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ABSTRACT

This report seeks to provide an objective review of Iowa's educational services to students with attention deficit disorders (ADD), and to present recommendations for maintaining and enhancing these services. State laws and rules and federal legislation and regulations guiding such students' eligibility for special education programs and services are examined. This examination found a growing recognition of the potential need for special education for at least some individuals with ADD and the need for educational accommodations for probably all of these individuals. In an attached document, "Attention Deficit Disorders in Perspective" by Gretchen Holt and others, a review of the literature is presented, focusing on medical, educational, and psychological information about attention deficit disorder with a particular emphasis on the educational aspects of the disorder. It reviews the relationship of ADD to other disorders, behavior characteristics at home and school, assessment, management and interventions, controversial therapies, and outcomes. Appended to the literature review are diagnostic criteria for attention deficit and related disorders and a list of over 80 references and 9 recommended readings. Recommendations are presented in the three broad categories of policy, research and information, and staff development. Sample recommendations include requiring that information regarding ADD be included as a component of license renewal for school staff, establishing interagency efforts, developing various databases and a clearinghouse, and providing staff development to interagency multidisciplinary teams. (JDD)

Attention Deficit Disorder Study Group

Final Report

Presented to

Bureau of Special Education
Iowa Department of Education

October 1991

The work of the study group and preparation of this final report was facilitated, in part, by the Mountain Plains Regional Resource Center, Drake University, Des Moines, Iowa.

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Prologue

This document is the product of a group of Iowans who spent the past year studying the issues regarding students with attention deficit disorders. These persons were selected by the Bureau of Special Education, Iowa Department of Education. The criteria for their selection included:

(a) A demonstrated interest in improving educational services for students with attention deficit disorders.
(b) Representing a variety of perspectives (regular education, special education, parents, health, etc.)
(c) A willingness to devote a significant amount of time during the 1990-1991 school year to the tasks of the Study Group.

The Bureau of Special Education issued the following charge to the group:

> The Iowa Department of Education is committed to the principle that all students are entitled to a quality education. Over the past year, the Department and the Governor's office have received numerous communications expressing concern about the educational services being provided and available to students with attention deficit disorder. The communications have expressed the need for recognizing attention deficit disorder as a disability category, mandating training for educators in the identification and management of students with the disorder, emphasizing local district compliance with state rules and policies, and reducing class size so as to better serve such students. As a result, the Bureau of Special Education has decided to commit time and resources to studying the current status of services to students with attention deficit disorders and to considering any needed changes in the delivery system for meeting the needs of this population. The process chosen to accomplish this task was a Study Group of parents and professionals who would examine the issues and current status of services, and prepare recommendations for the Bureau. The Bureau has also arranged for the Mountain Plains Regional Resource Center to assist and facilitate the group in its efforts.

It was further explained to the Study Group that the Bureau was asking the group to pursue two primary goals:

- the development of an objective report on the current status of Iowa's educational services to students with attention deficit disorders and present recommendations for maintaining and enhancing these services, and,
- the development and dissemination of awareness and information packets to the state's area education agencies and school districts about attention deficit disorders.

This report represents the group's response to the first goal.

The Attention Deficit Disorders Study Group met six times during the 1990-1991 school year. In addition to these meetings of the overall committee, there were numerous meetings held with subcommittees of the group and other persons representing the Bureau of Special Education and the Mountain Plains Regional Resource Center. The chronology which follows gives the reader an idea of the major issues discussed at each meeting and reflects the work of the Study Group.

September Meeting – Time was taken to discuss the overall purposes and goals for

the group. Each group member was given an opportunity to share his/her personal perspectives on ADD. Among the themes that were brought out at this time that became major topics for the group were:

- the relationship between the educational and medical community requires a multi-disciplinary effort.
- regular education teachers are seeking knowledge in this area
- students with ADD need individualization
- teachers are dealing with more students and students with more problems
- we need to assist in developing parent involvement with school programs.

A questionnaire was given to group members asking the following questions:

1) What are the major strengths of our current educational system in Iowa that help in meeting the needs of students with ADD?
2) What are the three major barriers in Iowa for providing appropriate educational programs and services to students with ADD?
3) What are the three major questions or priorities this group should address?

A nominal group process was used to prioritize all of the individual answers and form consensus for the Study Group on each question. The group divided into three subcommittees—Research/Data Collection, Information Needs, and Policy Development. An acting chair was selected for each group and they led discussion on these issues and helped to decide tentative directions for the group.

November Meeting – The three subcommittees responded to proposed purpose statements for each and arrived at the following final purpose statements:

1) Policy – The purpose of this subcommittee is to examine current federal, state and local laws, rules, regulations, policies and practices relating to educational services to individuals with Attention Deficit Disorder and to recommend particular laws, rules, regulations, policies and practices that would be appropriately considered for application in Iowa.
2) Research – The primary purpose of this subcommittee is to examine the current data available in Iowa which describes or relates to meeting the educational needs of students with Attention Deficit Disorder. This Iowa database will be integrated with relevant national databases in order to determine future research priorities and current best practice.
3) Information – The purpose of this subcommittee is to develop an information base to be used by various constituencies in Iowa related to Attention Deficit Disorder. Potential need areas include: assessment and identification, intervention strategies, programs and service models, family needs, and coordinated interagency services. In accomplishing this purpose, the group will specify content areas lacking resources in which new product development may be necessary.

The group also discussed the Federal Notice of Inquiry on ADD and the possibility of hosting public forums around Iowa on ADD issues. A final decision on this latter issue was postponed. A report was also given on the CHADD Second Annual Conference.

January Meeting – The three subcommittees met and reviewed progress. The overall group reviewed a proposed outline for

the final report. Further discussion occurred regarding possible public forums and the decision was made to postpone these. Updates were provided for each of the subcommittees.

March Meeting – An outline of possible recommendations emanating from each of the subcommittees was distributed to each member prior to the meeting. At the meeting, the subcommittees discussed the possible recommendations.

Each subcommittee presented their recommendations to the group and discussed the possibility of overlapping some of the recommendations. Also there was discussion of possible areas not covered in the recommendations. In addition assignments were made to committee members to follow-up with the proposed wording of the recommendations.

Each team assigned to work on a specific recommendation was given the following outline to use in preparing the wording of recommendations:

1) What are the issues? (Background)
2) What is the recommendation?
3) Support for recommendation.
4) Impact if adopted.

April Meeting – Various issues on ADD were updated including positions taken by groups such as the AEA Directors of Special Education on ADD. Presentations were made by various members of the Study Group on drafts of the recommendations. The group was divided into small groups to respond to these recommendations. It was decided that additional meeting time may be necessary to get through all of the recommendations.

May Meeting – A parent representative reported on her testimony before Senator Harkin's Subcommittee on Appropriations for Health and Human Services. The group then discussed several other topics, including the implications for Iowa if ADD is viewed under the special education category of "other health impaired", the relationship of ADD to changing definitions of "seriously emotionally disturbed", and the proposed national ADD centers. The committee completed discussion of the drafts of the various recommendations and the "ADD in Perspective" chapter for the final report.

June Meeting – The committee responded to a reorganization of the recommendations. The categories were reorganized and consolidated into: Policy, Research and Information, Staff Development, and General. The Study Group continued discussion of the "ADD in Perspective" chapter, the process for delivering the overall report and the process for preparing and disseminating Awareness and Information Packets.

National and State Policies

Does a diagnosis of attention deficit disorder qualify a student for special education programs and services under Iowa and federal statutes and rules? Does ADD qualify as a handicapping condition under Section 504 of the Rehabilitation Act of 1973? If so, what are the implications for schools? And, what procedural safeguards are afforded students with ADD and their parents?

The time during which this ADD Study Group was working (September 1990-August 1991) was a time of intense study and debate about the policies governing special and regular education services to this population. While changes in this arena appear to be on the horizon, it is the purpose of this section to chronicle educational policy regarding students with attention deficit disorders at the time of the Study Group's work.

State Law and Rules

Iowa's current special education law and administrative rules do not recognize attention deficit disorder as a separate and distinct disability, nor is ADD directly referenced in any of the current definitions of recognized disabilities. As a result, the Department of Education's interpretation has been that the diagnosis of attention deficit disorder by itself is not a sufficient basis for providing special education, and that in order to receive such services, an individual must require special education as identified in the current definitions of the legislated disability categories.

The Department has indicated that all regulations and rules regarding the provision of special education (e.g., procedural safeguards, identification, evaluation and placement, delivery of services) are applicable to this population. In addition, it has noted that a medical diagnosis or a diagnosis of ADD outside of the school setting is not sufficient justification for providing special education. It has also noted that a medical diagnosis or a diagnosis of ADD outside of the school setting cannot be used as a basis for denying access to special education, nor that the provision of special education be made conditional upon a medical diagnosis. It should be noted that the Study Group discussed the adequacy of current state policies and procedures relative to special education and made a recommendation regarding the need to further clarify the services available to these children and their parents.

