Smith
- McCord J, Tremblay R (1992), *Preventing Antisocial Behavior: Interventions from Birth through Adolescence*. New York: Guilford
- McCord J, Tremblay R, Vitaro F, Desmarais-Gervais L (1994), Boys' disruptive behaviour, school adjustment, and delinquency: the Montreal prevention experiment. *Int J Behav Dev* 17:739–752
- Mendel R (1995), Prevention or pork? A hard-headed look at youth-oriented anti-crime programs. Washington, DC: American Youth Policy Forum
- Mezzich A (1990), Diagnostic formulations for violent delinquent adolescents. *J Psychiatry Law* 18:165–190
- Miln R, Halikas J, Meller J, Morse C (1991), Psychopathology among substance abusing juvenile offenders. *J Am Acad Child Adolesc Psychiatry* 30:569–574
- Moretti M, Holland R, Peterson S (1994), Long term outcome of an attachment-based program for conduct disorder. *Can J Psychiatry* 39:360–370
- Mrazek P, Haggerty R (1994), *Reducing Risks for Mental Disorders: Frontiers for Preventative Intervention Research*. Washington, DC: National Academy Press
- Mukerjee M (1995), Hidden scars: sexual and other abuse may alter a brain region. *Sci Am* October:14, 20
- Mulvey E, Arthur M, Reppucci N (1993), The prevention and treatment of juvenile delinquency: a review of the research. *Clin Psychol Rev* 13:133–167
- Munir K, Boulifard D (1995), Comorbidity. In: *Conduct Disorders in Children and Adolescents*, Sholevar G, ed. Washington, DC: American Psychiatric Press, pp 59–80
- Murray J (1980), *Television and Youth: 25 Years of Research and Controversy*. Boys Town, NE: Boys Town Center for the Study of Youth Development
- O'Donnell D (1985), CDs. In: *Diagnoses in Psychopharmacology of Childhood and Adolescent Disorders*, Weiner J, ed. New York: Wiley, pp 250–287
- Offord D (1987), Prevention of behavioral and emotional disorders in children. *J Child Psychol Psychiatry* 28:9–19
- *Offord D (1990), Conduct disorder: risk factors and prevention. In: *Prevention of Mental Disorders. Alcohol and Other Drug Use in Children and Adolescents*, OSAP Prevention Monograph 2, Shaffer D, Philips I, Enzer N, eds. Rockville, MD: United States Department of Health and Humans Services, pp 273–297
- Offord D, Bennett K (1994), Conduct disorder: long-term outcomes and intervention effectiveness. *J Am Acad Child Adolesc Psychiatry* 33:1069–1078
- Offord D, Boyle M, Racine Y, Fleming J, Cadman D (1992), Outcome, prognosis, and risk in a longitudinal follow-up study. *J Am Acad Child Adolesc Psychiatry* 31:916–923
- Patterson G, Crosby L, Vuchinich S (1992), Predicting risk for early police arrest. *J Quant Criminal* 8:335–355
- *Patterson G, DeBaryshe B, Ramsey E (1989), A developmental perspective on antisocial behavior. *Am Psychol* 44:329–335
- *Patterson G, Narrett C (1990), The development of a reliable and valid treatment program for aggressive young children. *Int J Mental Health* 19:19–26
- Pelham W, Evans S, Gnagy E, Greenslade K (1992), Teacher ratings of DSM-III-R symptoms for the disruptive behavior disorders: prevalence, factor analyses, and conditional probabilities in a special education sample. *Sch Psychol Rev* 21:258–299
- Pfeffer C, Klerman G, Hurt S, Kakuma T, Peskin J, Siefker C (1993), Suicidal children grown up: rates and psychosocial risk factors for suicide attempts during follow-up. *J Am Acad Child Adolesc Psychiatry* 32:106–113
- Pfeffer C, Klerman G, Hurt S, Lesser M, Peskin J, Siefker C (1991), Suicidal children grown up: demographic and clinical risk factors for adolescent suicide attempts. *J Am Acad Child Adolesc Psychiatry* 30:609–616
- Pliszka S, Rogeness G, Renner P, Sherman J, Broussard T (1988), Plasma neuro-chemistry in juvenile offenders. *J Am Acad Child Adolesc Psychiatry* 27:588–594
- Plomin R (1989), Environment and genes: determinants of behavior. *Am Psychol* 44:105–111
- Plomin R (1994), The Emanuel Miller Memorial lecture 1993: genetic research and identification of environmental influences. *J Child Psychol Psychiatry* 35:817–834
- Pullis M (1991), Practical considerations of excluding conduct disordered students: an empirical analysis. *Behav Disord* 17:9–22
