Clinical Update: Telepsychiatry With Children and Adolescents

American Academy of Child and Adolescent Psychiatry (AACAP) Committee on Telepsychiatry and AACAP Committee on Quality Issues

This Clinical Update reviews the use of telepsychiatry to deliver psychiatric, mental health, and care coordination services to children and adolescents across settings as direct service and in collaboration with primary care providers or other clinicians. The update defines terms and presents the current status of telepsychiatry as a mode of health service delivery. The update presents procedures for conducting telepsychiatry services and optimizing the clinical experience.

Key words: telepsychiatry, telemental health, telemedicine, telehealth, e-health

J Am Acad Child Adolesc Psychiatry 2017;56(10):875–893.

The past 2 decades have brought new approaches to effective psychotherapies and pharmacotherapies for the 20% of the nation's youth diagnosed with psychiatric disorders.[1] More individuals are seeking care,[2] and the Patient Protection and Affordable Care Act[3] has broadened eligibility for mental health services.[3] However, most youth with psychiatric conditions do not receive any intervention.[4,5] These deficits in access to mental health care reflect the shortages of child and adolescent mental health specialists, a maldistribution of available specialists, the "aging-out effect" of the psychiatric workforce,[6-9] and insufficient funding to sustain a stable workforce for public mental health programs.[10,11] These access deficits disproportionately affect children and adolescents living outside major metropolitan areas and in inner-city communities.[8,12-15] New approaches to meeting this demand are needed.

Technology makes it possible to increase access to health care using real-time, interactive videoconferencing that allows clinicians and patients at different locations to interact as if meeting in the same room. When videoconferencing is used to deliver medical care, the term *telemedicine* is used, and when specifically used to deliver psychiatric care, the term *telepsychiatry* is used. Telepsychiatry requires little adaptation to provide care comparable to usual in-person care, because emphasis is on verbal communication, nonverbal communication, and clinical observations.

This flexibility has made telepsychiatry a reasonable alternative to office visits for patients who cannot readily access needed care and addresses the workforce shortage and maldistribution of child and adolescent psychiatrists.[16,17] Telepsychiatry extends the psychiatrist's reach across large geographic areas to youth in different community settings, including primary care offices, schools, daycare facilities, detention centers, and homes. As its usefulness is established, telepsychiatry is increasingly being used within smaller geographic areas to augment and improve the quality of care available to selected populations.

As various technical, interpersonal, and financial barriers to telepsychiatry fall, programs are proliferating across the country. Clinical guidance for telepsychiatry is needed to shape practice models, identify provider training needs, and ensure that the quality of care meets the standards of traditional in-person care.

This Clinical Update renews the prior American Academy of Child and Adolescent Psychiatry (AACAP) Practice Parameter for Telepsychiatry With Children and Adolescents[18] and responds to calls for further clinical guidance on this topic.[19] Because of the limited empirical evidence base, this update draws from child-specific telemental health research (Table 1),[20-60] guidelines for evidence-based psychotherapies,[61] the general telemental health evidence base,[62] and expertise of child and adolescent telepsychiatry providers.[23,35,41,63-71]

Telepsychiatry, like all telemedicine, is not a separate medical specialty. Products and services are part of a larger investment by health care institutions in information technology or delivery of clinical care. The telemedicine landscape is rapidly evolving. This Clinical Update provides a scaffold for integrating new technologies and evolving therapeutic interventions into a service delivery model for youth who are underserved by traditional models of care, for those who seek to augment their traditional sources of care, and for psychiatrists who seek to diversify their practices and improve the quality of their care. Modifications and updates will be needed as the field evolves.

The Clinical Update series is discussed in an editorial by Drs. Heather J. Walter and Oscar G. Bukstein on page 811.

This article can be used to obtain continuing medical education (CME) at www.jaacap.org.

METHODOLOGY

A medical librarian conducted a systematic review of the literature in April 2016 and updated the search through March 2017. Searches were performed in the following databases—on the Ovid platform: Medline, PsycInfo, Cochrane Database of Systematic Reviews, and Cochrane Central Register of Controlled Trials; elsewhere: Embase, Web of Science, and the National Guideline Clearinghouse. Retrieval was limited to publication dates from January 2004

TABLE 1 Evidence-Base Supporting Child and Adolescent Telepsychiatry

Citation	Sample	Assessment	Findings
Randomized controlled trials			
Nelson *et al.*, 2003[20]	28 youth (age 8–14 y; mean 10.3 y) with depression	diagnostic interview and scale	comparable improvement of depressive symptoms in response to therapy delivered in person or through ITV
Storch *et al.*, 2011[21]	31 youth (age 7–16 y; mean 11.1 y) with OCD	ADIS-IV-C/P, CY-BOCS, COIS, MASC, CDI, satisfaction with services	ITV was superior to in-person care on all primary outcome measurements, with significantly larger percentage of individuals in the ITV group meeting remission criteria
Himle *et al.*, 2012[22]	20 children (age 8–17 y) with Tourette's disorder or chronic motor tic disorder	YGTS, PTQ, CGI-S, CGI-I	youth in ITV and in-person service delivery modalities experienced significant tic decrease with no between-group differences
Myers *et al.*, 2015[23]	223 youth (age 5.5–12.9 y) with ADHD	DISC-IV, CBCL, VADPRS, VADTRS, CIS	caregivers reported improved inattention, hyperactivity, combined ADHD, ODD, role performance, and impairment; teachers reported improvement in ODD and role performance
Xie *et al.*, 2013[24]	22 children (age 6–14 y) with behavioral disorder	PCQ-CA, VADPRS, CGAS	parent training through ITV was as effective as in-person training and was well accepted by parents
Tse *et al.*, 2015[25]	38 children (age 5.5–12 y) with ADHD	VADRS, CIS, PSI, CSQ, PHQ-9, FES	parents of children with ADHD received parent training in person or through ITV; children in the 2 groups improved comparably; parents' distress did not change for those who received training through ITV
Comer *et al.*, 2017[26]	children 3–5 y old with disruptive behaviors	K-DBDS, CGI-S CGI-I; CGAS, ECBI, CBCL, CSQ-8, TAI	children's behaviors improved comparably for PCIT and i-PCIT service models
Pre-post or comparison studies			
Glueckauf *et al.*, 2002[27]	22 adolescents (mean age 15.4 y; 100% Caucasian), 36 parents	SSRS, WAI, issue-specific measurements of family problems, adherence to treatment	improvement for problem severity and frequency in all conditions; therapeutic alliance high; teens rated alliance lower in ITV format
Fox *et al.*, 2008[28]	190 youth (age 12–19 y; mean 17 y) in juvenile detention	GAS	improvement in rate of attainment of goals associated with family relationships and personality and behavior
Yellowlees *et al.*, 2008[29]	41 children in e-mental health program	CBCL	retrospective assessment of 3-mo outcomes with a convenience sample found improvements in the Affect and Oppositional domains of CBCL
Reese *et al.*, 2012[30]	8 children (mean age 7.6 y; 12.5% Asian)	ADHD	families reported improved child behavior and decreased parent distress with ITV format of Group Triple P Positive Parenting Program

TABLE 1 Continued

Citation	Sample	Assessment	Findings
Heitzman-Powell *et al.*, 2013[31]	7 parents; youth age not reported	OASIS training program	parents increased their knowledge and self-reported implementation of behavioral strategies
Satisfaction studies			
Blackmon *et al.*, 1997[32]	43 children (age 2–15 y; mean 9 y)	12-item telemedicine consultation evaluation	all children and 98% of parents reported satisfaction equal to in-person care
Elford *et al.*, 2001[33]	30 children (age 4–16 y; mean 13 y)	satisfaction questionnaire	showed high satisfaction of children, teens, parents, and psychiatrists with ITV
Kopel *et al.*, 2001[34]	136; article does not specify age but refers to participants as "young persons"	satisfaction questionnaire	high satisfaction by families and rural health workers in New South Wales, Australia
Greenberg *et al.*, 2006[35]	35 PCPs, 12 caregivers; mean age of children 9.3 y	focus groups with PCPs, interviews with caregivers	PCP and caregiver satisfaction with telepsychiatry; frustration with limitations of local supports
Hilty *et al.*, 2006[36]	15 PCPs for children and adults; 400 patients (number of children not specified)	PCP Satisfaction Survey	PCP satisfaction was high and increased over time
Myers *et al.*, 2007[37]	172 patients (age 2–21 y) and 387 visits	11-item Psychiatrist Satisfaction Survey	describes telepsychiatry services at 4 sites; high satisfaction of PCPs and reimbursement of services; pediatricians more satisfied than family physicians
Myers *et al.*, 2008[38]	172 patients (age 2–21 y) and 387 visits	12-item Parent Satisfaction Survey	describes use of telepsychiatry by families and their high satisfaction with initial and return visits; less satisfied with care for adolescents than for younger children
Myers *et al.*, 2010[39]	701 patients (18% <7 y, 43% 7–12 y, 39% >12 y); 190 PCPs	collection of patient demographics and diagnoses	telepsychiatry with young people is feasible and acceptable
Pakyurek *et al.*, 2010[40]	children and adolescents in primary care; 5 case studies	effectiveness of telepsychiatry in treating range of problems	video might actually be superior to in-person consultation
Lau *et al.*, 2011[41]	45 children and adolescents (age 3–17 y; mean 9.7 y)	description of patients referred for consultation, reason for consultation, treatment recommendations	ITV reached variety of children, with consultants providing diagnostic clarification and modifying treatment
Szeftel *et al.*, 2012[42]	45 patients, 31 <18 y old	retrospective chart review—medication changes, frequency of patient appointments, diagnostic changes, symptom severity and improvement	ITV led to changed Axis I psychiatric diagnosis (excluding developmental disorders) in 70% and changed medication in 82% of patients initially (41% at 1 y and 46% at 3 y); ITV helped PCPs with recommendations for developmental disabilities
Descriptive and service usage			
Myers *et al.*, 2004[43]	159 youth (age 3–18 y)	comparison of patients evaluated through ITV vs. in person	ITV patients were representative of usual outpatient population demographically, clinically, and by reimbursement; more "adverse case mix" for ITV sample
Myers *et al.*, 2006[44]	115 incarcerated youth (age 14–18 y)	11-item satisfaction survey	described large series of incarcerated youth, including medication management