Federal Legislation and Regulation

Over the last two years, the debate over including students with ADD in special education has intensified. While the disorder is not specifically identified in Federal regulations as a handicapping condition, it is referenced in the Federal definition of specific learning disabilities. Advocates for the inclusion of ADD under special education eligibility have taken a stand similar to that stated by Parker (1990):

> Given the fact that most ADHD children will not meet eligibility requirements for exceptional student education on the basis of having a co-existing handicapping condition as specified in P.L. 94-142, and considering that a recent NIH report described ADHD as a "chronic disorder affecting the child's home, school and community life" whose sufferers are at risk for academic failure, it is essential that children suffering from this disorder be eligible for exceptional student education services.

During the time of the Study Group's efforts, reauthorization of Federal funds for special education (Education of the Handicapped Act, which subsequently be-

came the Individuals with Disabilities Education Act) were delayed as the Senate and House of Representatives heard debate over whether attention deficit disorder should be recognized as a separate handicapping condition. While advocate groups such as CH.A.A.D. (Children with Attention Deficit Disorders) and A.D.D.A. (Attention Deficit Disorders Association) supported the inclusion of ADD as a separate special education category, a variety of professional and educational groups (e.g., Council for Exceptional Children, American Association of School Administrators, National Association of School Psychologists, Council of Chief State School Officers, National School Boards Association) voiced opposition to including ADD as a separate disability category.

While the reauthorization of IDEA did not include ADD as a separate category, two significant elements relative to ADD were included. First, the Congress appropriated funds for the establishment of four centers to begin work in the fall of 1991 to analyze and synthesize the current research and literature on ADD relating to identification, assessment, and intervention. The implementing regulations specified that the products and information of these "clearinghouses" would be accessible and useable to educators, parents, researchers and other professionals. It was also specified that existing clearinghouses and networks (e.g., regional resource centers) would be used to assist in the dissemination of materials developed by the centers.

Secondly, the reauthorization required the Department of Education to prepare a Notice of Inquiry (Federal Register, Doc. 90-28043, November 28, 1990) to solicit input on attention deficit disorders. The questions posed in this inquiry were as follows:

(a) Are children with attention deficit disorder, who by reason thereof require special education and related services, currently being excluded from special education programs conducted under part B? If so, what is the extent of and what are the reasons for such exclusions?

(b) To what extent are children with attention deficit disorder, who by reason thereof require special education and related services, currently being identified within existing disability categories in part B, such as "other health impaired," "seriously emotionally disturbed," or "specific learning disabilities?"

(c) Do children with attention deficit disorder have unique characteristics that are not reflected in the existing disability categories in part B? If so, to what extent do these unique characteristics require separate evaluation criteria, special preparation for instructional and support personnel, and district educational programs and services?

(d) What educational programs and/or services are school districts currently providing to children diagnosed as having attention deficit disorder, either in special education programs conducted under part B or in general education programs?

(e) How should attention deficit disorder be described operationally for purposed of qualifying a child for special education and related services under part B?

(f) What criteria should be included in the definition to qualify children with attention deficit disorder whose disability is comparable in severity to other children with disabilities currently determined to be eligible for special education and related services under part B?

(g) What specific manifestations of attention deficit disorder, if any, should be included in the definition?
(h) Should the definition include references to characteristics or circumstances that produce transient inattentive behaviors that, in and of themselves, would not make a child eligible for special education and related services under the definition of attention deficit disorder.
(i) Should the definition address the concurrence of attention deficit disorder with other disabilities, such as specific learning disabilities or serious emotional disturbance, and if so addressed, how should this be accomplished?
(j) Should guidelines be provided to state and local educational agencies regarding their obligation to conduct an evaluation of a child suspected of having attention deficit disorder? If so, how should these guidelines be described?
(k) Who should be authorized to conduct an assessment of a child having or suspected of having attention deficit disorder, and should the assessment be conducted by more than one individual (such as a teacher and a psychologist)?
(l) What provisions should be included in the definition, and what additional steps, if any, not currently required by the regulations implementing Part B, should be included to ensure that children who are from racial, ethnic, and linguistic minorities are not misclassified under this definition?

At the conclusion of the Study Group's activities, neither the selection of the centers nor the compilation of the Notice of Inquiry were available. However, the Study Group did discuss the implications of both of these efforts. The Study Group discussed the possibility of responding to the Federal Notice of Inquiry, but decided to instead focus on the needs of students with ADD in Iowa. Several members of the Study Group were active with advocacy and professional groups responding to the Notice, and these responses and position statements were shared within the group.

While ADD historically has not been defined as a separate handicapping condition, it should be noted that the March-April 1991 issue of OSERS News Update, a publication of the Federal Office of Special Education and Rehabilitative Services (OSERS) states:

> The Department of Education is committed to ensuring that all children who have a disability and are in need of special education and related services are properly identified and evaluated and receive all the rights and protections that they are entitled to under Part B of the Individuals with Disabilities Education Act (IDEA)...Children with ADD may be considered disabled solely on the basis of this disorder within the other health impaired category in situations where special education and related services are needed because of ADD. In addition, children with ADD may have a concomitant problem such as serious emotional disturbance or learning disabilities and qualify under one of these disability categories (p. 2).

In addition to questions regarding eligibility for special education, there are questions dealing with the eligibility of students with ADD under Section 504 of OCR regulations. The Department of Health and Human Services regulations promulgated pursuant to Section 504 define the term "physical or mental impairment" as including:

(A) any physiological disorder or condition, cosmetic disfigurement, or anatomical loss affecting one or more of the following body systems: neurological; muscular-skeletal; special sense organs; respiratory, including speech organs; cardiovascular; reproductive, digestive, genito-urinary; hemic and lymphatic; skin; and endocrine; or (B) any mental or psychological disorder, such as mental retardation, organic brain syndrome, emotional or mental illness, and specific learning disabilities (45 CFR §84.3 (j) (2) (i) (1989).

It appears that OCR views ADD under the above definition. As stated in the Individuals with Disabilities Education Law Report (Vol. 17, Iss. 14, 5/28/91):

> OCR has consistently ruled that ADD is a condition that subsequently limits major life activity; consequently school-aged children with ADD are "qualified handicapped persons" under the Section 504 implementing regulations...As OCR increases the pressure on local school districts to provide FAPE [Free Appropriate Public Education] to children with ADD, readers should be reminded that, in the absence of similar coverage under the IDEA, school districts will not receive any federal financial assistance toward educating these children (xiv-04).

An example of such an OCR finding is contained in a decision titled Grosseile (MI) Township Schools (17 EHLR 878) in which the ruling states:

> ...OCR has determined that the District discriminates against students who have ADD/ADHD or who are suspected of having ADD/ADHD, and who are not suspected of having a handicap recognized by the IDEA, by not referring them for an evaluation to determine whether, under Section 504, they are handicapped and in need of regular or special education and/or related aides and services.

In summary, from this brief review of state and federal policy, it appears that while ADD is undefined in state and federal regulations as a specific handicapping condition, there is growing recognition of the potential need for special education for at least some individuals with ADD and the need for educational accommodations for probably all of these individuals. Furthermore, there is a growing base of case decisions under Section 504 OCR that uphold the rights of students with ADD to appropriate accommodations within both regular and special education.

The Study Group discussed these directions, but, as noted in the recommendations section of this report, did not recommend the specification of ADD as a separate handicapping condition in Iowa. Perhaps the most critical question repeatedly raised within the study group's discussions was how to avail students with ADD and their parents the procedural protections in securing appropriate consideration of educational needs without further proliferation of special education labels in the process.

Attention Deficit Disorders in Perspective

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While the Iowa Attention Deficit Disorder Study Group has focused on the particular concerns emerging in the state regarding students with attention deficit disorders, it has become apparent that a review of what the professional literature says about students with the disorder was in order. What does research tell us about the characteristics of students described by this label and the most appropriate means by which Iowa educators should approach assessment? Following assessment, what are our options regarding what to do to provide the best interventions for these students and their families? And associated with these interventions, what are the outcomes that the literature reports for students diagnosed as having attention deficit disorders and what are the hopes we have for improving the outcomes with more consistent availability of appropriate interventions?

This broad review of the literature is based on a belief that although there is a need to focus on Iowa's problems and solutions, there is a corresponding need to look beyond the state's resources and use the information available from the best thinking on this topic. The review is provided with the recognition that attention deficit disorder is a complex disorder necessitating a comprehensive analysis, not just simple solutions. The paper reviews current medical, educational, and psychological information about attention deficit disorder with a particular emphasis on the educational aspects of the disorder. Preparation of the paper was undertaken with the recognition that such a review is limited, and cannot possibly capture the richness and
breadth of all the work taking place across the disciplines in regards to this disorder.