- Quay H (1986), Conduct disorders. In: *Psychopathological Disorders of Childhood* 3rd ed, Quay H, Werry J, eds. New York: Wiley, pp 35–72
- Quinton D, Pickles A, Maughan B, Rutter M (1993), Partners, peers, and pathways: assortative pairing and continuities in conduct disorder. In: *Milestones in the Development of Resilience*. *Dev Psychopathol* 5(4)(special issue):763–783
- Quinton D, Rutter M (1988), *Parental Breakdown: The Making and Breaking of Intergenerational Links*. Aldershot, England: Gower
- *Rae-Grant N, Thomas F, Offord D, Boyle M (1989), Risk, protective factors, and the prevalence of behavioral and emotional disorders in children and adolescents. *J Am Acad Child Adolesc Psychiatry* 28: 262–268
- Raine A (1993), *The Psychopathology of Crime: Criminal Behaviors as a Clinical Disorder*. San Diego: Academic Press
- Raine A, Brennan P, Mednick S (1994), Birth complications combined with early maternal rejection at age 1 year predispose to violent crime at 18 years. *Arch Gen Psychiatry* 51:984–988
- Raine A, Venables P, Williams M (1995), High autonomic arousal and electrodermal orienting at age 15 years as protective factors against criminal behavior at age 29 years. *Am J Psychiatry* 152:1595–1600
- Ramsey E, Patterson G, Walker H (1990), Generalization of the antisocial trait from home to school settings. *J Appl Dev Psychol* 11:209–223
- Redl F (1951), *Children Who Hate: The Disorganization and Breakdown of Behavior Controls*. New York: Free Press

- Regier D, Farmer M, Rae D et al. (1990), Comorbidity of mental disorders with alcohol and other drug abuse: results from the Epidemiologic Catchment Area (ECA) study. *JAMA* 264:2511-2518
- Reid J, Patterson G (1989), The development of antisocial behavior patterns in childhood and adolescence. In: *Personality and Aggression. Eur J Pers* 3(special issue):107-119
- Resnick H, Yehuda R, Pitman R, Foy D (1995), Effect of previous trauma on acute plasma cortisol level following rape. *Am J Psychiatry* 152:1675-1677 [Responding to the *Mental Health Needs of Youth in the Juvenile Justice System* (1992). Seattle: The National Coalition for the Mentally Ill in the Criminal Justice System]
- Rey J (1993), Oppositional defiant disorder. *Am J Psychiatry* 150:1769-1778
- Richters J (1993), Mark Twain meets *DSM-III-R*: conduct disorder, development, and the concept of harmful dysfunction. *Dev Psychopathol* 5:5-29
- Richters J, Arnold E, Jensen P et al (1995), NIMH collaborative multisite multimodal treatment study of children with ADHD: I. background and rationale. *J Am Acad Child Adolesc Psychiatry* 34:987-1000
- Riggs P (1995), Adolescent substance use disorder with conduct disorder and other comorbid conditions. Institute Outline, presented at the 42nd Annual Meeting of the American Academy of Child and Adolescent Psychiatry, New Orleans
- Riggs P, Baker S, Mikulich S, Young S, Crowley T (1995), Depression in substance-dependent delinquents. *J Am Acad Child Adolesc Psychiatry* 34:764-771
- Roberts G, Schmitz K, Pinto J, Cain S (1990), The MMPI and Jesness Inventory as measures of effectiveness on an inpatient conduct disorders treatment unit. *Adolescence* 25:986-996
- *Robins L (1966), *Deviant Children Grown Up*. Baltimore: Williams & Wilkins
- Robins L, Rutter M (1990), *Straights and Devious Pathways from Childhood to Adulthood*. New York: Cambridge University Press
- Rogeness G (1994), Biological findings in conduct disorder. *Child Adolesc Psychiatry Clin North Am* 3:271-284
- Rubinow D, Schmidt P (1996), Androgens, brain and behavior. *Am J Psychiatry* 153:974-984
- Rutter M (1979), Protective factors in children's responses to stress and disadvantage. In: *Primary Prevention of Psychopathology, Vol 3: Social Competence in Children*, Kent M, Rolf J, eds. Hanover, NH: University Press of New England, pp 49-74
- Rutter M (1980), Influences on adolescent behavior. In: *Changing Youth in a Hanging Society*, Rutter M, ed. Cambridge, MA: Harvard University Press, pp 145-192