TABLE 1 Continued

Citation	Sample	Assessment	Findings
Jacob *et al.*, 2012[45]	15 children (age 4–18 y; mean 9.73 y)	12-item Parent Satisfaction Survey	patient satisfaction high and PCPs found recommendations helpful; outcomes pending on follow-up
Nelson *et al.*, 2012[46]	22 youth (mean age 9.3 y)	chart review	no factor inherent to the ITV delivery mechanism impeded adherence to national ADHD guidelines
Diagnostic validity			
Elford *et al.*, 2000[47]	25 children (age 4–16 y) with various diagnoses	diagnostic interviews	96% concordance between ITV and in-person evaluations; no differences in satisfaction
Stain *et al.*, 2011[48]	11 adolescents and young adults (age 14–30 y)	Diagnostic Interview for Psychosis	strong correlation of assessments done in person vs. ITV
Reese *et al.*, 2013[49]	21 children (age 3–5 y; 90% Caucasian)	ADOS Module 1, ADI-R, parent satisfaction	no difference in reliability of diagnostic accuracy, ADOS observations, ratings for ADI-R parent report of symptoms, and parent satisfaction between ITV and in-person groups
Chart review			
Marcin *et al.*, 2005[50]	223 patients (age 6 mo–84 y; mean 33 y; SD 19 y) including psychiatry and other specialties	chart review	teleconsultation resulted in changes in diagnosis and treatment and was associated with clinical improvement
Boydell *et al.*, 2007[51]	100 children and adolescents (age 2–17 y; mean 11 y)	chart review and interviews with case managers	pros and cons of adherence
Psychosomatic pediatrics interventions			
Bensink *et al.*, 2007[52]	8 youth (inclusion criteria for age is 2–18 y, but no specified age range or mean age for actual sample)	cost-minimization analysis, structured interviews	using ITV over videophone to families with a child diagnosed with cancer, the study noted technical feasibility and high parental satisfaction
Clawson *et al.*, 2008[53]	15 youth (age 8 mo–10 y)	family satisfaction, costs to family, psychiatrist satisfaction, clinical outcomes	ITV was feasible with the pediatric feeding disorder population and resulted in cost savings
Shaikh *et al.*, 2008[54]	99 youth (age 1–17 y)	retrospective review of patient medical records	ITV consultations resulted in substantial changes and additions to diagnoses; for a subtest of patients, repeated ITV consultations led to improved health behaviors, weight maintenance, and/or weight loss
Witmans *et al.*, 2008[55]	89 children (age 1–18 y; mean 7.5 y)	sleep diary, childhood sleep habits, PQoL, client satisfaction	patients were very satisfied with the delivery of multidisciplinary pediatric sleep medicine services over ITV
Mulgrew *et al.*, 2011[56]	25 youth (age 4–11 y)	consulting psychiatrists' listening skills; ease of understanding instruction delivered to patients and their families; comfort level of parents in discussing health concerns	no significant difference in parent satisfaction between consultations for weight management delivered by ITV or in person
Davis *et al.*, 2013[57]	58 youth (age 5–11 y; mean 8.6 y)	BMI; 24-h dietary recall, ActiGraph, CBCL, Behavioral Pediatrics Feeding Assessment Scale	both groups showed improvements in BMI, nutrition, and physical activity, and groups did not differ significantly on primary outcomes

TABLE 1 Continued

Citation	Sample	Assessment	Findings
Freeman *et al.*, 2013[58]	71 youth (ITV: mean age 15.2 y; in person: mean age 14.9 y)	baseline metabolic control, CBQ, Diabetes Responsibility and Family Conflict Scale, WAI	no differences were found in therapeutic alliance between groups
Hommel *et al.*, 2013[59]	9 youth (mean age 13.7 y)	pill count, PHBI, Pediatric Ulcerative Colitis Activity Index, Feasibility Acceptability Questionnaire	ITV approach resulted in improved adherence and cost-savings across patients
Lipana *et al.*, 2013[60]	243 youth (mean age 11 y)	review of medical records	using a nonrandomized design, the ITV group demonstrated more improvement than the in-person group in enhancing nutrition, increasing activity, and decreasing screen time

Note: ADHD = attention-deficit/hyperactivity disorder; ADI-R = Autism Diagnostic Interview—Revised; ADIS-IV-C/P = Anxiety Disorders Interview Scale—DSM-IV—Parent and Child Versions; ADOS = Autism Diagnostic Observation Scale; BMI = body mass index; BPFAS = Behavioral Pediatrics Feeding Assessment Scale; CBCL = Child Behavior Checklist; CBQ = Conflict Behavior Questionnaire; CDI = Children's Depression Inventory; CGAS = Clinical Global Assessment Scale; CGI-I = Clinical Global Impressions of Improvement Scale; CGI-S = Clinical Global Impressions of Severity Scale; CIS = Columbia Impairment Scale; COIS = Child Obsessive Compulsive Impact Scale; CSQ = Caregiver Strain Questionnaire; CSQ-8: Client Satisfaction Questionnaire; CY-BOCS = Child Yale-Brown Obsessive Compulsive Scale; DISC-IV = Diagnostic Interview Scale for Children for DSM-IV; ECBI = Eyberg Child Behavior Inventory; FES = Family Empowerment Scale; GAS = Goal Attainment Scale; ITV = interactive televideo; K-DBDS = Kiddie Disruptive Behavior Disorders Schedule; MASC = Multi-dimensional Anxiety Scale for Children; OCD = obsessive-compulsive disorder; ODD = oppositional defiant disorder; PCIT = Parent-Child Interaction Therapy; PCP = primary care provider; PCQ-CA = Parent Child Relationship Questionnaire; PDD-NOS = pervasive developmental disorder, not otherwise specified; PHBI = Partial Harvey-Bradshaw Index; PHQ-9 = Patient Health Questionnaire—9 Items; PQoL = Pediatric Quality of Life; PSI = Parenting Stress Index; PTQ = Parent Tic Questionnaire; RCT = randomized controlled trial; SSRS = Social Skills Rating System (teen functioning); TAI = Therapy Attitude Inventory; VADPRS = Vanderbilt ADHD Parent Rating Scale; VADTRS = Vanderbilt ADHD Teacher Rating Scale; WAI = Working Alliance Inventory; YGTS = Yale Global Tic Severity Scale.

to March 2017, in the English language, and on human species. In Medline, PsycInfo, and Embase, appropriate Medical Subject Headings (MeSH), terms from the Thesaurus of Psychological Index Terms, and Emtree headings were used, respectively, in addition to text words, and the search strategy was adapted for other databases as appropriate. Terms searched were *telepsychiatry*, *telepsychology*, *telemental*, *telebehavioral medicine*, *teletherapy*, *telehealth*, *telepractice*, *telemedicine*, *video conferencing*, *remote consultation*, and *mental disorders*. The final 1,547 records screened after duplicates were removed included high-level studies such as meta-analyses (n = 146) and lower-level studies such as randomized controlled trials, intervention trials, pre-post interventions, case series, observational studies, and program descriptions (n = 1,346), as well as various expert opinions and experience (n = 55).

In addition to the systematic search, we included material from 3 other sources. We included book chapters from texts published by recognized leaders in telepsychiatry, particularly chapters addressing topics not well addressed in the research literature, such as ethics and cultural competence. Second, we retained several articles published before 2004 from the original Practice Parameter for Telepsychiatry With Children and Adolescents[18] because of their relevance to establishing a telepsychiatry practice. Third, we reviewed multiple websites. The most up-to-date information on telemedicine law, regulation, policy, models of care, prescribing, coding, and reimbursement are addressed on these dynamic websites. We also queried the telemental health special interest group of the American Telemedicine Association (ATA) and telemedicine clinicians at international and national centers regarding trending issues.

The evidence supporting telepsychiatry practice with adults greatly outweighs the evidence for practice with children and adolescents. Therefore, we included material gleaned from work with adults in diverse settings if deemed relevant to the feasibility, acceptability, sustainability, or effectiveness of telepsychiatry practice with youth.

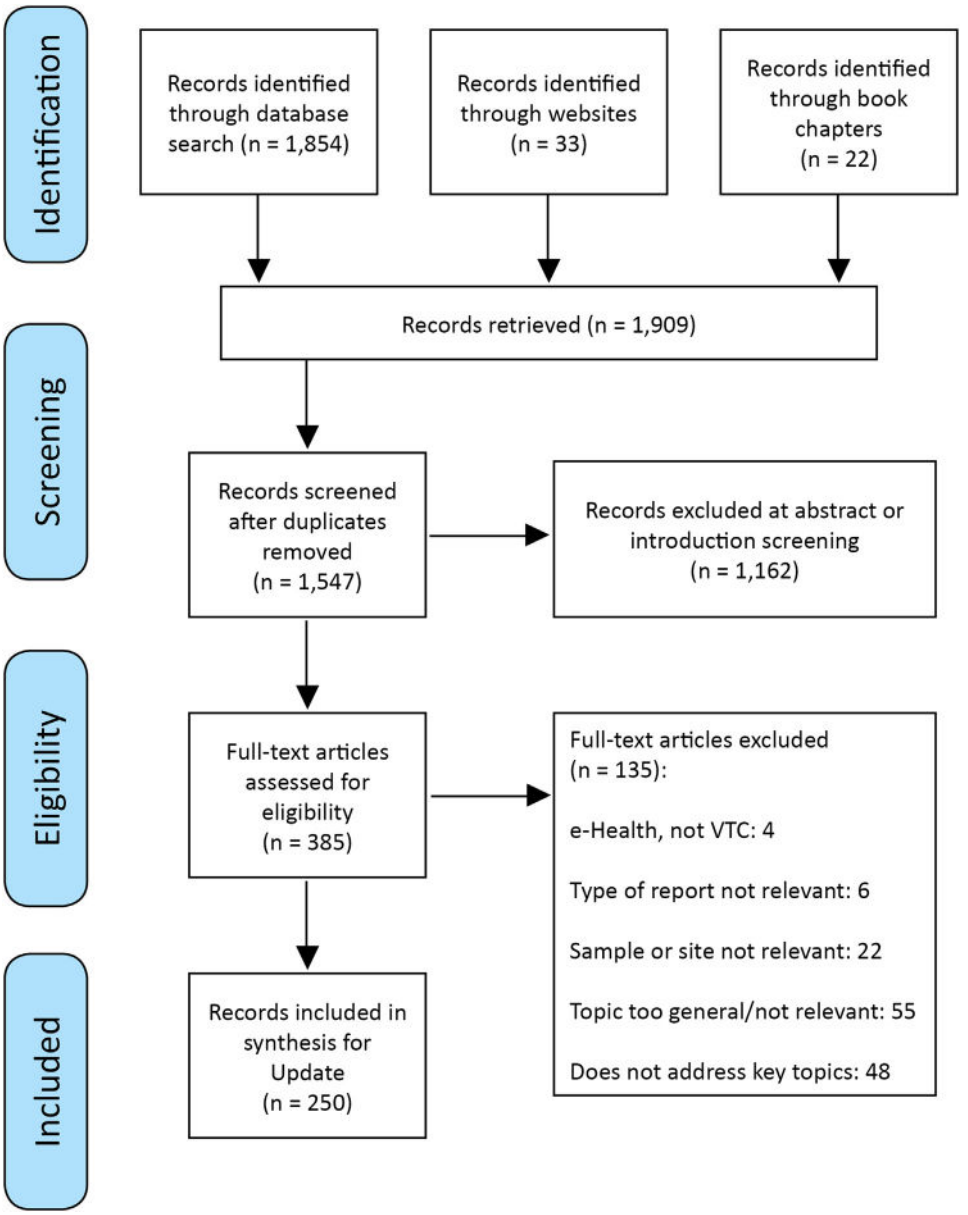
The search methodology is depicted in Figure 1.