Children with attention deficit disorder (ADD) have difficulty regulating and maintaining behavior that is governed by rules and consequences. Therefore they may fail to meet expectations at home, at school, and in the larger community. Their behaviors are frequently misunderstood and a source of frustration to their families, their teachers, and to the children themselves.

ADD is the most common neurologiy-based child behavior disorder. Estiies of prevalence range from 1 to 20% of schoolchildren with the consensus being that anywhere from 3-5% are affected (Barkley, 1990). From 2-10 times as many boys as girls have ADD symptoms (APA, 1987; Ross and Ross, 1982).

Terms, Definitions, and Relationships

Although the term attention deficit disorder only came into being in the 1970s, the child behaviors of inattention, hyperactivity, and impulsivity have probably always existed. In their review, Epstein, Shaywitz, Shaywitz, and Woolston (1991) trace the evolution of ADD from the early 1900s when it was considered a "morbid defect in moral control"; through the 1940s when Strauss and his colleagues postulated that the behaviors were due to brain injury; to the 1950s when the term minimal brain dysfunction (MBD) reflected presumed brain injury from birth trauma or early childhood illness.

Dissatisfaction with the term and concept of MBD led the American Psychiatric Association (APA) to focus on children's activity level in the publication of the Diagnostic and Statistical Manual of Mental Disorders II (APA, 1968) in which the term Hyperkinetic Reaction of Childhood Diagnosis was introduced. Research in the 1970s suggested that hyperactivity was not the most important aspect of the disorder. This led to the development of two diagnostic terms: Attention Deficit Disor-

der with Hyperactivity (ADDwH) and Attention Deficit Disorder without Hyperactivity (ADDwoH) (APA, 1980). Today these terms have further evolved into the classifications of Attention Deficit Hyperactivity Disorder (ADHD), and Undifferentiated Attention Deficit Disorder (APA, 1987). (See appendices A and B). The term attention deficit disorder (ADD) will be used throughout this paper to include both of the terms and concepts used in psychiatric nomenclature.

Barkley (1990) suggests that there is general agreement among medical and clinical practitioners that ADD can be defined as:

> "...a disorder of developmentally inappropriate degrees of inattention, impulsivity, and overactivity which arises in childhood and is relatively chronic throughout adolescence. It appears to have a biological or hereditary predisposition, and has a significant and negative impact on academic and social outcomes for many children. The disorder is not a direct result of gross brain damage, psychosis, or severe/profound mental retardation. These difficulties are typically associated with deficits in rule-governed behavior and in maintaining a consistent pattern of work performance over time." (p. 47)

A recent draft of an educational definition developed by a nationally recognized group of researchers in the field of behavior disorders defines ADD as:

> "...a developmental disorder regarding one or more of the basic cognitive processes related to orienting, focusing or maintaining attention, resulting in a marked degree of inadequate attention to academic and social tasks. The disorder may also include verbal or motor impulsivity and excessive non-task-related activities such as fidgeting or restlessness. The inattentive behavior of ADD most commonly has its onset in early childhood, remains inappropriate for age, and persists throughout development." (PGARD, p. 13)

Relationship of ADD to other disorders

Attention deficit disorders can overlap with various learning and other behavior disorders. The most common of such overlaps are learning disabilities (LD), oppositional defiant disorder (ODD), and conduct disorder (CD). (See appendices C and D).

Learning disabilities. Most studies indicate a relationship between the two though the nature of that relationship is not yet clear. Between nine and 11% of hyperactive boys are also learning disabled (Halpern, Gittelman, Klein, & Rudel, 1984; Shaywitz, 1986), while the prevalence of hyperactivity in LD populations is estimated at 33% (Shaywitz, 1986). According to Epstein and his colleagues (1991), it is necessary to learn more about these relationships in order to design and deliver more effective interventions.

Disruptive behavior disorders as defined by DSM-III-R. Some children have only one of the disruptive behavior disorders, ADD, conduct disorder, or oppositional defiant disorder, but the disorders are more likely to occur in combination. There is tremendous variation in estimates of the number of children in whom both ADHD and serious behavior problems, conduct disorder (CD) or oppositional defiant disorder (ODD) co-exist. In groups of ADD children who are not referred to child psychiatrists, but rather are seen by pedia-

tricians or psychologists, the number is relatively low, about 18% (Loney & Milich, 1982). The same study found that about 71% of ADD children who were referred to psychiatrists or admitted to psychiatric hospitals also exhibited aggressive behavior problems.

Barkley (1991) indicates that about 65% of children with ADD manifest enough oppositional behavior to be considered for a diagnosis of ODD. Some of these children may also demonstrate behaviors indicative of conduct disorder. While about 20 to 30% of elementary-age ADD children also have CD, the range increases to 40 - 50% by adolescence.

The combination of ADD and oppositional disorder or conduct disorder can be a serious one. These children tend to behave very impulsively; without consideration of consequences, they engage in classroom disruption, arguing, non-compliance, verbal or physical threats, fighting, temper outbursts, and antisocial behavior. Some researchers (e.g., Loney, Whaley-Klahn, Kosier, Conboy, 1983) have noted concerns regarding the long-term impact of these behaviors on adult adjustment.

Other psychiatric disorders. Other child psychiatric disorders are not thought to be secondary to ADD (Barkley, 1990). Higher rates of anxiety disorders, and mood or depressive disorders are not commonly seen in groups of children with ADD, although studies do report that it is not unusual for children with ADD to experience periodic feelings of sadness. Older children and adolescents with ADD are more likely to suffer from low self-esteem than their non-ADD peers (Kazdin, 1989).

Behavior Characteristics at Home and School

There is tremendous variation in the behavior of children with ADD. While the core symptoms are in the areas of inattention, impulsivity, and overactivity, a child may have varying manifestations of each of the characteristics and the overall severity may vary to a marked degree. For the purposes of this review, it is important to discuss how symptoms are typically expressed at school and at home.

Inattention

In the classroom, compared to normal peers of the same age and sex, children with ADD are inattentive. That is they have problems staying alert, selecting and focusing on what is important, and sustaining their attention to school tasks. Direct observation studies at school reveal higher rates of "off task" or "not paying attention" behaviors (Luk, 1985). While attentional difficulties can be seen in less structured activities that have frequent activity shifts, such as play (Zentall, 1985), tasks that might be described as mildly boring such as school seatwork, homework, and household chores present the greatest challenge (Milich, Loney & Landau, 1982; Zentall, 1985). As a consequence, teachers and parents describe this group as children who don't listen, don't follow directions, don't finish schoolwork or household chores, and are messy and disorganized. The phrase "in a fog" is a common descriptor (Levine, 1987).

Behavioral disinhibition

Impulsivity and hyperactivity can be characterized as forms of behavioral disinhibition. Operationally defined, this means that many children with ADD will

respond very quickly without waiting for directions and instructions, or waiting to see what is required in a given situation. Mistakes often result. These children may rush through their schoolwork with the foremost goal of finishing and with little thought for accuracy or neatness. Their work is often marred by careless errors such as failing to attend to operation signs in arithmetic. Their work is often sloppy and difficult to make out.

Many children with ADD disrupt or interrupt class by speaking without raising their hands or by blurting out answers. They have a hard time waiting their turns in games or in lines and they may speak without regard to the topic being discussed, or without regard for the feelings of others (Levine, 1987).

At home or at school they have a hard time waiting for upcoming events or privileges. Their parents describe being badgered or pressured for activities or material wants. Levine (1987) describes this as a "steady state wanting." Because they often "leap before they look," they have more accidents, injuries, and accidental poisonings. They may take ill-advised dares from other children (Barkley, 1990).

Overactivity

At school, hyperactivity may be seen as restlessness, fidgetiness, and excess motor or verbal activity. The child with ADD may squirm or be out of his or her seat more than other students, may wander about the classroom, and may have some part of the body in motion even when attending (Luk, 1985). The child may have a hard time matching his or her activity level with that required for a particular school task (Routh, 1983). Activity level transitions such as from active play at recess to quiet studying may prove challenging for the ADD student.

Teachers describe children with ADD as more noisy than others. For instance they may talk more, sing, make humming noises in class, and include too much speech and commentary in social situations (Barkley, Cunningham, & Karlson , 1983; Zentall, 1985).

Other descriptors

The failure to self-monitor one's own behavior may lead to problems in many situations. Levine (1987) describes these students as unaware of themselves, their actions, or their effect on others. They have trouble integrating verbal and non-verbal feedback from their friends, parents, and teachers in order to make necessary adjustments in their own behavior.

One of the most frustrating aspects of ADD at school is the extreme variability the student may present from day to day or even hour to hour. Individual students may vary tremendously in their work accuracy, test performance, behavior control, or home chore performance. Teachers tend to expect students to be able to deliver consistent performance and may attribute inconsistency to a lack of effort or motivation (Barkley, 1990).