- Rutter M (1985), Resilience in the face of adversity: protective factors and resistance to psychiatric disorder. *Br J Psychiatry* 147:598-611
- Rutter M (1988), *Studies of Psychosocial Risk: The Power of Longitudinal Data*. New York: Cambridge University Press
- Rutter M (1990), Commentary: some focus and process considerations regarding effects of parental depression on children. *Dev Psychol* 26:60-67
- Rutter M (1992), Adolescence as a transition period: continuities and discontinuities in conduct disorder. *J Adolesc Health* 13:451-460
- *Rutter M (1996), Introduction: concepts of antisocial behaviour, of cause, and of genetic influences. In: *Genetics of Criminal and Antisocial Behaviour*, Bock G, Goode J, eds. Chichester: Wiley, pp 1-20
- Rutter M, Caser P (1991), *Biological Risk Factors for Psychosocial Disorders*. New York: Cambridge University Press
- Rutter M, Sandberg S (1992), Psychosocial stressors: concepts, causes and effects. *Eur Child Adolesc Psychiatry* 1:3-13
- Satterfield J, Hoppe C, Schell A (1982), A prospective study of delinquency in 110 adolescent boys with attention deficit disorder and 88 normal adolescent boys. *Am J Psychiatry* 139:795-798
- Schabes M, Mathews Z, Steiner H (1994), Predicting the prevalence of PTSD and dissociative disorders in incarcerated juvenile delinquents. In: *Scientific Proceedings of the Annual Meeting of the American Academy of Child and Adolescent Psychiatry*, New York
- Schetky D, Benedek E (1992), *Clinical Handbook in Child Psychiatry and the Law*. Baltimore: Williams & Wilkins
- Sege R, Dietz W (1994), Television viewing and violence in children: the pediatrician as agent for change. *Pediatrics* 94:600-607
- Shaffer D (1988), The epidemiology of teen suicide: an examination of risk factors. *J Clin Psychiatry* 49:36-41
- Shamsie J, Sykes C, Hamilton H (1994), Continuity of care for conduct disordered youth. *Can J Psychiatry* 39:415-420
- Sholevar G (1995), *Conduct Disorders in Children and Adolescents*. Washington, DC: American Psychiatric Press
- Short R (1993), Conduct disorders: a framework for understanding and intervention in schools and communities. *Sch Psychol Rev* 22:362-275
- Slaby R, Guerra N (1988), Cognitive mediators of aggression in adolescent offenders: I. Assessment. *Dev Psychol* 24:580-588
- Snyder J, Dishion T, Patterson G (1986), Determinants and consequences of associating with deviant peers during preadolescence and adolescence. *J Early Adolescence* 6:29-43
- Soltys S, Kashani J, Dandoy A, Vaidya A (1992), Comorbidity for disruptive behavior disorders in psychiatrically hospitalized children. *Child Psychiatry Hum Dev* 23:87-98
- Steiner H, Feldman S (1996), General principles and special problems. In: *Treating Adolescents*, Steiner H, ed. San Francisco: Jossey-Bass, pp 1-41
- Steiner H, Garcia I, Huckaby W (1993), Recidivism along personality dimensions. In: *Scientific Proceedings of the Annual Meeting of the American Academy of Child and Adolescent Psychiatry*, San Antonio
- Steiner H, Garcia I, Matthews Z (1997a), PTSD in incarcerated juvenile delinquents. *J Am Acad Child Adolesc Psychiatry* 36:357-365
- *Steiner H, Hayward C (in press), *Risk and Resilience*. New York: Guilford
- Steiner H, Huckaby W (1989), Adaptation in incarcerated juvenile offenders. In: *Scientific Proceedings of the 36th Annual Meeting of the American Academy of Child and Adolescent Psychiatry*, New York
- Steiner H, Williams SE, Benton-Hardy L, Kohler M, Duxbury E (1997b), Violent crime paths in incarcerated juveniles: psychological, environmental, and biological factors. In: *Biosocial Bases of Violence*, Raine A, Farrington D, Brennan P, Mednick SA, eds. New York: Plenum, pp 325-328
- Szatmari P, Boyle M, Offord D (1989), ADHD and conduct disorder: degree of diagnostic overlap and differences among correlates. *J Am Acad Child Adolesc Psychiatry* 28:865-872
- Tate D, Reppucci N, Mulvey E (1995), Violent juvenile delinquents: treatment effectiveness and implications for future action. *Am Psychol* 50:777-781