DEFINITIONS

There is no clear definition of telehealth-related activities, and some agencies do not distinguish *telehealth* from *telemedicine*.[72-74] In this Clinical Update, we adhere to definitions from the Centers for Medicare and Medicaid Services (CMS). CMS defines *telehealth* as the use of telecommunications and information technology to provide access to health assessment, diagnosis, intervention, consultation, supervision, and information across distance.[75] The term *telehealth* describes a broad umbrella of services that involves telephones, facsimile machines, e-mail, and remote patient monitoring and interpretation. It does not necessarily meet the CMS definition of telemedicine.

The CMS notes that "for purposes of Medicaid, *telemedicine* seeks to improve a patient's health by permitting two-way, real-time interactive communication between the patient and the physician at the distant site. This electronic communication means the use of interactive telecommunications equipment that includes, at a minimum, audio and video equipment."[76] The CMS views telemedicine as a cost-effective alternative to the more traditional face-to-face method of care.[77,78]

FIGURE 1 Literature search flow diagram. Note: VTC = video teleconferencing.



When telemedicine is used to provide psychiatric and more general mental health services, the terms *telepsychiatry* and *telemental health* (TMH), respectively, are often used.[79,80] To optimize efficiency in terminology in this Clinical Update, we use the term *interactive televideo* (ITV) to encompass the broad range of clinical activities related to mental health services for children and adolescents delivered in real time through synchronous (2-way) interactions using video and audio electronic modalities. We reserve the specific terms *telepsychiatry, telemental health,* or *telemedicine* when referring, respectively, to psychiatric, mental health, or medical services rendered to children and adolescents through ITV.

Other terms and definitions relevant to this Clinical Update follow. A comprehensive glossary can be found at the ATA website.[81]

- *Applications or Platforms:* Technology used to provide videoconferencing, classified as standards based or consumer grade.[82,83]
  - Standards-based applications and platforms, or "legacy hardware," offer the highest quality of audio and video and the most stable data connection. These proprietary, telephone-based systems transmit data over digital subscriber lines with high bandwidth (≥1.5 Mb/s) over satellite or fiberoptic systems. These systems offer features such as the ability to zoom and pan and tilt cameras at the 2 sites and connect to multiple microphones and multiple monitor systems.
  - Consumer-grade software platforms transmit data over the internet, and interface software runs on personal computers, tablets, and smartphones. When run off the

vendor's servers, this is referred to as *cloud-based computing.* Software vendors who advertise as telehealth solutions must provide appropriate software encryption and sign business associate agreements to comply with regulations of the Health Information Portability and Accountability Act (HIPAA).

- *Bandwidth:* Data that can travel through a communications network in a fixed period (expressed as kilobits per second). The higher the bandwidth, the more data that can be transmitted.
- *Broadband:* Transmission of signals in a frequency-modulated fashion over a segment of the total available bandwidth, permitting simultaneous transmission of messages.
- *CODEC:* Acronym for coder-decoder. A microchip that converts analog video and audio to digital and vice versa.
- *Frame and Frame Rate:* A video signal is composed of multiple still images, or frames. Their rate of display is determined by the bandwidth and quality of the camera and monitor. Broadcast-quality video used in most telepsychiatry work has 25 to 30 frames per second.
- *"Patient Site" (Patient's Location or Originating Site), "Psychiatrist Site" (Psychiatrist's Location or Distant Site):* Participants at each end of the ITV link. The CMS uses originating site for patient location and distant site for physician or psychiatrist location.
- *Telepresenter:* An individual located at the patient site who supports the patient and the psychiatrist. Telepresenters can include licensed professionals or allied health professionals depending on resources within the community.
- *Teletherapy:* Informally refers to any nonpharmacologic, psychotherapeutic interventions delivered through videoconferencing.
- *Young People or Youth:* Children and adolescents. If a section is specific to children or adolescents, we use that developmentally specific term.

HISTORICAL REVIEW

As early as the 1920s, the potential for electronic media to influence people's health and health care was recognized with the launch of "The Radio Doctor."[84] Telephony added the ability for interactive, real-time, and personalized health care interactions between a physician and a patient. The first use of interactive video to deliver health care occurred at the University of Nebraska in 1959, when a closed-circuit television system was used for educational and medical purposes, mainly in psychiatry.[85] In 1973, the term *telepsychiatry* was first used to describe consultation services provided from the Massachusetts General Hospital to a medical site in Boston's Logan International Airport and the Bedford Veteran's Administration.[86] Shortly thereafter, telepsychiatry was reported with children and adolescents when the Mount Sinai School of Medicine connected to a child guidance clinic in East Harlem.[87] There was little further published activity until the 1990s, when internet and web-cam technologies lowered financial and technical barriers to routine videoconferencing and the growth of telemedicine services.

The number of telepsychiatry programs and telepsychiatrists, particularly those serving children and adolescents, is unknown, but the growing options are evidenced by a simple search of the internet for "telepsychiatry jobs."

The ATA has captured the complex policy landscape of 50 states with 50 different telemedicine policies.[88] At this writing, their report indicates that at least 31 states have enacted telemedicine parity laws mandating commercial insurers to reimburse telemedicine services on par with in-person services. The CMS has established guidelines for telemedicine care and policies for reimbursement that include a small care coordination fee paid to the local site on a per-patient, per-month basis.[75,89,90] There is a national trend to approve statewide Medicaid coverage of telemedicine, instead of focusing solely on rural areas or designating a mileage requirement, and there is movement away from a clinical site "hub-and-spoke" model in favor of reaching patients in nontraditional service sites, such as schools (23 states and Washington, DC) or homes (40 states).[88] The Office for the Advancement of Telehealth funded the development of several regional Telehealth Resource Centers to provide assistance, education, and information to organizations and individuals who are providing, or interested in providing, health care at a distance.[91] The Patient Protection and Affordable Care Act has recommended telehealth technologies to improve access to and quality of care for underserved populations.[3] Innovative child and adolescent telepsychiatry programs are being integrated into the pediatric medical home model[92,93] and sited in diverse community settings, such as pediatric clinics,[39,41,68] community mental health centers,[43,94] urban daycare centers,[95] schools,[96,97] juvenile correctional settings,[44,98] and homes.[26,99,100] Telepsychiatry services have expanded beyond major medical and academic centers[37,41,101] to the private practice setting.[66,94] Psychiatrists can contract with a commercial vendor that provides a patient base and the practice infrastructure, or more enterprising psychiatrists might assume these activities in their private practice.[66]

CLINICAL UPDATE

Legal, Regulatory, and Ethical Issues

Legal Issues. The legal and regulatory process in medical practice is dynamic in response to scientific progress, medical research, new products and procedures, best practices per medical disciplines, and stakeholders' interests. Accordingly, state and federal agencies have started to scrutinize telepractice, largely in response to the epidemic of opioid drug abuse.[102] State regulations vary, are in flux, and might not be fully congruent with federal guidelines. Additional regulations might apply to international practice. As a result, it is not possible to provide a set of uniform regulations. Therefore, before initiating telepsychiatry services, psychiatrists should consult their state's laws and medical board guidelines and the Drug Enforcement Administration's (DEA) regulations,[102] particularly the

Office of Diversion Control regarding illicit pharmaceutical activities online.[103] Many professional liability and malpractice carriers cover telepsychiatry services but might require that their clients indicate services provided through ITV. Reimbursement of telepsychiatry services varies at the state level for Medicaid and commercial vendors[88] and at the federal level for Medicare coverage.[90,104,105] Germane issues that vary by state relate to licensure, parameters constituting the practice of medicine, definition of the doctor–patient relationship, and prescribing.[106]

National licensure and/or portability of licensure for telemedicine practice have been widely discussed for several years.[107] The recent launch of the Interstate Medical Licensure Compact will streamline the medical licensure process across states and support the expanded use of telemedicine.[108] As of this writing, 18 states have adopted the compact, and 8 additional states and the District of Columbia have introduced legislation in support of a pathway for license portability. If the patient site and psychiatrist site are located in different states, then full licensure in the 2 states is usually required. The requirement does not pertain to the state where the patient is residing but where the patient is receiving the intervention. Several states allow for limited licensure specific to providing services through ITV. These licenses have different restrictions to the scope and practice allowed but are usually more quickly obtained than a full license. A few states allow telepsychiatry services to be provided by a physician licensed in a neighboring state. Although most states allow consultations between physicians without reciprocal licensure, a few states require the consultant to be licensed in the state where the patient is located.[88] Some states allow for emergency telepsychiatry services without a license but with regulations on the extent and frequency of implementation.

Prospective telepsychiatry providers should assess other legislation. Some states mandate conditions of the clinical encounter or require that a telepsychiatrist maintain a physical practice location in that state. Some states require the patient be evaluated and treated only in a state or federally operated clinic or hospital, or alternatively for a licensed health care professional to accompany the patient during the evaluation. Even if psychiatrists are licensed in a distant state, regulations could prohibit their participation in the civil commitment process. Regulatory and procedural guidelines regarding the mental health treatment of youth can vary by jurisdiction, including the reporting of child endangerment and the treatment of children in foster care and correctional settings.

Providing pharmacotherapy through ITV is a topic receiving national and state attention. Congress passed the Ryan Haight Online Pharmacy Consumer Protection Act of 2008 to expunge illegitimate online pharmacies that dispense controlled substances without appropriate patient contact and without physician oversight.[109] This act inadvertently caught legitimate medical and psychiatric practice in its broad net. It placed certain restrictions on "the practice of prescribing by means of the internet." Although the act specifically states that telemedicine is an exception to the act, it technically requires that prescribers conduct at least 1 in-person evaluation of the patient before prescribing a controlled substance through telemedicine. Alternatively, patients being treated by and located in a hospital or clinic registered with the DEA and in the presence of a DEA-registered practitioner can be prescribed a controlled substance during telemedicine. The letter of this legislation is difficult to follow and severely dilutes the value of telepsychiatry or any telemedicine-related practice. However, the DEA recently noted that it does not intend to interfere with the legitimate prescribing of controlled substances during telemedicine practice.[110] It has promised to promulgate further rules on telemedicine prescribing and to establish a special telemedicine registration. Unfortunately, these provisions have been left incomplete since 2008. Several states have enacted legislation to allow the prescribing of controlled substances during telemedicine practice, particularly for telepsychiatry. Psychiatrists should carefully review federal and state guidelines in establishing their telepsychiatry practice regarding the prescription of controlled substances and consider the best interests of their patients.