Some ADD children have problems forming satisfactory relationships with other children. While non-hyperactive children with ADD are frequently described as inept, shy, withdrawn, and unpopular, hyperactive children are more likely to be actively rejected by others (Guevremont, 1990).

Even when a child is not strikingly overactive, ADD can present serious problems for the child at school. In fact, Laney and his colleagues (1988) found that teachers rated such boys as exhibiting poor school performance. According to Edelbrock and Costello (1984), teachers described the non-hyperactive ADD children as confused,

daydreamy, lost in thought, apathetic, or lethargic. Furthermore, about 72% of the non-hyperactive ADD boys had been retained compared to only about 17% of the ADD boys who were also hyperactive.

Assessment

Who decides if a child has ADD? Historically, the evaluation and diagnosis of this disorder has been made by a physician or psychologist outside of the educational setting. Most recently, however, professionals and parents have come to recognize the need for cooperative efforts in meeting the needs of children with ADD, and in addressing their unique educational needs. Increasing numbers of school personnel are becoming involved in the assessment of ADD within the school setting (PGARD, 1991). This section first discusses the medical or clinical model of evaluation diagnosis that is used with ADD, and then explores assessment and evaluation of ADD in the educational context.

Clinical assessment

Typically clinical assessments are comprehensive and multi-modal, involve input from both home and school, and include a combination of subjective professional opinion and objective assessment (Parker, 1990; Barkley, 1989; Brown and Borden, 1986). A comprehensive assessment includes an evaluation of the individual's medical, psychological, educational and behavioral functioning (Shapiro and Garfinkel, 1986). Parker indicates that where ADD is combined with other psychiatric or psychological disturbances, it is important to determine the relative contribution of each and how they influence each other in order to plan for effective intervention. This becomes increasingly important in later school years when core symptoms of ADD may be less apparent, and school, behavioral, and emotional factors play a more prominent role.

Health history and physical examination. The diagnosis of ADD depends on obtaining a thorough developmental and health history. The developmental history and the teacher's anecdotal report and ratings about academic and behavior problems in the classroom are probably the most important tools in the evaluation for ADD.

Typically, the child with ADD is reported to have been alert, active, and demanding as a baby with intense emotional responses and feeding and sleeping difficulties in the early months. A history of colic is commonly reported. Developmental milestones are usually normal. As toddlers, many of these children are described as having been constantly intrusive and demanding and needing close supervision. The parent interview can help gain an understanding of the environment and the match between the child's behavior and family expectations.

School age children are described as inattentive, impulsive, and distractible. It is important to get information from teachers regarding the child's behavior while in the school classroom. School behavior rating scales provide a standardized, written assessment of the child's behavior and serve as a baseline for comparison when interventions are introduced (Adesman & Wender, 1991). If problem behaviors are reported by a number of different observers, started in early childhood, and have been present for more than six months, it is more likely the child has ADD.

Physical examination does not generally contribute to the diagnosis, but may be necessary in excluding other medical

conditions. The physical examination in children with ADD is typically normal. CAT (computerized axial tomography) scanning and EEG (electroencephalogram) are not of benefit in diagnosing or treating ADD and should only be done when seizures or neurologic findings are suggested by history and physical examination. Recent medical research (Zametkin, A. J., et. al., 1990), however, has the potential of leading to a definitive test for the disorder. The research has isolated a specific brain abnormality that may explain ADD and provide a basis for justifying the use of medication in treatment.

The evaluation for ADD must rule out conditions that may produce symptoms similar to ADD. These conditions include systemic medical illness; learning disabilities; possible medication effects (e.g. bronchodilators, anticonvulsants, decongestants); anxiety due to social and emotional factors (e.g. child abuse/neglect, sexual abuse, parental divorce); sensory impairments (e.g. vision, hearing); classroom-student mismatch; seizure activity; and environmental toxins (e.g. lead poisoning) (Faye & Sulkes, 1990).

Cognitive and educational tests. Clinical and school psychologists often use intelligence tests to evaluate cognitive functioning as well as to gather information on components thought to underlie the acquisition of complex achievement skills (Margolin, 1978). Such information can help in deciding if the child may have a significant learning disability. In addition, subtests of some intelligence tests are thought to measure aspects of concentration and attention (Kaufman, 1980).

It is also important to evaluate a student's current academic skills. Learning problems may lead to behaviors that may look like ADD, such as poor attention or failure to complete school tasks, but these behaviors may be a function of inadequate educational programming. Because of the correlation between learning disabilities and ADD, sorting each out can be difficult.

Other clinical data often include specific laboratory measures of sustained attention, impulsivity, and activity level. Most of these cannot be recommended because of poor standardization, limited normative data, or lack of information on their psychometric properties. Other limitations of laboratory tests include lack of information about the antecedents and consequences of an individual's behavior and the limited usefulness of the results in developing management and intervention plans (Barkley, 1990).

Educational assessment

Educators often find information from clinical assessment less than helpful in planning school interventions for two reasons. Clinical diagnosis is based on DSM-III-R standards and does not specify whether the ADD has an impact on the child's educational performance and, if so, the extent of the impact. It is not enough to know that a child has ADD. One needs to know if the manifestations in the classroom are severe enough to require modifications or special services. Additionally, in order to design an effective school program and intervention strategies for such a student, one needs specific information about student behavioral deficits and excesses in the school setting. One advantage of school-based assessment is that it can evaluate the significance of a child's ADD and gather information on specific child behaviors that lead directly to intervention planning at the same time and in the same setting (PGARD, 1991).

Meents (1989) acknowledges the importance of behavior rating scales in the

identification of ADD. Meents notes, however, that the scales have typically been designed to meet the DSM criteria. Most studies of rating scales have been more concerned with identification and classification than with remediating the symptoms at school. The focus of most scales is on behavior rather than on academic achievement and production or success as a student.

Parents and teachers often fill out behavior rating scales which are used in providing information about the child's home and school behavior that can be compared to norms based on age or grade levels. This information can be useful in diagnosis as well as assessing the effects of treatment interventions. Rating scales are easy to use, inexpensive, and can provide useful information about the child's functioning in different settings or under different task demands. Barkley (1990) cautions that rating scales are only the quantifications of opinion and subject to the same biases as are any opinions of people.

Behavioral observation in natural settings such as the classroom, lunchroom, and playground can provide information about the extent of a student's ADD-related difficulty at school, information about the antecedents and consequences of behavior, structure variables, and effectiveness of programming interventions. Various recording codes have been developed for this purpose (Jacob, O'Leary, & Rosenblad, 1978; Abikoff, Gittelman-Klein, & Klein, 1977).

O'Brien and Obrzut (1986) suggest that school personnel develop rating scales and observation systems that compare children in different kinds of classroom settings, free play, and structured play situations, and across tasks of a simple to complex nature.

The Professional Group on ADD and Related Disorders [PGARD] (1991) has proposed a two-tiered evaluation system based on their proposed educational definition of ADD. The two-tiered system would combine many of the elements of a clinical evaluation with an assessment of the educational relevance of the ADD symptoms to the student in the educational setting. The group describes the process as follows:

> "First, the Tier 1 evaluation is designed to confirm by history the existence and presenting manifestations of ADD through the reports of those most familiar with the child, such as parents and regular education teachers. Second, the Tier 2 evaluation is designed to objectively document the presence and extent of the academic impairment due to specific ADD-related behaviors in school."
> (p. 23)

While assessment within the school setting can incorporate many of the techniques used in a clinical setting in terms of cognitive and academic measures as well as measures geared toward the assessment of attention, impulsivity, and hyperactivity, the assessment of ADD within the school setting should take a problem-solving approach to gain information about the specific behaviors of concern in order to generate intervention strategies and evaluate the effectiveness of the interventions. A problem-solving approach has been described as

> "...a process that places primary emphasis on identifying and solving students' educational and adjustment difficulties. The process begins with a focus on the presenting problem, not on the question of whether certain characteristics of the student match the criteria for special education placement and eligibility. The approach is a systematic

process emphasizing problem identification, clarification and analysis; intervention design and implementation; and, on-going monitoring and evaluation of intervention effects. The process is data-oriented and provides specific decision-making points. Assessment is not solely eligibility-oriented, but provides answers to questions." (Iowa Department of Education, Feb. 1990, p. 2)

Management and Interventions

As ADD is part of the child and is expressed in all aspects of his or her life, the most effective interventions will occur across all the child's settings: school, home, and the community; and will be individualized to address the unique combination of behavioral concerns that exist in a particular student.