- Tellegen A, Lykken D, Bouchard T, Wilcox K, Segal N, Rich S (1988), Personality in twins reared apart and together. *J Pers Soc Psychol* 5:1031-1039
- Thomas A, Chess S, Birch H (1968), *Temperament and Behavior Disorders in Children*. New York University Press
- Thomas G (1992), Depression and conduct disorders as co-morbid conditions in students who have been suspended from regular high school units and are attending an alternative school. *Dis Abstr Int* 53:1258
- Tinklenberg J, Steiner H, Huckaby W (1996), Criminal recidivism predicted from narratives of violent juvenile delinquents. *Child Psychiatry Hum Dev* 27:69-79
- Tolan P, Guerra N (1994), Prevention of delinquency: current status and issues. *Appl Prevent Psychol* 3:251-273
- Tremblay R, McCord J, Boileau H, Charlebois P (1991), Can disruptive boys be helped to become competent? *Psychiatry* 54:148-161
- Verhulst F, Versluis-den Biema H, Van der Ende J, Berden G, Sanders-Woudstra J (1990), Problem behavior in international adoptees: III. Diagnosis of child psychiatric disorders. *J Am Acad Child Adolesc Psychiatry* 29:420-428
- Vincent J, Houlihan D, Mitchell P (1992), Predictors of peer helpfulness: implications for youth in residential treatment. *Behav Resid Treat* 7:45-53
- Wahler R (1994), Child conduct problems: disorders in conduct or social continuity? *J Child Fam Stud* 3:143-156
- Waldman I, Lilienfeld S, Lahey B (1995), Toward construct validity in the childhood disruptive behavior disorders: classification and diagnosis in *DSM-IV* and beyond. *Adv Clin Child Psychol* 17:323-363

- Walker J, Lahey B, Hynd G, Frame C (1987), Comparison of specific patterns of antisocial behavior in children with conduct disorder with or without coexisting hyperactivity. *J Consult Clin Psychol* 55:910-913
- Webster-Stratton C (1993), Strategies for helping early school-aged children with oppositional defiant and conduct disorders: the importance of home-school partnerships. *Sch Psychol Rev* 22:437-457
- Wehby J, Dodge K, Valente E (1993), School behavior of first grade children identified as at-risk for development of conduct problems. *Behav Disord* 19:67-78
- Weinberger D (1990), The construct validity of the repressive coping style. In: *Repression and Dissociation*, Singer JL, ed. University of Chicago Press, pp 337-386
- Weinberger D, Gomes M (1995), Changes in daily mood and self-restraint among undercontrolled preadolescents: a time-series analysis of "acting-out." *J Am Acad Child Adolesc Psychiatry* 34:1473-1482
- Wells K (1995), Parent management training. In: *Conduct Disorders in Children and Adolescents*, Sholevar P, ed. Washington, DC: American Psychiatric Press, pp 213-236
- Werner E, Smith R (1992), *Overcoming the Odds: High Risk Children From Birth to Adulthood*. New York: Cornell University Press
- Widom C (1989), The cycle of violence. *Science* 244:160-166
- Widom C, Ames M (1994), Criminal consequences of childhood sexual victimization. *Child Abuse Negl* 18:303-318
- Wolfgang M (1972), *Delinquency in a Birth Cohort*. University of Chicago Press
- Zahn T, Kruesi M (1993), Autonomic activity in boys with disruptive behavior disorders. *Psychophysiology* 30:605-614
- Zahner G, Jacobs J, Freeman D, Trainor KF (1993), Rural-urban child psychopathology in a northeastern US state: 1986-1989. *J Am Acad Child Adolesc Psychiatry* 32:378-387
- Zigler E (1993), Reshaping early childhood intervention to be a more effective weapon against poverty. In: *Proceedings of the 101st Annual Meeting of the American Psychological Association*, Toronto
- Zimmerman MA, Arunkumar R (1994), Resiliency research: implications for schools and policy. Social Policy Report, Society for Research in Child Development, Ann Arbor, MI
- Zoccolillo M, Pickles A, Quinton D, Rutter M (1992), The outcome of childhood conduct disorder: implications for defining adult personality disorder and conduct disorder. *Psychol Med* 22:971-986
- Zoccolillo M, Rogers K (1991), Characteristics and outcomes of hospitalized adolescent girls with conduct disorder. *J Am Child Adolesc Psychiatry* 30:973-981