Regulatory Issues. Regulatory issues related to confidentiality, records management, and ethical standards governing telepsychiatry are the same for in-person practice. They vary with the patient's site of service. Hospital-based clinics will be accustomed to maintaining charts and abiding by HIPAA regulations.[111] Some community sites have similar guidelines. For example, school-based health clinics must adhere to guidelines of the Family Educational Rights and Privacy Act (FERPA).[112] Other nonmedical clinics will require guidelines to ensure security of private medical information according to HIPAA rules. Telepsychiatry providers should check for federal and state regulations regarding their site of practice.

The Joint Commission on the Accreditation of Healthcare Organizations[113] and other accrediting agencies have established guidelines for medical specialties providing services through telemedicine. Two medical staff standards address telemedicine. One requires medical staff to recommend the clinical services provided by telemedicine providers and the other requires the telemedicine provider to be credentialed at the patient site. Reciprocity of credentialing has recently been authorized. Psychiatrists are encouraged to contact representatives from telemedicine departments, information technology, health information management systems, and information security for assistance. Other resources include the ATA,[114] the regional Telehealth Resource Centers,[91] and the Center for Telehealth and e-Health Law.[115] The CMS also provides guidelines regulating telehealth and telemedicine.[116,117]

Ethical Issues. Telepsychiatry practice should comply with the ethical guidelines for child and adolescent psychiatry provided in the AACAP Code of Ethics.[118] Guidelines specific to telepsychiatry with youth are evolving.[118,119] Psychiatrists should give particular attention to practices that might require special implementation, such as obtaining informed consent, preventing malfeasance, and ensuring confidentiality.

As in traditional in-person practice, psychiatrists should document informed consent for ambulatory care and should

determine whether separate consent is needed for delivering care through ITV. This requirement can vary by state or facility. Relevant forms are available online.

Steps to ensure privacy and data security are needed, especially when services are provided in nontraditional settings. Adhering to ethical care during telepsychiatry should be considered in the context of the community-based system of care principles.[120] Of particular relevance, patients and families should be informed of the practice of telepsychiatry, its benefits, and any risks that might be involved at the patient's site, such as equipment malfunction, familiarity with clinic staff, or steps needed to prevent malfeasance. These issues should be addressed by the psychiatrist before commencing services and ensure that the family wants to proceed with telepsychiatric care.

Needs Assessment and Model of Care

When planning to implement a child and adolescent telepsychiatry service, a needs assessment should be considered.[66,121,122] Many underserved communities allocate their mental health funds to the adult chronically mentally ill. A needs assessment conducted with stakeholders in the welfare of children and adolescents will identify communities that are likely to support telepsychiatry services for youth and telepsychiatry services that will complement existing services. Stakeholders and the psychiatrist can identify age groups, behavioral presentations, and interventions that are of highest priority for the community. They can determine the disorders that meet medical necessity criteria by third-party payers in the jurisdiction to ensure sustainability of the program.[88,90]

Child and adolescent psychiatrists should establish their model of care during contracting, which often begins with determining the site of care. Services can be delivered to traditional outpatient medical or psychiatric clinics,[92] clinics within nonmedical facilities such as schools,[97,123,124] juvenile justice programs,[98] or nonclinical settings such as the home.[26,99,100] The site of service will have implications for the model of care and operational procedures, such as staffing, patient selection, patient management, safety, and emergency planning. The model of care can range from direct care of patients to consultation with primary care providers (PCPs). In a direct care model, the psychiatrist is responsible for diagnosis and ongoing treatment. This model might be more common at nonmedical sites, such as mental health clinics or correctional facilities. In a consultation model, the psychiatrist evaluates the patient and makes treatment recommendations to the PCP, who maintains responsibility for patient care. This model might be more common at primary care offices. Although not well described in the child and adolescent literature, collaborative models in which the psychiatrist manages a population of patients with a PCP[125,126] are promising, particularly within the pediatric medical home.[93] Regardless of the model of care chosen, it is recommended that psychiatrists establish partnerships with stakeholders, facilitate communication with others involved in the youth's care (i.e., school staff, primary care physicians, therapist), and determine their role within the youth's system of care.[120]

Once the site of service and model of care are determined, the psychiatrist should determine the flow of administrative tasks, such as obtaining consent forms, making referrals, and obtaining information from the schools. In most models, a dedicated staff person, the telepresenter, is assigned these tasks.[66,94] The telepresenter's training and skills can vary, from nurses to case managers to patient advocates. The psychiatrist's role in defining the telepresenter's tasks, identifying the appropriate staff, and providing the optimal level of supervision should be discussed during contracting. Guidelines for this role are available from the ATA.[127]

Documentation for the telepsychiatry service provided should include the location of the patient and the psychiatrist at the time of service. If a shared electronic medical record is not used, then procedures are needed for securely maintaining copies of documentation at the originating (patient) and distant (physician or psychiatrist) sites. The psychiatrist should determine best procedures for providing prescriptions to patients consistent with the preferences of the patient site. Some sites send prescriptions to the site for distribution to patients, but other sites send prescriptions directly to families or pharmacies.

An important issue for partner sites is to note the psychiatrist's availability between sessions and specify staff to respond to patient calls and procedures to obtain medication refills. These tasks are often shared with the patient's PCP. Concisely written instructions with contact numbers will help families and staff to understand the process of telepsychiatric care.

The psychiatrist and site staff should develop a comprehensive safety plan including protocols for managing urgent needs and emergencies, using local resources, and defining circumstances for involving the psychiatrist.[128] The psychiatrist and staff should establish concrete crisis plans with the patient and family and share the plan with the youth's PCP, therapist, and components of the youth's system of care.[129-131] Emergencies that occur between visits should be managed as for usual care. Psychiatrists should clearly indicate whether they are available for emergencies and, if so, provide patients and staff instructions for contacting them and the role of their PCP.

Appropriateness of Potential Sites and Patients

There are no absolute contraindications for care delivered through ITV with youth, other than the youth or parent refusing services.[80] Similarly, there are limited criteria for determining patient appropriateness for telepsychiatric care. Some psychiatrists have suggested that telepsychiatry might be especially suited for adolescents who are familiar with the technology and might respond to the feeling of control allowed by ITV.[40,124]

Appropriateness is determined in part by weighing need versus resources. The psychiatrist should assess site appropriateness, including adequate space, visual and auditory privacy, and trained staff, to assist the youth in safely

engaging in the session alone and/or with the parent in the room.[18] If an appropriate site is not available, then the patient might need to be referred to in-person services, recognizing that might mean no psychiatric care. Patient appropriateness can vary by circumstances, such as a youth with depression living within a day's drive of a medical center versus a youth living in an Alaskan village accessible by air or boat, or a youth with a psychotic disorder living in a stressed family versus one living in a residential setting. Appropriateness is determined by the psychiatrist in relation to the referral question, patient's needs, developmental and diagnostic status, system of care, caregivers' abilities, and available alternatives, and the psychiatrist's perceived competence and availability of a collaborating PCP or other clinicians.[18] Determination of appropriateness also addresses interim care such as whether treatment should be stepped up to a higher level of care, to in-patient services or intensive community services, such as wrap-around programs.[120,132]

Parents might be diagnosed with psychiatric disorders, and their ability to supervise youth during sessions might be compromised. Therefore, the psychiatrist should assess the ability of the caregiver to contain the youth and to safely participate in sessions and follow treatment recommendations. If treatment is provided at home, then the psychiatrist should determine whether the parent is a sufficient authority figure to safely supervise care.

Patient appropriateness also considers community factors because psychiatrists often differ in race, ethnicity, or culture from the families they serve through telepsychiatry.[133] Because the psychiatrist will likely reside at a distance from the patient site, it might be difficult to become familiar with the community's values and resources.[134,135] A visit to the patient site might help to appreciate community values. Respectful and candid questions about these differences can help to determine an appropriate "match" between the site and the psychiatrist.[67,121] Staff at the site are a great source for helping the psychiatrist to bridge cultural "gaps."

Some relative contraindications for child and adolescent telepsychiatry services to consider include assessment in settings that are not considered neutral, such as a hostile home environment, settings without resources to contain a disruptive child, or settings without appropriate collaborating systems, especially when escalation of care is needed.

Sustainability Issues

Technology Choice. The psychiatrist should choose a technology that is appropriate to the clinical work. The ATA recommends a bandwidth of at least 384 Kb/s[80] to facilitate detection of clinical details, such as abnormal movements, voice inflections, and subtle dynamic cues, such as changes in affect and relatedness. As noted in the Definitions section, there are 3 technology approaches: standards-based applications, consumer-grade applications, and mobile devices.[82,83]

Standards-based, or "legacy" hardware-based, systems provide the best overall clinical experience for bandwidth, connectedness, monitor resolution, and security, but also have been difficult to implement because of their high upfront costs, relative immobility, infrastructure needs, and maintenance. Such systems are not feasible for clinics with few resources and supports or for the home.

To overcome barriers of legacy systems, many telepsychiatry programs are transitioning to HIPAA-compliant cloud videoconferencing. Users simply download an application or link to a website to join a session. Stakeholders can connect with each other through various devices, such as desktop computers, laptops, tablets, and smartphones.

Most video software clients are programmed to be firewall friendly. Sophisticated algorithms that monitor the network connection are incorporated into the software and automatically adjust the call quality based on the available bandwidth, so it works in suboptimal network conditions (e.g., Wi-Fi, 3G, and 4G). With hosted videoconferencing, the service provider manages the entire back-end information technology infrastructure, decreasing the need for on-site information technology staff. Many vendors offer flexible subscription plans, making it easy to start with a single account and expand as partner sites expand.

There is no evidence that the selected technology is related to treatment outcomes, and no guidelines exist to "match" devices to clinical needs or reimbursement. Psychiatrists should choose the platform that is appropriate to the clinical service, manageable by both sites, and financially sustainable. Psychiatrists also should have a backup plan should the technology system fail. This can include a second line or, more often, a telephone.