Medication

Treatment with central nervous system stimulants (CNS) has been the most common treatment for children with ADD for twenty years. Numerous studies have shown that CNS stimulants improve the classroom functioning of children with ADD as shown by decreases in observed disruptive behavior, increases in academic productivity and accuracy, and improvement in teacher ratings (Cantwell & Carlson, 1978; Gittelman & Kanner, 1986; Pelham, et al, 1985, 1990). The CNS stimulants have also been shown to improve performance of children with ADD on a variety of cognitive tasks including measures of attention, learning, and memory (Pelham, Greenslade, Hamilton, Murphy, et al, 1990).

While short term learning and behavioral gains with medication can be impressive, there is little information that long term learning, as assessed by school-work and achievement tests is enhanced by stimulant medication alone. Neither do long term studies of peer relations show change in popularity, or a change in behavior competency in unstructured situations. In their review Jacobvitz, Sproufe, Stewart, and Leffert (1990) conclude that this may be due to problems of measurement, dosage treatment compliance, and so on. They caution that medication should be used within a broader treatment approach.

A favorable response to stimulant medication does not necessarily confirm a clinical diagnosis of ADD. Children without ADD may also exhibit improvement in attention and concentration if they are placed on stimulants. About 20% of children with ADD may not respond well to stimulant medication. In general, more than 75% of school age children with ADD respond favorably to treatment with stimulant medication (Barkley, 1977).

The age range benefitting from stimulant medication is longer than once thought, including adolescents and even young adults. Treatment with stimulants may be continued as long as the clinical need exists, the medication continues to be effective, and there are no significant adverse effects (Adesman & Wender, 1991). Annual follow-up of the child's status and need for medication is recommended. This usually requires a trial off medication when the school routine is well established.

The most commonly used medications to treat ADD are methylphenidate (Ritalin), dextroamphetamine (Dexedrine), and pemoline (Cylert). Methylphenidate and pemoline are not approved by the FDA for children under six years of age. Dextroamphetamine is not approved by the FDA for children below three years of age.

Tricyclic antidepressants (Tofranil, Norpramin) have recently been used to treat ADD in children who cannot tolerate or do

not respond to stimulant medications. They are not approved by the FDA for treatment of children with ADD under the age of twelve.

Medication does not cure ADD and should never be used as an isolated treatment. Proper classroom placement, behavior modification programs, counseling, and provision of structure are also necessary.

Serious side effects from medication are uncommon. The most common side effects of stimulant medications are decreased appetite, difficulty falling asleep, headaches, and stomachaches. Behavioral side effects include mild irritability, drowsiness, or social withdrawal. Motor tics are rare but may develop in children with a predisposition to this disorder. A careful family history regarding the presence of tics or Tourette's syndrome or a predisposition to this disorder is necessary before children are placed on stimulant medication.

Teachers and school personnel play an important role in the follow-up of children placed on medication for treatment of ADD. Follow-up school behavior rating scales can provide valuable feedback regarding the child's behavior while on medication. This can be extremely helpful in assisting the physician to determine the most beneficial dosage (Barkley & Murphy, 1991).

Interventions within the home

Managing the ADD child's home behavior is often the most challenging aspect of the parent's role in providing for the child. Parents often feel a great deal of stress surrounding the child's home and school behavior. They identify noncompliance, sibling conflicts, overactivity, and disorganization among their chief complaints (Cunningham, 1990).

Parent education is widely thought of as an effective way to assist parents in providing appropriate interventions at home. The most often used program is that developed by Barkley (1987), which is similar in approach to earlier programs (Patterson, 1982; Forehand and McMahon, 1981). Goals of parent education are to provide the parents with current knowledge about ADD, to develop expectations for the child that he or she can meet, and to alter the way they interact with the child to maximize his or her adjustment. Parent education can provide parents with specific behavior management skills for dealing with disruptive and noncompliant behavior. Parental distress can be lessened and feelings of competence improved by providing parents with coping skills through educational efforts (Barkley, 1987a). The few studies of the impact of parent education that have been done indicate that such programs may significantly improve parental perceptions of child behavior and their confidence in their ability to parent and decrease noncompliance and aggressiveness in their children (Pisterman, McGrath, Firestone, & Goodman, 1989; Pollard, Ward, & Barkley, 1983).

Management at school

When adults who were hyperactive as children reassess their school experiences, many report that a teacher's caring attitude, encouragement, extra attention and guidance were "turning points" (Weiss & Hectmann, 1986). This section examines the educational management of ADD students with the goal of achieving the outcome reflected in the previous sentence. What are the goals of educational programming and modifications for these students? In what educational settings are the students served? What interventions and management strategies are effective

with ADD students?

Probably the most important element in designing school programs for these learners is to recognize that an effective instructional program will address the individual student's observed individual behavioral and academic needs, rather than attempting to design one based on the presumed characteristics of the group. Effective management programs directly target areas in which improvement is desired, such as academic skills and output, classroom behavior, or social skills. The goal of educational management of ADD must be to maximize the child's likelihood for success, not cure the condition (Barkley, 1990).

In what school settings are ADD students found? Unless a student's behavior is so disruptive that it interferes with his or her ability to make satisfactory academic or social progress, or his or her learning problems are severe enough that he or she requires special education, the child's educational placement in Iowa is usually in the regular classroom. As ADD can coexist with any other handicapping condition, these students are often found in special education programs from resource programs to self-contained special classes. Pfiffner and Barkley (1990) believe that most children with ADD can meet the requirement of the regular classroom with only minor modifications while a smaller number, those with more severe ADD symptoms, or those students who have accompanying learning problems or oppositional or aggressive behavior may require alternative educational placements.

What do we know about effective interventions at school? Regardless of the program placement, it seems logical that these learners may benefit from interventions in the following areas: information about ADD; teacher and peer administered consequences; teacher administered behavioral interventions; cognitive-behavioral interventions; teacher designed modifications to the classroom, academic tasks and environment; and school/home cooperative consequences.

Information about ADD. Learning more about their particular kind of attentional problems is what Levine (1987) calls "demystifying the problem." When children develop some insight into the situations where they are most and least successful, they can participate in planning strategies for improvement with their teachers and support personnel.

Teacher administered behavioral intervention strategies. These include methods such as systematic praise, positive teacher attention, and planned ignoring (O'Leary & O'Leary, 1977). These approaches are not sufficient by themselves. Children with ADD have a diminished response to consequences in general (Wender, 1971), may have an elevated reward threshold (Douglas, 1985), and do better on a continuous reinforcement schedule (Douglas & Parry, 1983).

Children with ADD frequently do better with backup consequences or token reinforcement systems (Pfiffner, Rosen, & O'Leary, 1985), and they may function best with a combination of positive programming and negative consequences such as ignoring (Pfiffner & O'Leary, 1987), prudent reprimands (Rosen, 1984), response cost (Rapport, Murphy, & Bailey, 1982), or time out with procedural safeguards (Gast & Nelson, 1971).

Studies have shown significant effects of teacher-directed behavior therapy on ADD children's off-task behavior, inattention, distractibility, academic performance, hyperactive motor behaviors, and on teacher ratings of conduct problems in the classroom (Pelham, 1987).

Cognitive behavior management (CBM). CBM attempts to directly treat the impulsive, disorganized, unreflective manner in which many ADD children approach tasks. It focuses on moving the student from reliance on outside controls to the development of self control (Barkley, 1990). It helps the student to develop generic cognitive strategies for solving academic, cognitive and social challenges. Moore and Hughes (1988) describe two general approaches. The first is one of a simple response delay where the child cues himself to slow down. The second is a more comprehensive approach and involves self-instruction training (Meichenbaum & Goodman, 1971), training in problem solving (Kendall & Braswell, 1984), behavior management contingencies, modeling, role playing, and attribution retraining (Dweck and Elliott, 1983). Whalen and Henker (1987) consider CBM as "standard educational and behavior therapy with a cognitive overlay."

While CBM intuitively holds promise, there is not yet evidence of long-term gains that transfer across situations (Abikoff, 1985). Negative results to this point may be because much of the training has been too specific, a poor match for a child's developmental level or interests, or poorly suited to the child's particular problems. It is clear that there must be planning for generalization and maintenance.

To address social deficits, many educational programs for ADD children included an emphasis on direct instruction in social skills training or structured learning (Goldstein, Sprafkin, Gershaw & Klein, 1980; McGinnis & Goldstein, 1984; McGinnis, 1990). Students receive direct instruction in alternate social behavior in small groups, practice the behaviors, receive feedback from the group, and attempt to transfer the new behaviors to other settings in the school or community. Social skills training is often combined with cognitive behavior treatment with the aim of teaching the student to inhibit his or her impulsive and/or ineffective response; and to replace it with the new prosocial behavior.

Teacher directed classroom, task and environmental modifications. Such modifications may include setting individualized expectations for assignments, remediating existing academic skills deficits, considering how the child best learns, and how he/she can most effectively show mastery of learning. Children may need modification of learning task difficulty and/or length.

Other classroom modifications include varying structure and predictability, picking up the pace of instruction and requests for responding, providing novelty, as well as adjusting the amount of unnecessary stimulation the student receives depending on student needs (Zentall, 1985). In a review of direct observation studies Luk (1985) stresses the variability of children's responses to such classroom and environmental modifications.

True individualization seems to be the key to arriving at appropriate programs for students with ADD. While most children with ADD are learning, their problem is with demonstrating such learning through traditional assignments and tests, which do not take into account their individual needs.

One promising way of addressing individual needs is with computer technology. Computers can be used to vary task presentation, rate, and increase active involvement as well as directly address self-control skills such as impulse control and problem solving (Fick, Fitzgerald, & Milich, 1984; CEC, 1990).

School report/home-based contingencies. School reports with home-based contingencies provide rewards at home based on a teacher's report of the child's school behavior on academic and social/ behavioral targets. Notes or point sheets are sent home on a daily basis (Barkley, 1990).

In summary, while effective educational management for these students may vary widely depending on an individual student's needs, the educational intervention and management plan will be an integrated plan of action that may be combined with home intervention as well as medical management.

Controversial therapies

Chronic conditions such as ADD, that are not simply treated, often stimulate the development of novel therapies that present broad claims of effectiveness and global remedies. Usually these methods of treatment are controversial. Controversial therapies have been defined operationally by certain shared characteristics:

[1] The theories on which these therapies are based are novel and not completely consistent with modern scientific knowledge.
[2] The new treatment is presented as being effective for a broad range of problems that are often not rigorously defined.
[3] Since treatment usually relies on the use of "natural" substances (such as vitamins, diet, or exercise), it is stated that there is no possibility of adverse effects.
[4] The initial presentation is often in a medium other than a peer-reviewed scientific journal.
[5] Controlled studies that do not support the treatment are discounted as being improperly performed or biased because of the unwillingness of the medical establishment to accept novel ideas.
[6] Lay organizations develop and support the use of the treatment and become socially active in attempting to develop special interest legislation and regulations (Golden, 1984).

Diet therapy. The best known diet therapy is the Feingold Diet. The Feingold hypothesis states that certain food additives and coloring produce a syndrome of learning disability and hyperactivity in susceptible children (Feingold, 1975).

There is little evidence to support the use of dietary treatment for ADD (Harner, 1980; Weiss, 1980; Holborow, Elhins, & Berry, 1981; Silver, 1986). Five to ten percent of affected children may respond to diets low in food additives and coloring, but even for these children it is not clear that such treatment is superior to more conventional approaches (Foreman, Kirschbaum, Hetznecker, & Dun, 1987). Diets having many restrictions can create psychosocial strains on an already stressed family and can be difficult, if not impossible, to enforce once a child reaches school age.

Concerns about the relationship of sugar and ADD have received much publicity. After examining all available scientific data, the Food and Drug Administration's Sugars Task Force concluded in 1986 that there is no evidence that sugar consumption causes behavioral changes in normal children and adults.

Megavitamin therapy. The concept of genetotrophic disease states that there are individuals who have a genetic abnormality that produces a requirement for specific nutrients greater than that required by the general population. This provides the basis for megavitamin therapy and

orthomolecular mineral therapy.

There is no rigorously obtained evidence that megavitamin therapy or supplementary minerals are of any use in treatment of ADD (Golden, 1984). The high dosages of vitamins prescribed in megavitamin therapy do have the potential for producing more or less severe side effects, and the risk of toxicity of large doses taken for long periods of time is unknown.

Allergic tension – fatigue syndrome. In 1954, Speer introduced the concept of the allergic tension – fatigue syndrome to group together a number of diverse behavioral symptoms that were postulated to be due to allergy. Treatment with elimination diets and desensitization is used. There are no strictly controlled studies in peer-reviewed medical journals to support this hypothesis (Golden, 1984).

It is important that controversial therapies not divert the child and family from more traditional and better documented methods of therapy. In looking at controversial therapies for ADD, potential for harm must be considered, no matter how innocuous the treatment may seem. All therapies must be critically analyzed to define both usefulness and potential for harm.

Outcome

What happens to children with ADD as they grow older? Weiss and Hechtman (1986) indicated that the core features of ADD, that is restlessness, attentional difficulties and impulsivity, are present to varying degrees from infancy through adult life. Kramer (1987), in summarizing the self-reports of adolescents with ADD, noted that while the adolescents reported the core features to be less of a problem, difficulties in school performance, social skills and relationships were major concerns. While the adolescents reported that they consume more alcohol and non-prescription drugs, there is not more alcoholism or drug abuse in the group than the general population. Not surprisingly, adolescents with ADD appear to have low self esteem, social skill deficits, and more impulsive behaviors. Loney, et al. (1983) reported that, as adults, 1/3 to 1/2 of the individuals with ADD seem to have outgrown the problem. The remainder, however, continue to have some ongoing manifestations of the core symptoms.

As is true in many areas of child behavior, it is quite difficult to make accurate and reliable predictions regarding the long-term adjustment of persons manifesting ADD. This is complicated by the fact that many of the adults in these studies may not have received those interventions which we now view as important to increasing the likelihood of their success as adults. These studies may also fail to focus on those motivational factors that can help an individual overcome what Thomas Szazz (1974) has described as "problems in living." These studies may also fail to highlight the complexity and interaction of individual characteristics and environmental circumstances contributing to outcomes for persons with ADD.

As noted by Barkley (1990):

> "In general, no single childhood factor is likely to be much use in predicting the adult adjustment of ADHD individuals. However, the combination of child cognitive ability (intelligence) and emotional stability (aggression, low frustration tolerance, greater emotionality) with family environment (mental health of family members, SES [socioeconomic status], emotional climate of home) and child-rearing practices provides for considerably more successful prediction of adult outcome. As Whalen

and Henker (1980), among others (Paternite & Loney, 1980), noted a decade ago, both the current childhood adjustment and the long-term outcome of ADHD children result from the interplay of the child's characteristics with the social ecological context. Focusing on either of these to the exclusion of the other, as in family functioning on the one hand or degree of childhood ADD on the other, is unlikely to prove useful in predicting the adult adjustment of ADHD individuals." (p. 128)

APPENDIX A

Diagnostic Criteria for Attention-Deficit Hyperactivity Disorder

A. A disturbance of at least six months during which at least eight of the following are present:

(1) often fidgets with hands or feet or squirms in seat (in adolescence, maybe limited to subjective feelings of restlessness).
(2) has difficulty remaining seated when required to do so.
(3) is easily distracted by extraneous stimuli.
(4) has difficulty awaiting turn in games or group situations.
(5) often blurts out answers to questions before they have been completed.
(6) has difficulty following through on instructions from others (not due to oppositional behavior or failure of comprehension), e.g. fails to finish chores.
(7) has difficulty sustaining attention in tasks or play activities.
(8) often shifts from one uncompleted activity to another.
(9) has difficulty playing quietly.
(10) often talks excessively.
(11) often interrupts or intrudes on others, e.g., butts into other children's games.
(12) often does not seem to listen to what is being said to him or her.
(13) often loses things necessary for tasks or activities at school or at home (e.g. toys, pencils, books, assignments).
(14) often engages in physically dangerous activities without considering possible consequences (not for purpose of thrill-seeking), e.g., runs into street without looking

Note: The above items are listed in descending order of discriminating power based on the data from a national field trial of the DSM-III-R criteria for Disruptive Behavior Disorders.

B. Onset before age seven.

C. Does not meet criteria for a Pervasive Developmental Disorder.

American Psychiatric Association (1987). **Diagnostic and Statistical Manual of Mental Disorders, III-R** (3rd edition, revised). Washington, DC: Author. pp. 52-53.

APPENDIX B

Diagnostic Criteria for Undifferentiated Attention Deficit Disorder

This is a residual category for disturbances in which the predominant feature is the persistence of developmentally inappropriate and marked inattention that is not a symptom of another disorder, such as Mental Retardation or Attention Deficit Hyperactivity Disorder, or of a chaotic or disorganized environment. Some of the disturbances that in DSM-III would have been categorized as Attention Deficit Disorder without Hyperactivity would be included in this category. Research is necessary to determine if this is a valid diagnostic category and, if so, how it should be defined.

American Psychiatric Association (1987). **Diagnostic and Statistical Manual of Mental Disorders, III-R** (3rd edition, revised). Washington, DC: Author. p. 95.

APPENDIX C

Diagnostic Criteria for Conduct Disorder

A. A disturbance of conduct lasting at least six months during which at least three of the following have been present:

(1) has stolen without confrontation of a victim on more than one occasion (including forgery).
(2) has run away from home overnight at least twice while living in parental or parental surrogate home (or once without returning).
(3) often lies (other than to avoid physical or sexual abuse).
(4) has deliberately engaged in fire setting.
(5) is often truant from school (for older persons, absent from work).
(6) has broken into someone else's house, building, or car.
(7) has deliberately destroyed other's property (other than by firesetting).
(8) has been physically cruel to animals.
(9) has forced someone into sexual activity with him or her.
(10) has used a weapon in more than one fight.
(11) often initiates physical fights.
(12) has stolen with confrontation of a victim (e.g. mugging, extortion purse snatching, armed robbery).
(13) has been physically cruel to people.