Funding Source. Various financial models are possible depending on whether the psychiatrist is providing contracted services, billing third-party payers per session, or some other revenue-generating and risk-sharing model.[66] Psychiatrists establishing services across a geographic area might consider cultivating partnerships with other agencies, collaborating with community organizations, working with state programs, and developing a shared vision with other stakeholders.[136] At the federal level, Medicaid and Medicare programs reimburse for specific mental health services. Billing and reimbursement for telepsychiatry services are based on Healthcare Common Procedure Coding System or *Common Procedural Terminology* (*CPT*) codes with a telemedicine modifier ("95") to indicate that services were provided using telemedicine technology.[104] To qualify for the use of modifier "95," it is required to use an interactive audio and video telecommunications system that permits real-time communication between the beneficiary at the originating sites (patient sites) and the provider at the distant site (physician or other qualified health care professional). The telehealth modifier cannot be used with the asynchronous (store and forward) technology.[104,105] The GT modifier "95" can be used for the services provided in *CPT* Appendix P, which include the following *CPT* codes of interest to psychiatrists: 990791, 90792, 90832, 90833, 90834, 90836, 90837, 90838, 90845, 90846, 90847, 90863, 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99231, 99232, 99233, 99241, 99242, 99243, 99244, 99245, 99251, 99252, 99253, 99254, 99255, 99354, and 99355. Additional telemedicine codes could be forthcoming, because the

American Medical Association has convened a workgroup to consider codes specific to telemedicine practice. At the state level, telemedicine services are generally covered through Medicaid programs.[137]

As of February 2017, all states and the District of Columbia have reported providing some form of Medicaid reimbursement for telemedicine services.[88,89] Add-on costs such as technical support, transmission charges, and equipment often can be included in the fee-for-service rate or reimbursed as an administrative cost.[76,88,91,104]

Another avenue is for states to require private insurance plans to cover telehealth services. As of 2017, 35 states and the District of Columbia have reported parity requiring private insurance plans to cover telehealth services and 7 other states have proposed parity laws. Of note, these laws only require parity in coverage, not in payment.[88,89] Psychiatrists should check with individual insurance carriers to verify the accepted services and reimbursement rules. The ATA provides periodic analysis of service coverage and reimbursement guides by state.[88] Psychiatrists can find assistance in identifying funding sources at various federal, national, and private websites.[88,91,138,139]

Creating a Therapeutic Virtual Space

The patient and psychiatrist sites should avoid small, poorly ventilated, dark, or noisy rooms. The room should be appropriate to the intervention to establish a therapeutic alliance. Psychotherapy sessions might warrant a comfortable but minimally decorated room to minimize distractions for the youth. Parent–child training can be facilitated with specific tools for the parent to use in giving clear instructions to the child. Diagnostic sessions can include developmentally appropriate implements, such as a desk and crayons to assess the child's fine motor skills, creativity, and attention span. A small selection of simple toys will help to determine the child's interpersonal and communication skills. Noisy, multiple-component, and messy toys should be avoided because the sensitive microphones will pick up the noise and compromise conversation.

The room should be large enough for at least 1 to 2 adults to be included on screen with the youth. Too large a room, such as a conference room, might allow the youth to wander and preclude maintaining a presence on screen. A medical examination room might overstimulate the youth and risk damage to equipment. One approach to ensure adequate room size and configuration is to communicate the specific room requirements to remote sites before clinical services commence, and then ask a staff member to send a picture while sitting in a chair approximately 8 feet from the camera, facing away from a window. Lighting is crucial so that the entire room can be easily visualized. Overhead fluorescent lights can cast shadows. Natural lighting can change during the day, interfering with the interactions.

"Telepsychiatry etiquette" includes all participants on camera at the 2 sites; if the camera span is too narrow to include all participants, each participant should be identified initially and then when speaking. Families must give permission for observers to be present at the psychiatrist's site.

Youth are dependent on their parents to access care, so the psychiatrist should establish a therapeutic alliance with the youth and the parent. This includes introducing and explaining telepsychiatry in developmentally appropriate terms. The youth and parents should feel that their perspectives are understood. Developing a therapeutic alliance can be challenging when working in person with children with developmental or disruptive behaviors or adolescents who feel alienated. The technology might add another challenge to establishing an alliance. The psychiatrist should ensure that bandwidth is adequate to transcend this challenge, so that visual, auditory, and interactional cues are adequate to understand the youth, convey empathy, respond fluidly, and show variability in emotional tones. Insufficient bandwidth interferes with developing a therapeutic alliance by producing pixilation, delay of the audio signal, and desynchrony of the video and audio signals. When psychiatrists are unsure of the patient's response based on visual cues, they should seek verbal confirmation of their observation and interpretation from the youth or accompanying adults.

Adequate bandwidth ensures high-resolution, synchronized transmission so that the psychiatrist can use real-time changes in visual and auditory cues to determine the youth's affective state, communication, and interpersonal relatedness. High-quality microphones, placed to pick up voices but not ambient noise, facilitate the development of rapport by transmitting a clear signal. Sound quality improves by softening hard surfaces, such as placing carpeting on the floor, draperies on the windows, and sound panels or textiles on the walls. A sound machine outside the room decreases interference from outside noise and increases auditory privacy.

Adequate bandwidth facilitates the accurate assessment of affect, speech, tremors, tics, fine motor control, and neuroleptic-induced abnormal movements. Administration of the Abnormal Involuntary Movement Scale through videoconferencing has shown reliability comparable to its administration in person.[140]

As mentioned earlier, cameras with pan, tilt, and zoom capabilities facilitate the development of a therapeutic alliance.[67,121] Control of the camera at the patient site assists in evaluating dysmorphology and developmental anomalies by zooming in on facial features and assessing motor and activity skills by following the patient around the room.

Assessing eye contact is an essential component of the developmental assessment of youth and is challenging during an ITV encounter because of placement of the camera above or below the monitor. The psychiatrist should determine whether the child's apparent decreased eye contact represents a technical limitation or clinical impairment and query the youth and parent about the ability to sustain eye contact. The psychiatrist can optimize the patient's experience of eye contact by alternating the gaze between the monitor and camera during the session. If the psychiatrist uses 2 monitors, one for the ITV interaction and one for the medical record, vertical placement of the monitors with the camera between them will force eye contact as the

psychiatrist alternately gazes between the 2 monitors and past the camera.[68]

The telepresenter at the patient site can facilitate development of a therapeutic alliance. The telepresenter should be organized and flexible in assisting with tasks during and between sessions, such as assisting with management of the youth, obtaining vital signs, ordering laboratory tests, requesting school records, and triaging medication refill requests. Telepresenters can help psychiatrists to learn about the community and share observations that might be difficult to see through the camera or after the session. However, in smaller communities, the telepresenter might be well known to the family, which can raise concerns about confidentiality and compromise the ability to develop a therapeutic alliance.

Building therapeutic alliances at the community level involves interacting with general psychiatrists, PCPs, local therapists, school personnel, and other families. Involving these stakeholders in appointments or having phone contact can help psychiatrists learn about their patients, feel connected to the community, and build confidence in referral sources.

Telepsychiatry Evidence Base

The psychiatrist and patient sites should ensure that care delivered through ITV is consistent with established guidelines of care for child and adolescent psychiatry. Methods are needed to evaluate the care provided, including process variables (e.g., appointments kept or cancelled, satisfaction, relationship) to assess the service delivery,[106,141] participants' perspectives,[37,38,142] and outcome variables (e.g., syndromal recovery, symptom reduction, academic progress) to assess patients' progress.[23,51] Patient portals can be an inexpensive and easy approach to collecting rating scales and for providing psychoeducation materials and records from referring providers.[143] The current evidence base for telepsychiatry with youth is presented in Table 1.

Pharmacologic Care. Pharmacotherapy is one of the most frequently requested telepsychiatry services, although the evidence base supporting its effectiveness is limited.[144] Therefore, guidelines for pharmacotherapy with youth are extrapolated from systematic studies with adults[145,146] and youth[23,147] and descriptive reports with youth.[43,63]

A psychiatrist might provide pharmacotherapy through various models of care including direct service, consultation to a PCP, collaboration with midlevel mental health providers, or some combination of these. The psychiatrist should ensure that the infrastructure at the patient site supports the chosen model, establish processes that ensure effective communication between the patient and psychiatrist sites, maintain communication with other providers, guide medical record documentation, and maintain compliance with regulatory guidelines.[79,80,148] Any need to modify best practices to accommodate service delivery through ITV should be documented along with the rationale.

There are several logistical issues in establishing a telepharmacotherapy service.[63,67,149] Information sharing is best accomplished with a shared electronic medical record, although other approaches that ensure confidentiality and security of data are used. The psychiatrist can address patient education and medication consent during the telepsychiatry encounter and can be assisted by the telepresenter.[63,67,94] Procedures are needed to share documentation of the session with the site and ideally with the PCP.

Procedures for prescribing noncontrolled medications include e-prescribing, calling prescriptions to the pharmacy, or sending hard copies to the family or pharmacy. Some programs prefer that prescriptions be sent to the patient site for their distribution to the family. As noted earlier, controlled medications, including Schedule II stimulants, have additional regulations under the Ryan Haight Online Pharmacy Consumer Protection Act of 2008.[109,150] Psychiatrists should become familiar with this federal legislation and state guidelines while awaiting clarification from the DEA.

Monitoring the effects of psychotropic medications and managing their side effects require procedures at the psychiatrist's and patient's sites to obtain vital signs, order laboratory tests, or conduct other assessments. Ideally, these tasks would be managed at the patient site, but some nonmedical sites might collaborate with a local medical clinic to assist with monitoring. Psychiatrists can assess abnormal movements through ITV with some minimal assistance from staff at the patient site.[140] Alternatively, local nursing staff can be trained in this assessment. A video is available from the Northern Arizona Regional Behavioral Health Association at www.rbha.net/presentations/AIMSDemo/player.html. Rating scales can be made available for the psychiatrist to use in assessing treatment response.[62,143] If the psychiatrist's schedule does not accommodate unanticipated or increased visits, for example, to assess youth after the initiation of antidepressant medications,[151] then staff at either site can provide telephone, ITV, or in-person follow-up visits and communicate findings to the psychiatrist. Planning for unanticipated issues is a necessary component of pharmacotherapy. Psychiatrists and staff at the patient site should develop procedures for medication refills and reports of adverse medication effects.

Psychotherapeutic Care. Requests for psychotherapy services through ITV (teletherapy) for children and adolescents are increasing. Standard practice guidelines for adult psychotherapy should direct teletherapy[79,80] while awaiting formal guidelines with youth.

No specific theoretical orientation or approach for teletherapy has been indicated or contraindicated, and psychiatrists should adapt best practices and evidence-supported approaches from the in-person setting. Cognitive-behavioral approaches appear most common and relevant given their structure and skills-building focus. As in traditional treatment, best practices often include working alone with the youth and together with the parent. Telepresenters assist with managing the session, such as who participates and when, and take steps to ensure privacy. In home-based settings, it is important to acknowledge the parent's role in managing the session. Teletherapy requiring direct one-on-one interaction (e.g.,

play therapy) requires considerations for child characteristics and the setting. Behavioral interventions require coaching of parents in behavior training such as reinforcement or timeout strategies.