B. If 18 or older does not meet criteria for Antisocial Personality Disorder.

American Psychiatric Association (1987). **Diagnostic and Statistical Manual of Mental Disorders, III-R** (3rd edition, revised). Washington, DC: Author. pp. 55.

APPENDIX D

Diagnostic Criteria for Oppositional Defiant Disorder

A. A disturbance of at least six months during which at least five of the following are present:

(1) often loses temper.
(2) often argues with adults.
(3) often actively defies or refuses adult requests or rules, e.g., refuses to do chores at home.
(4) often deliberately does things that annoy other people, e.g. grabs other children's hats.
(5) often blames otners for his or her own mistakes.
(6) is often touchy or easily annoyed by others.
(7) is often angry and resentful.
(8) is often spiteful or vindictive.
(9) often swears or uses obscene language.

B. Does not meet criteria for Conduct Disorder, and does not occur exclusively within the course of a psychotic disorder, Dysthymia, or a Major Depressive Disorder.

American Psychiatric Association (1987). **Diagnostic and Statistical Manual of Mental Disorders, III-R** (3rd edition, revised). Washington, DC: Author. pp. 57-58.

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Recommendations

Introduction

As the development of the recommendations progressed, it became apparent to the Study Group that the recommendations naturally clustered into several major categories or themes. As a result, the recommendations are presented in the three broad categories of Policy; Research and Information; and Staff Development. Each of the major categories of recommendations is preceded by a background statement and closes with a statement of potential impact. In addition, each recommendation is followed by a brief rationale statement. These recommendations are not presented in priority.

Policy

Background

ADD is a complex disorder that impacts all of the schools in Iowa. It is estimated that approximately 3 to 5% of the school-aged population in the United States has ADD. While not all these students require special education, they do challenge the schools to recognize their unique educational needs and the need for modifications to the regular education program. In addition, while current Federal legislation and regulations on the education of handicapped students do not specifically identify ADD as an independent handicapping condition, ADD has been recognized as a qualified handicapping condition under Section 504 of the Rehabilitation Act of 1973 (see National and State Policies). As a result, the unique educational needs of these individuals must be addressed by the schools. The Study Group believes that one avenue for promoting appropriate responses to the needs of the ADD population is for the state to implement policies that support and facilitate such action.

Recommendations and Rationales

1) It is recommended that the Department of Education **develop a position statement** that acknowledges attention deficit disorder as a condition that can have significant educational implications and that clearly articulates the following:

(a) Schools are responsible for meeting the educational needs of all students, and therefore are responsible for accommodating the unique learning needs and abilities of individuals with attention deficit disorder. Cooperative efforts of general and special education personnel in responding to the needs of this population are critical to successfully meeting the challenges these students present to the educational community.

(b) A diagnosis of the need for special education is not a prerequisite for a student to receive an educational program that is appropriate to his or her abilities and needs, a position that is consistent with the Department's Renewed Service Delivery System initiative. Some students with attention deficit disorder do in fact require special education, and as a result they should be provided the appropriate programs and services. The Department has indicated that students with attention deficit disorder who require special education can be served under existing legislation and administrative rules, but has not presented this position in written policy. The Department needs to clearly describe and communicate to parents, school district personnel and AEA personnel the manner in which this can be accomplished.

The State Board of Education should adopt the position statement to reflect the State's commitment and the education community's responsibility for meeting the needs of students with ADD.

The Department of Education should broadly disseminate the Board adopted position to administrators and service providers in education, health and mental health, and to other interested and involved constituencies.

The Department of Education needs to take a leadership role in responding to the needs of students with ADD. The development and distribution of a position statement clearly establishing the expectations and role of the educational system in meeting the needs of students with ADD is a significant step in this regard.

2) It is recommended that the Bureau of Special Education conduct an objective **review of the definitions and criteria** of the existing disability categories to determine any changes that need to be made to the **Iowa Administrative Code** in order to assure that students with attention deficit disorder who require special education are in fact accommodated in the definitions and respective eligibility criteria. The Department needs to pursue amending the state's administrative code if the Bureau identifies any needed changes to definitions and criteria.

There is a concern that the state's current disability categories and corresponding definitions and criteria may not include all students with ADD who require special education. An objective review of current definitions and corresponding criteria would identify whether such a circumstance existed and whether any corrective action needs to be considered.

3) It is recommended that the Iowa Board of Educational Examiners require that information about ADD, including general information, evaluation practices, and appropriate interventions, be included as a **component of preservice training for all school administrators, teachers and support staff.**

In order to sustain the educational systems effort in meeting the educational needs of students with ADD, it is important that individuals entering the field of education have an understanding of the condition and its educational implications, and the skills necessary to conduct appropriate assessment activities and to implement appropriate interventions.

4) It is recommended that the Iowa Board of Educational Examiners require that information regarding ADD, including general information, evaluation practices, and appropriate interventions, be included as a **component of license renewal for all school administrators, teachers and support staff** currently serving in the public schools.

In an effort to prepare the current staff of the educational system to meet the needs of students with ADD, and to assure that the information base and skills of school personnel are periodically updated in the area of ADD, it is important that the licensure system of the educational system require information about ADD be included in license renewal for administrative, instructional and support personnel.

5) It is recommended that the boards or agencies governing the **certification and licensure of health and mental health providers** advocate for the inclusion of information regarding ADD, including general information, evaluation practices, and appropriate interventions, in

preservice training.

Since a comprehensive treatment plan for ADD may extend beyond the school setting, the inclusion of information about ADD in the licensure and certification requirements of health and mental health providers is an appropriate and necessary ingredient in developing a coordinated and integrated response to the needs of students with ADD.

6) It is recommended that the Department of Education continue the work of the ADD Study Group by **creating an Advisory Committee** with representation from the current group to facilitate and support the implementation of the group's recommendations. Membership will include parents, educators, representatives of the health and mental health professions, and legislators.

As a result of the commitment and research as well as the interest and collective qualifications of the members of the Study Group, it seems imperative that some members of this group continue in an advisory capacity to the Department of Education. This would insure continuity and also assure that the purpose and goals of the Study Group would be interpreted with the intent developed by the group. An advisory committee brings together in a structured format a variety of persons representing different perspectives on meeting the educational needs of students with ADD.

7) It is recommended that the Department of Education initiate communication with other state level agencies to **establish needed interagency efforts** aimed at improving services for students with ADD and their families, and that each area education agency initiate similar efforts at the local level.

Building comprehensive support structures for our schools for meeting the needs of students with ADD and their families requires a multidisciplinary and multiagency approach. Such an approach increases the chances of developing a truly holistic model for serving these students and their families.

Potential Impact

The policy directions of the Department of Education and other state-level agencies impacts direct services for students with ADD. The foregoing policy recommendations would allow students with ADD to more likely reach their potential. The cost to society is much less if these students are helped at an early age before life-long negative behavior patterns set in as a result of school problems and poor self-esteem. As stated in a report prepared by the Interagency Committee on Learning Disabilities, "Educational management represents an important priority and often forms the cornerstone for all other therapies."

The recommendations dealing with licensure and certification, if implemented, would at least increase the awareness level of general and special education personnel and the providers of health and mental health services about ADD and its impact on individuals and families. The most desirable outcome of these recommendations is that educators would be better equipped to respond to the needs of students with ADD whether in a regular education environment, a special education environment or both, and that health and mental health providers also would be bet-

ter prepared to respond to the needs of individuals with ADD and their families.

Research and Information

Background

While there exists a wealth of information regarding best practices for individuals with ADD, there does not seem to be a cohesive, consolidated research database from which this information could be applied. This includes information generally relevant to planning and developing programs and services for these students and a database specific to Iowa that provides information on students, their families and professionals. The wealth of information which exists regarding ADD is multidisciplinary in nature and covers not only educational services, but medical, family, and community services. The conditions which have stood in the way of the development of such a database have been: (1) the fact that the information available is multidisciplinary which results in multiple perspectives that are artificially separated; (2) the naturally-occurring differences across disciplines, such as jargon, different definitions of the disorder, and the site of practice whether that be the school, home, hospital, or clinic; (3) the lack of comprehensive collaborative efforts across disciplines or agencies; and (4) the misinformation and myths regarding ADD that exist and make it difficult to separate fact from fiction.

Recommendations and Rationales

8) It is recommended that the Departments of Education, Human Services, and Health **develop a resource document** that will be an integrated multidisciplinary practical database. The database will include current best practice in evaluation and intervention with ADD. While being specific to the educational setting, it will also take other contexts, such as family context and the health context, into consideration. This database will have a common language and definition base and include empirically proven or time proven practices. The database will be routinely updated to reflect new developments and emerging practices. The information may be presented in the form of a printed document or computer software.

> Information regarding ADD is increasing at a rapid rate. In addition, the need to develop a structure for providing a similar base of information to professionals, parents and students regardless of where they reside in the state is a necessity if improved services for students and families is the goal. A more uniform and current information base, and an information base that is readily accessible regardless of an individual's geographical location is the intent of this recommendation.

9) It is recommended that the Department of Education **establish a clearinghouse** for ADD. This center should be in a position to coordinate information distribution with area education agencies and appropriate regional and local health and mental health agencies. The focus of information to be gathered and disseminated by the clearinghouse will include, but is not limited to: (1) assessment techniques, instruments and strategies used for identification, evaluation and measurement of progress; (2) knowledge and skill competencies needed by professionals providing special and regular education and related services; (3) environmental, organizational, resource and other conditions necessary for effective professional practice; (4) developmental and learning character-

istics; (5) instructional and learning strategies, techniques and activities; (6) curriculum and instructional tools such as textbooks, media, materials, and technology; (7) strategies, techniques and activities related to family involvement in managing the disorder.

Given the amount of new information about ADD, the pace at which it is appearing, and the multidisciplinary nature of the information, it is difficult to access current information in an organized, systematic and meaningful fashion. The clearinghouse will provide a means by which emerging information is evaluated and integrated into an organized body of knowledge, centralized for retrieval purposes, and disseminated in an organized fashion.

10) It is recommended that the Department of Education develop a **database regarding the level of preparation of Iowa school personnel** related to ADD, including the determination of the prevailing knowledge base of both regular and special education administrators, teachers and support staff, and how new information about ADD is acquired by these groups.

The Study Group received considerable anecdotal information from parents and professionals in the field. Input for both educators and consumers suggest that there is variability in the knowledge level of professionals serving individuals with ADD. In addition, the current database regarding the skill and information needs about ADD of Iowa's educators is lacking.

11) It is recommended that the Department of Education develop a **comprehensive and integrated database regarding the current status of educational services** for students with ADD, to include the prevalence of Iowa students with ADD characteristics, types of services being provided, the basis for determining services, and the effectiveness of services.

A database on the current status of services to students with ADD would document how students are being identified and what services are being provided to the students through the educational system. The database could also address the outcomes of services as measured by student progress and consumer satisfaction. This information would provide a basis for identifying specific programmatic weaknesses and effective practices, and provide a baseline for anticipating future program and service needs.

12) It is recommended that the Department of Education and the area education agencies cooperate in the **development of consumer resource guides** that would assist parents and professionals in accessing appropriate services for individuals suspected as having ADD or related problems.

Sometimes just finding out what resources and services are available is a difficult task. Accessing the appropriate resources and services can be a challenging task. The educational system provides an ideal means for disseminating information on the available resources and on how to access the various resources to both parents and professionals in local communities. Consumer resource guides disseminated through the area education agencies and local school districts would provide a valuable and needed resource to the students and their families, and

professionals who need assistance, information, and services for ADD.

Potential Impact

If these recommendations were implemented, parents and the various service providers would have a reliable system for obtaining current information about the various aspects of ADD. Implementation of the recommendations would provide a means for organizing, synthesizing and evaluating the current knowledge base in ADD, and the new information and knowledge that is rapidly emerging.

Staff Development

Background

The development of a knowledge and skill base across the various educational and related service personnel serving students with ADD and their families is an essential ingredient to a successful response to the needs of individuals with ADD. Since a majority of school and related services personnel have not received training specific to ADD, there is the need for a comprehensive and integrated staff development effort.

Recommendations and Rationales

13) It is recommended that the Departments of Education, Human Services, and Health cooperate in **developing and implementing a coordinated staff development effort** to achieve improved and coordinated services for individuals with ADD and their families.

Since a comprehensive treatment plan for ADD extends beyond the school setting and usually requires the coordination and integration of various services and programs, it would be appropriate and efficient to provide a coordinated staff development effort for the various educational and related service providers. These staff development efforts can be provided on a regional basis and respond to local needs, and include appropriate follow-up and support components.

14) It is recommended that the Department of Education **institute and support a plan of staff development** for all school personnel on appropriate assessment, management and intervention strategies for students with ADD.

Students with ADD do present the schools with unique and challenging educational needs. The majority of school personnel have not been provided information or training specific to students with ADD. If the expectation of schools is to provide appropriate responses to these needs, the opportunity to develop the necessary skills must be provided to school personnel. Staff development efforts must include regular and special education administrators, teachers and support personnel.

15) It is recommended that **institutions of higher education integrate content about ADD**, including information of a general nature, evaluation practices, and appropriate interventions, as a component of training at the undergraduate and graduate levels for education, health, and mental health providers.

Professionals from all major areas dealing with ADD problems have expressed interest in having more information, training and resources. The high incidence, the multiple dimensions, the unique needs, and the persis-

tence of this disorder throughout childhood and into adulthood support the need for broad-based training of all relevant professionals. Preservice entry-level training of these frontline professionals will give them greater familiarity with ADD and its effects, basic skills for assessment and evaluation relevant to their roles, skills for appropriate interventions, knowledge of related roles and services, and an understanding of the multidisciplinary approach. A coordinated training approach across disciplines can equip professionals to work together in assisting families, schools, and communities to provide the best possible services to young people with ADD.

16) It is recommended that **staff development be provided to interagency multidisciplinary teams** representing each AEA geographical region. These teams, composed of special education instructional and support personnel, local and area education agency personnel, health and mental health personnel, and parents would become trainers for other involved persons in their respective geographical regions (AEAs).

Given the prevalence of ADD in the school-aged population, it will be necessary to provide all school personnel, related services personnel, and parents with the opportunity to access information and training on ADD. The development of regional (AEA) training teams is an efficient and effective means for providing a timely response to training needs.

Potential Impact

The high prevalence of ADD in the school-aged population suggests that most, if not all education, health and mental health professionals will encounter individuals with ADD. In addition, the Study Group heard considerable frustration expressed by parents, educators and other professionals in trying to deal effectively with individuals having this disorder because of limited information about the disorder itself and the absence of efficient and successful means to deal effectively with it. Education, health and mental health providers must acquire basic knowledge about ADD, basic skills for serving these individuals, and basic awareness of their own role and the roles of others in a multidisciplinary approach to service. Coordinated and integrated staff development efforts are an essential ingredient to achieving this end.

Epilogue

Schools have been serving students with a wide variety of academic and behavioral difficulties, including individuals with various disabilities who require special education for many years. As a result, school personnel are experienced in planning individualized education programs for students and in accommodating individual differences and needs in the regular classroom. Students with attention deficit disorders present a similar challenge to schools and will require the same attention to individual educational needs and personalized programming.

Recognizing the significant role that schools play in the lives of children and the potential impact that schools can have on students and their families, the Study Group offers the following thoughts on attention deficit disorders for the educational community to consider in its efforts to provide appropriate educational opportunities to all students.

1) Attention deficit disorders is a complex condition that can affect all aspects of an individual's life. An understanding of the condition and its potential impact on individuals is a necessary ingredient of the educational community's response to individuals with attention deficit disorders.

2) The condition and its impact on individuals varies. As a result, there is no one program or treatment plan that is effective in all cases. Interventions and management programs need to be specially designed and individually tailored to the needs of each student with attention deficit disorders.

3) Attention deficit disorder is not just a medical problem. While the initial diagnosis in many cases originates with a physician or private clinic, schools need to recognize the need to consider the condition's educational implications on an individual basis and determine the classroom accommodations and individualized interventions that are necessary to providing an appropriate educational program.

4) Students with attention deficit disorders require a coordinated and cooperative effort of regular and special education. In some cases, accommodations to the classroom environment, materials and instructional strategies is all that is necessary for providing an appropriate educational program. In other cases, specially designed interventions in addition to the regular program will need to be provided. In order for schools to respond effectively and appropriately to the needs of students with attention deficit disorders, regular and special education instructional and support personnel will need to share the responsibility for providing these students with educational programs that are responsive to and accommodate their individual needs.

5) More often than not, students with attention deficit disorders will require the services of a variety of agencies and service providers. In such circumstances, the school plays an important role in coordinating and supporting, and perhaps even facilitating the activities and services of the various agencies and providers.

Students with attention deficit disorders present the educational community with another unique challenge to demonstrate its commitment to providing each student a quality educational program. The Study Group believes that Iowa's schools are willing to accept the challenge if the

necessary information, resources and supports are made available. The Study Group further believes that the challenge can be met through a cooperative effort of the Department of Education, area education agencies and local school districts.