Information regarding the effectiveness of teletherapy is limited but growing.[69,152-156] Clinicians have shown high fidelity to manual-based interventions.[157,158] Reviews of treatment outcome studies have concluded that teletherapy is feasible, applicable to diverse populations, tolerable in different therapeutic formats, and acceptable to users with outcomes that are comparable to in-person treatment.[152,155]

Most teletherapy studies with young people are descriptive, indicating that teletherapy is feasible, acceptable, and well tolerated.[69,159] In 10 outcome studies ranging from feasibility trials to pre-post designs and a few randomized controlled trials, PCPs and families endorsed high levels of satisfaction with therapy.[20,46,65,69,160] Several randomized trials are noteworthy. Nelson *et al*[20] found comparable decreases for childhood depressive symptoms treated with 8 sessions of cognitive-behavioral therapy delivered through ITV versus in person. Storch *et al.*[21] found superior outcomes for youth diagnosed with obsessive-compulsive disorder who were treated through teletherapy compared with youth treated in person. Outcomes of the behavioral treatment of tics through ITV also appear comparable to in-person treatment.[22] Two pre- to post-intervention outcome studies have suggested the benefit of treatment delivered through ITV including behavior management training[24,25] and consultation to PCPs in the psychiatric care of young patients.[29] Five small randomized trials have demonstrated potential effectiveness of providing family or parenting interventions through ITV.[24,25,27,49,99]

Consultation and Psychosomatic Care. Teleconsultation to PCPs concerning mental health care of patients with medical illness is well established for adults.[36,62] Teleconsultation regarding the behavioral and mental health care of children with medical conditions[42,161] developmental disorders[42] and special needs[162] is emerging. The preliminary evidence supports the feasibility and acceptability of providing behavioral interventions through ITV for conditions such as feeding disorders[53] diabetes,[58,59] and obesity.[54,57,60] Given the paucity of child mental health specialists[4,12,13,163] and the development of the pediatric medical home[3,93,164] teleconsultation for psychosomatic medicine appears promising, but further experience is needed.

Adaptation to Nonclinical Settings

There is a long tradition of moving mental health services out of the traditional clinic and into the community. A natural next step for telepsychiatry is to offer services to more naturalistic and ecologically valid settings—settings that are often more convenient for youth and their families and provide some assistance for staff involved in youths' care. Schools and correctional settings are the most common community settings in which services are provided, and services in the home are increasing. Psychiatrists should establish their model of care appropriate to the community setting and clarify their role to those involved in the child's care.

In community settings, patient privacy, security of information, and an appropriate sound-proof space are more difficult to regulate; also, medical personnel might not be available to obtain vital signs and provide medical monitoring. The psychiatrist should work with staff and family to determine a protocol to ensure that medical monitoring of medications occurs in a timely manner. As in other settings, the psychiatrist should determine how the patient receives medications, particularly controlled substances. In case of equipment failure, the psychiatrist should determine a procedure to ensure prompt patient contact (i.e., telephone contact with family or staff) and a plan for continuity of care.

In community settings, it is important that an emergency intervention protocol be established before initiating care and that all persons involved in the patient's care be informed. All documentation should be maintained at the psychiatrist site, and the psychiatrist should determine whether specific documentation also should be maintained at the patient site. Community settings will require guidelines to ensure security of private medical information.

School-Based Telepsychiatry. School-based mental health clinics provide services to more youth than outpatient clinics, with minimal disruption to classroom time or demands on the parent's workday.[165,166] In communities with limited access to mental health professionals, especially psychiatrists, school-based telepsychiatry can provide an array of services and allows the psychiatrist to be efficiently involved in student evaluation and multidisciplinary planning with school personel.[96,120] School-based telepsychiatry services have demonstrated benefit for students and staff.[96,97,123,167]

The psychiatrist should obtain knowledge of school culture, define the model of care, and clarify the psychiatrist's role and expectations within the school system. Potential services include evaluations, collaborations with the youth's PCP, medication management, psychosocial interventions with students and families, evaluations for support services, and continuing education for staff and consultation on classroom-specific and general school issues.[97,168] When helping the school address an adverse event, such as the untimely death of a student or teacher, natural disaster, or violence, psychiatrists should provide services consistent with in-person consultations and standard protocols.

FERPA[112] specifies privacy rules for accessing student health information and applies to telepsychiatry. FERPA should guide determination of the infrastructure for telepsychiatry services, including privacy of the interview room, which can be challenging in overcrowded schools.[97] Staff accompanying the youth should have a mental health or medical background (i.e., school counselor or school nurse), and participating staff must be educated about protected health information. Documentation and records must be maintained in a private and secure location (e.g., nurses' station or counselor's office) and not be included in educational records.[169] Informed consent should consist of the legal guardian and the patient (if older than the age of

majority).[96,105,148] The consent process should be conducted by the psychiatrist with the patient and guardian in real time according to local, regional, and national laws[79] and in compliance with the minors' access to mental health services in the absence of parental knowledge and consent. The school clinician or nurse can assist in obtaining consents. If the model of care involves direct service, then the psychiatrist must determine whether the psychiatrist or PCP will provide prescriptions and how medications will be provided during the summer.

Telepsychiatry in Juvenile Corrections. Youth involved in the juvenile justice system experience psychiatric disorders at a rate far exceeding general population rates.[170] Correctional programs that lack access to psychiatric services are increasingly obtaining services through ITV.[98,171]

Similar to in-person correctional services, psychiatrists delivering services through ITV require knowledge of the legal process in the youth's jurisdiction, especially whether the patient's status is pre- or post-adjudication. This might require virtual meetings with the youth's legal counsel. The psychiatrist should clarify with the patient that he/she is subject to "dual agency" status, that is, responsible to serve the patient and to assist the facility. Then, the psychiatrist must clarify his/her role as a treating clinician or forensic examiner, that he/she is a mandated reporter regarding abuse, and that all information can be accessed by the court. The psychiatrist must work with legal counsel and the facility to obtain consent for services from the legal guardian and patient, which could require a videoconference depending on the facility's regulations.

Protecting confidentiality in correctional settings is challenging. A virtual tour of the site using a mobile device can be helpful to view the records room, examination room, or other relevant service-related space. Digital records management also should be clarified.

Occasional ITV meetings can help correctional staff to understand the needs of mentally ill juvenile offenders, such as the need for a suicide watch, protection from the general community, or monitoring medication side effects. The correctional setting might require staff to chaperone the youth during the sessions. Youth are often concerned about privacy and might be more comfortable if chaperoned by clinical staff rather than security staff. Added benefits are having 2 clinicians to model therapeutic techniques and to align staff, which is critical in the correctional setting.

Home-Based Telepsychiatry. Home-based telemental health has been safely and successfully implemented with adults with serious psychiatric disorders.[130] Preliminary work suggests that home-based teletherapy with youth and families is feasible, acceptable, and effective[99,100,149] and might be especially relevant for children who do not tolerate traveling outside the home or to provide continuity of care for families who relocate, such as military families. Using laptop computers and mobile devices in the home offers the potential to observe children's behaviors in their naturalistic setting and to develop interventions in the setting where they will be used.[26,100]

Before initiating home-based services, the psychiatrist should determine whether the family is appropriate for home-based care. Particular attention should be paid to privacy because it is difficult to find an isolated, sound-proof space where conversations are not overheard by others, intentionally or unintentionally. The psychiatrist should develop a safety plan[130] consisting of the physical location and address of the patient in case emergency services are required and consent regarding contact of community resources in case of an emergency. A written informed consent, specific to using home-based telepsychiatry, should be obtained. The psychiatrist should inform the patient's PCP of home-based services and elicit collaboration regarding monitoring the youth's status. Home-based telepsychiatry services should be avoided if there is a serious concern for patient safety and/or if the family does not consent to developing the safety plan. This assessment of appropriateness should be ongoing, because circumstances can change over time.

There are some relative contraindications for home-based telepsychiatry, including child custody assessments, forensic evaluations, investigating allegations of abuse or neglect, family therapy with a history of interpersonal violence in the family, and/or a volatile parent. The child might not feel free to be candid about his/her environment or circumstance. In the home environment, the psychiatrist will have less ability to redirect the situation should the parent become upset. Some children with developmental disorders might not tolerate the ITV platform.[26]

The patient and family should be given written information regarding the operation of equipment and how to address technical difficulties, because they will not have additional technical support available to them. A backup plan in case of technical difficulties is needed.

Training in Telepsychiatry

Greater clarification and standardization of legal and regulatory issues and the increased availability of affordable consumer-grade ITV platforms have made it more reasonable for child and adolescent psychiatry residency programs to develop ITV programs based on established clinical and technical guidelines.[18,19,79] However, guidelines describing the use of ITV in curriculum development and adapting training and evaluation goals and objectives to meet the Accreditation Council for Graduate Medical Education (ACGME) Milestone competencies are limited, but increasing.

The goals of ITV training programs are multiple: address the growing demands for access to culturally sensitive psychiatric services and develop a workforce of child and adolescent psychiatrists and PCPs who are proficient with the use of creative technologies in meeting youths' mental health care needs. The objectives of the ITV training curriculum are to achieve the training competencies and capacity for trainee evaluation as described by the ACGME Milestone training competencies for child and adolescent psychiatry[172] that include psychiatric evaluation, medical knowledge, systems-based practice, practice-based learning and improvement, professionalism, and interpersonal and communication skills. In addition, the curriculum would

require evaluation of trainee competencies in the 6 focus areas of the ACGME Clinical Learning Environment Review Program[173]: patient safety, health care quality, clinical transitions, supervision, duty hours, and fatigue and professionalism.

Academic leadership representing the American Psychiatric Association, AACAP, and the ATA are developing standardized frameworks for ITV training programs to ensure that evidence-based outcome metrics support the teaching and evaluation guidelines of the ACGME.[174-176] Emerging ITV training programs have demonstrated that didactic teaching of residents, fellows, and students includes effective variations of clinical service learning protocols, integrating selected articles on telepsychiatric care, and a problem- and case-based learning curriculum that uses clinical vignettes to stimulate learning, critical appraisal, and guide the generation of clinical formulation and knowledge integration for all aspects of ITV training.[101,177-182] Godleski *et al.*[183] described a national ITV program for trainees in collaboration with the US Department of Veterans Affairs in which technology-enabled learning includes web-based training modules, ITV consultation simulation training, satellite broadcasts of live educational meetings, and teleconferenced evidence-based journal clubs. While awaiting a standardized framework for ITV training, child and adolescent residency programs should consider using these established teaching approaches to introduce trainees to telepsychiatry practice.

CLINICAL UPDATE LIMITATIONS

The AACAP Clinical Updates are developed to assist psychiatrists in decision making. The information in this update is not intended to define the standard of care or guarantee successful treatment of individual patients, nor should the information be deemed inclusive of all proper methods of care or exclusive of other methods of care directed at obtaining the desired results. This Clinical Update does not usurp sound clinical judgment. The ultimate judgment regarding the care of a particular patient must be made by the clinician in light of all the circumstances, values, and preferences presented by the patient and his/her family, the diagnostic and treatment options available, and the accessible resources. &

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AACAP Clinical Updates are developed by AACAP committees under the direction of the AACAP CQI, with review by representatives of multiple constituent groups including topic experts, AACAP members, other relevant AACAP committees, the AACAP Assembly of Regional Organizations, and the AACAP Council. Final approval for publishing Clinical Updates as an AACAP Official Action is conferred by the AACAP Council. The development process for Clinical Updates is described on the AACAP website (www.aacap.org).

The primary intended audience for AACAP Clinical Updates is child and adolescent psychiatrists; however, the information presented also could be useful for other medical or behavioral health clinicians.

The TPC acknowledges the following topic experts for their contributions to this update: L. Lee Carlisle, MD, Jonathan Comer, PhD, Donald Hilty, MD, and Eve-Lynn Nelson, PhD.

Jennifer Medicus, Stephanie Demian, Karen Ferguson, Bryan Shuy, and Emily Rohlffs served as the AACAP staff liaisons for the TPC and the CQI.

This Clinical Update was reviewed by AACAP members from September 2016 to October 2016.

From February 2017 to April 2017, this Clinical Update was reviewed by a consensus group convened by the CQI. Consensus group members and their constituent groups were Heather J. Walter, MD, MPH, Oscar G. Bukstein, MD, MPH, Carol Rockhill, MD, PhD, MPH, and Munya Hayek, MD (CQI); L. Lee Carlisle, MD (topic expert); D. Richard Martini, MD, Committee on Collaboration With Medical Professions, and Benjamin Shain, MD, Committee on Healthcare Access and Economics (AACAP committees); Vera Feuer, MD, and Kai-ping Wang, MD (Assembly of Regional Organizations); and Karen Pierce, MD, and Lan Chi Vo, MD (AACAP Council).

This Clinical Update was approved by the AACAP Council on May 18, 2017.

This Clinical Update is available at www.aacap.org.

Disclosures: During preparation of this Clinical Update, Kathleen Myers, MD, MPH, MS, and David Pruitt, MD, TPC Co-Chairs, and Heather J. Walter, MD, MPH, CQI Co-Chair, have had no financial relationships to disclose. Oscar G. Bukstein, MD, MPH, CQI Co-Chair, has had intellectual property with Routledge Press.

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0890-8567/$36.00/©2017 American Academy of Child and Adolescent Psychiatry

http://dx.doi.org/10.1016/j.jaac.2017.07.008

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Practice Parameter for the Assessment and Treatment of Children and Adolescents With Autism Spectrum Disorder

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Autism spectrum disorder is characterized by patterns of delay and deviance in the development of social, communicative, and cognitive skills that arise in the first years of life. Although frequently associated with intellectual disability, this condition is distinctive in its course, impact, and treatment. Autism spectrum disorder has a wide range of syndrome expression and its management presents particular challenges for clinicians. Individuals with an autism spectrum disorder can present for clinical care at any point in development. The multiple developmental and behavioral problems associated with this condition necessitate multidisciplinary care, coordination of services, and advocacy for individuals and their families. Early, sustained intervention and the use of multiple treatment modalities are indicated. J. Am. Acad. Child Adolesc. Psychiatry, 2014;53(2):237–257. **Key Words:** autism, Practice Parameters, guidelines, developmental disorders, pervasive developmental disorders

Since the first Practice Parameter for the Assessment and Treatment of Children, Adolescents, and Adults with Autism and Other Pervasive Developmental Disorders[1] was published, several thousand research and clinical articles have appeared and the diagnostic criteria for autism have changed. This Parameter revision provides the opportunity to update the previous version and incorporate new research. Because the extant body of research was performed under the *DSM-IV-TR* diagnostic schema, the evidence will be presented using that terminology. This Parameter is applicable to evaluation of children and adolescents (≤17 years of age) but often will have some relevance to adults. This document presumes basic familiarity with aspects of normal child development and child psychiatric diagnosis and treatment. Unless otherwise noted, the term *child* refers to adolescents and younger children, and *parents* refers to the child's primary caretakers regardless of whether they are the biological or adoptive parents or legal guardians.

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METHODOLOGY

The first version of this Parameter was published in 1999. For this revision, the literature search covered the period from 1991 to March 19, 2013 using the PubMed, PsycINFO, Cochrane, and CINAHL (EBSCO) databases. The initial searches were inclusive and sensitive. Search terms were a combination of MeSH headings and keywords, and the MeSH headings were adjusted to terms used by PsycINFO and CINAHL by using their thesauri.

In PubMed the MeSH terms *autistic disorder, childhood development disorders—pervasive, Asperger*,* and *Rett** and the keyword *autism* were searched. The initial search yielded 20,807 results. Then, the results were limited to English, human, *all child (0 to 18 years)*, and 1991 to March 19, 2013. Additional limits included classic article, clinical trial, comparative study, controlled clinical trial, evaluation studies, guideline, historical article, meta-analysis, practice guideline, multicenter study, randomized controlled trial, review, twin study,

and validation studies. The refined PubMed search yielded 3,613 articles.

In the PsycINFO database subject headings (focused) of *autism, autistic thinking, pervasive developmental disorders, retts syndrome, aspergers,* and keyword *autism* were searched. The initial search returned 24,875 articles and was then limited to English, *childhood: birth to age 12yrs, adolescence: age 13-17 yrs, peer reviewed journal,* and 1991 to March 19, 2013. The refined PsycINFO search yielded 9,583 articles.

In the Cochrane Database of Systematic Reviews, keywords of *autism, autistic, rett*, asperger**, or (*pervasive and disorder** and *develop**) were searched without additional limits. The Cochrane search yielded 95 articles. An additional 517 articles were retrieved from the CINAHL database, after excluding Medline articles, by searching *autistic disorder, autism, asperger syndrome, child development disorders, pervasive,* and *rett syndrome*.

A total of 13,808 articles were identified and exported to the EndNote reference management program. After removing duplicate references, the resulting yield from the comprehensive search was 9,581 articles.

The titles and abstracts of all articles were reviewed. Studies were selected for full text review based on their place in the hierarchy of evidence (e.g., randomized controlled trials), quality of individual studies, and generalizability to clinical practice. The search was augmented by review of articles nominated by expert reviewers and further search of article reference lists and relevant textbook chapters. A total of 186 articles were selected for full text examination.

CLINICAL PRESENTATION AND COURSE

Autism was first described in 1943 by Kanner[2] who reported on 11 children with an apparently congenital inability to relate to other people but who were quite sensitive to change in the nonsocial environment. Kanner emphasized that the lack of interest in people was in stark contrast to the profound social interest of normal infants. He also observed that when language developed at all, it was marked by echolalia, pronoun reversal, and concreteness. The children also exhibited unusual, repetitive, and apparently purposeless activities (stereotypies). Autism was initially believed to be a form of childhood psychosis, but, by the 1970s, various lines of evidence made it clear that autism was highly distinctive. By 1980, autism was officially recognized as a diagnosis in *DSM-III*.[3]

Under *DSM-IV-TR*, the diagnosis of autism required disturbances in each of 3 domains: social relatedness, communication/play, and restricted interests and activities with onset by 3 years of age.[4] The disturbance in social relatedness is striking and includes marked impairment in nonverbal communication, peer relationships, and social-emotional reciprocity. Impairments in communication include a delay or total lack of spoken language (without an attempt to compensate through other means) or, for verbal individuals, a marked difficulty in the ability to sustain or initiate conversation, stereotyped and repetitive (or idiosyncratic) language, and lack of developmentally appropriate make-believe or social play. Impairment in interests and activities includes encompassing preoccupations, adherence to apparently nonfunctional routines or rituals, stereotypies and motor mannerisms, and persistent preoccupation with parts of objects.

There is variability in the age at which children may present the features essential for this diagnosis.[5] Preschool children with autism typically present with marked lack of interest in others, failures in empathy, absent or severely delayed speech and communication, marked resistance to change, restricted interests, and stereotyped movements. Common parental concerns include a child's lack of language, inconsistencies in responsiveness, or concern that the child might be deaf. In children with autism, social and communication skills usually increase by school age; however, problems dealing with change and transitions and various self-stimulatory behaviors (sometimes including self-injury) also may become more prominent during this time.[6] In adolescence, a small number of individuals with autism make marked developmental gains; another subgroup will behaviorally deteriorate (e.g., tantrums, self-injury, or aggression). Children and adolescents with autism have an increased risk for accidental death (e.g., drowning).[7] Predictors of ultimate outcome include the presence of communicative speech by 5 years of age and overall cognitive ability (IQ). Evidence that earlier detection and provision of services improves long-term prognosis makes early diagnosis particularly important.[8]

The *DSM-IV-TR* category of pervasive developmental disorders included autistic disorder, Rett's disorder, Asperger's disorder, childhood disintegrative disorder, and pervasive developmental disorder not otherwise specified (PDD-NOS). Rett's disorder was described by Andreas

Rett in 1966 in a series of girls with unusual hand washing/wringing stereotyped mannerisms. In most cases, Rett's disorder is caused by mutations in the gene *MeCP2* (methyl-CpG-binding protein 2).[9] Head circumference and development are normal at birth and during infancy. Before 4 years of age, head growth decelerates, purposeful hand movements are lost, and characteristic stereotyped hand movements (wringing or washing) develop.[10] The central role of *MeCP2* mutations in this disorder makes it clear that boys may carry the same mutations that lead to the full syndrome in girls, but with differing clinical manifestations ranging from fatal encephalopathy[11] to progressive but nonfatal developmental disorder[12] to nonspecific X-linked intellectual disability.[13]

Childhood disintegrative disorder (CDD) was first described by Theodor Heller in 1908.[14] This condition is characterized by a period of at least 2 years of normal development, followed by a marked deterioration and clinically significant loss of at least 2 skills in the areas of receptive or expressive language, social skills, toileting skills, play, or motor skills.[14] The onset of CDD is highly distinctive, typically occurring at 3 to 4 years of age and can be gradual or abrupt. Sometimes parents report that the child experienced a period of anxiety or dysphoria before onset of CDD symptoms. Once established, CDD resembles autism in clinical features,[14] but the outcome is poor. The child typically becomes mute or, at best, regains limited speech.

Asperger's disorder was described in 1944 but not officially recognized until *DSM-IV*. Unlike children with autism, individuals with Asperger's disorder do not present with delays in language acquisition or with unusual behaviors and environmental responsiveness during the first years of life. Consequently, parents often have no concerns about their child's early development.[15] Asperger originally described children who were precocious in learning to talk but who then talked in a formal, pedantic, 1-sided way, often about a topic of circumscribed interest.[16] Social difficulties arise due to this idiosyncratic, 1-sided social style. The outcome in Asperger's disorder generally appears to be better than that for autism, although this may, in part, relate to better cognitive and/or verbal abilities.[8,15]

The term pervasive developmental disorder not otherwise specified (PPD NOS) (also sometimes termed atypical PDD or atypical autism) encompasses subthreshold cases on the autism spectrum, e.g., cases in which full criteria for one of the explicitly defined PDDs are not met, but the child has problems in social interaction and some difficulties in communication or restricted patterns of behavior. Although studies are limited, individuals with PDD-NOS typically have been characterized as less impaired, having fewer repetitive behaviors, and having a better prognosis than persons with autism.[16]

DSM-IV-TR to *DSM-5*

Because there was little evidence to support reliable and replicable diagnostic differences among the various *DSM-IV-TR* PDDs,[17] the *DSM-5* workgroup on neurodevelopmental disorders subsumed the prior categories under the new diagnosis of autism spectrum disorder (ASD) in the *DSM-5*. Diagnostic domains were reduced from 3 to 2, focusing on social communication and interaction deficits and restricted, repetitive patterns of behaviors and interests. The strict requirement for onset before 3 years of age was changed to onset in the early developmental period, the occurrence of potential sensory abnormalities was incorporated, and a severity scale for impairments in each of the 2 core domains was included. Diagnostic reporting now includes specifiers that may enhance descriptive subtyping of the population, including specifiers for the presence or absence of intellectual impairment, language impairment, catatonia, and known medical, genetic, or environmental factors. The new criteria allow for a history of symptoms that may not be present currently, recognizing that through intervention or normal development some children with autism no longer present some symptoms later in life. It will be some years before the implications of these changes for autism prevalence and other facets of assessment and treatment can be fully assessed.

EPIDEMIOLOGY

Many studies, mostly conducted outside the United States, have examined the prevalence of autism or, less commonly, ASD or PDDs.[17] Of the approximately 36 surveys of autism available, prevalence estimates for autistic disorder range from 0.7 in 10,000 to 72.6 in 10,000.[18] The variability in estimates reflects different factors, including changes in definition. When the 18 surveys conducted since the introduction of the *DSM-IV* criteria are considered, estimates ranging from 10 in 10,000 to 16 in 10,000, with a median prevalence of 13 in 10,000, are obtained.[18] The most recent study by the Centers for Disease

Control and Prevention estimated the prevalence of ASD in the United States as 11.3 in 1,000.[19] Contrary to popular perception, data from 7 surveys suggest that rates of Asperger's disorder are in fact *lower* than for typical autism (2.6 in 10,000 or one fifth as common as typical autism).[18]

Recent observations of higher rates of autism have led to concern that the prevalence of this disorder may be increasing. Various factors may contribute to an apparent increase,[20] such as differences in diagnostic criteria and diagnostic practices, the age of children screened, and the location of the study (see Fombonne[18] for discussion).

Autism is approximately 4 times more common in males than in females, but females with autism tend to have more severe intellectual disability. Although the original report by Kanner[2] suggested a predominance of autism in more educated families, subsequent work has not shown this. Current approaches to the diagnosis of ASD appear to work well internationally and cross-culturally,[3] although cultural aspects of the condition have not received much attention.[21] Within the United States, there may be underdiagnosis in some circumstances (e.g., in disadvantaged inner-city children).[22]

ETIOLOGY

Neurobiology

Electroencephalographic (EEG) abnormalities and seizure disorders are observed in as many as 20% to 25% of individuals with autism.[23] The high rates of epilepsy suggest a role for neurobiologic factors in autism.[13,24,25] The number of areas affected by autism suggests that a diverse and widely distributed set of neural systems must be affected. Although various theories have posited potential loci for difficulties, definitive data are lacking. Postmortem studies have shown various abnormalities, particularly within the limbic system.[25] Functional magnetic resonance imaging procedures have identified difficulties in tasks involving social and affective judgments and differences in the processing of facial and nonfacial stimuli.[26] Structural magnetic resonance imaging has shown an overall brain size increase in autism, and diffusion tensor imaging studies have suggested aberrations in white matter tract development.[27] One of the most frequently replicated neurochemical findings has been the elevation of peripheral levels of the neurotransmitter serotonin. The significance of this finding remains unclear. A role for dopamine is suggested given the problems with overactivity and stereotyped mannerisms and the positive response of such behaviors to neuroleptic medications.[28]

During the past decade, much concern has focused on vaccines as a possible postnatal environmental cause for ASD, with the concern focused on the possibility that the measles-mumps-rubella vaccine may cause autism or that thimerosal (a mercury-containing preservative now removed from all single-dose vaccines) might do so.[29] The preponderance of available data has not supported either hypothesis (see Rutter[30] for a review). However, a possible role of the immune system in some cases of autism has not been ruled out.[31]

Neuropsychological correlates of ASD include impairments in executive functioning (e.g., simultaneously engaging in multiple tasks),[32] weak central coherence (integrating information into meaningful wholes),[33] and deficits in theory-of-mind tasks (taking the perspective of another person).[34]

Familial Pattern and Genetic Factors

The high recurrence risk for autism in siblings and even higher concordance for autism in identical twins has provided strong support for the importance of genetic factors.[30] Higher rates of autism are consistently noted in siblings of affected children. Recurrence risk has typically been cited at 2% to 10%, but a recent prospective longitudinal study has reported a rate of 18.7% when the broad autism spectrum is considered.[35] Identified risk factors for ASD appear to include closer spacing of pregnancies, advanced maternal or paternal age, and extremely premature birth (<26 weeks' gestational age).[36-38] In addition, high rates of learning/language problems and social disability and a possible increase in the risk for mood and anxiety disorders has been noted in family members.

It is now clear that multiple genes are involved in autism.[30,39] Over the past several years, studies have supported a role for common (present in >5% of the general population) and rare genetic variations contributing to autism.[40] The rate of progress in gene discovery has been increasing rapidly over the past several years and these results are already beginning to influence clinical practice with regard to genetic testing, as noted below.[41]

DIFFERENTIAL DIAGNOSIS

ASD must be differentiated from specific developmental disorders (including language disorders),

sensory impairments (especially deafness), reactive attachment disorder, obsessive-compulsive disorder, intellectual disability, anxiety disorders including selective mutism, childhood-onset schizophrenia, and other organic conditions.

A diagnosis of autism is made when the requisite *DSM-5* symptoms are present and other disorders have been adequately ruled out. In autism it is typical for parents to report that there was no period of normal development or that there was a history of unusual behaviors (e.g., the child seemed too good and undemanding as an infant). Less commonly, a period of apparently normal development is reported before a regression (loss of skills). The topic of regression in autism remains an active area of current investigation. Developmental regression is typical in Rett syndrome but also can be observed in other conditions (e.g., childhood-onset schizophrenia or degenerative CNS disorders).

Developmental language disorders have an impact on socialization and may be mistaken for an ASD. The distinction is particularly difficult in preschool children. However, 2 behaviors have been reported to consistently differentiate autistic children from language-impaired peers at 20 and 42 months of age, namely pointing for interest and use of conventional gestures.[42] Similarly, differentiating mild to moderate developmental delay from ASD may be difficult, particularly when evaluating the younger child (see Chawarska and Volkmar[42] for a detailed discussion). One study identified some items on the Autism Diagnostic Interview that differentiated between these 2 groups at 24 months, especially directing attention (showing) and attention to voice (Table 1).[43-56] At 36 months, 4 items correctly classified all subjects: use of other's body, attention to voice, pointing, and finger mannerisms. From 38 to 61 months, children with autism were more likely to show impaired nonverbal behaviors (such as eye contact) to regulate social interaction. In childhood, there may be diagnostic overlap between ASD and attention-deficit/hyperactivity disorder, making the differential diagnosis difficult.[57,58]

Children with reactive attachment disorder may exhibit deficits in attachment and therefore inappropriate social responsivity, but these usually improve substantially if adequate caretaking is provided. Obsessive-compulsive disorder has a later onset than ASD, is not typically associated with social and communicative impairments, and is characterized by repetitive patterns of behavior that are ego dystonic. Symptoms that characterize anxiety disorders, such as excessive worry, the need for reassurance, the inability to relax, and feelings of self-consciousness, are also seen in ASD, particularly in higher functioning individuals. However, the 2 conditions can be differentiated by the prominent social and communicative impairments seen in ASD but not anxiety disorders, and the developed social insight of children with anxiety disorders, which is not seen in ASD. Differentiating childhood schizophrenia from autism can be difficult, because they are characterized by social impairments and odd patterns of thinking. However, florid delusions and hallucinations are rarely seen in autism.

COMORBIDITIES

Given difficulties in communication (e.g., mutism) and cognitive impairment, issues of comorbidity in ASD can be quite complex. The process of diagnostic overshadowing (the tendency to fail to diagnose other comorbid conditions when a more noticeable condition is present) may occur.[59] Attempts to determine comorbidity prevalence in ASD have been hampered by methodologic issues, although most studies have shown increased rates of anxiety and attentional disorders.[60]

In most epidemiologically based samples of persons with autistic disorder, approximately 50% exhibit severe or profound intellectual disability, 35% exhibit mild to moderate intellectual disability, and the remaining 20% have IQs in the normal range.[18] For children with autistic disorder, verbal skills are typically more impaired than nonverbal skills. For children with Asperger's disorder, the reverse pattern is sometimes observed and the profile of nonverbal learning disability may be present.[61] Clearly, intellectual impairment is not an essential diagnostic feature of autism, and thus it is necessary and important for the diagnosis of intellectual disability to be made.

A range of behavioral difficulties can be observed in ASD, including hyperactivity, obsessive-compulsive phenomena, self-injury, aggression, stereotypies, tics, and affective symptoms. The issue of whether these qualify as additional disorders is complex.[3] Affective symptoms are frequently observed and include lability, inappropriate affective responses, anxiety, and depression. Impairments in emotion regulation processes can lead to under- and

TABLE 1 Summary of Selected Assessment Instruments for Autism Spectrum Disorder[a]

Scale (see legend)	Uses	Age Range	Method of Administration	Population Studied	Scale characteristics	Reference
ABC	screening	children	parent rated	AD	57 items, scale 1-4	Krug *et al.*, 1980[43]
CARS	screening	children	clinician rated	AD	15 items, scale 1-4	Schopler *et al.*, 1980[44]
M-CHAT	screening	toddlers	parent rated	AD	23 items, yes/no	Robins *et al.*, 2001[45]
CSBS-DP-IT-Checklist	screening	toddlers	parent rated	AD	24 items	Wetherby *et al.*, 2008[46]
ASQ	screening	child/adult	parent rated	AD/AspD	40 items, yes/no	Berument *et al.*, 1999[47]
AQ	screening	child/adult	self or parent rated	AspD	50 items, scale 0-3	Baron-Cohen *et al.*, 2001[48]
CAST	screening	4-11 years	parent rated	AspD	37 items, yes/no	Scott *et al.*, 2002[49]
ASDS	screening	5-18 years	parent or teacher rated	AspD	50 items, yes/no	Myles *et al.*, 2000[50]
GADS	screening	3-22 years	parent or teacher rated	AspD	32 items, scale 0-3	Gilliam, 2001[51]
ASDI	screening	child/adult	interview + clinician rated	AspD	50 items, yes/no	Gillberg *et al.*, 2001[52]
SRS	screening	4-18 years	parent or teacher rated	AspD	65 items, scale 1-4	Constantino *et al.*, 2003[53]
ADI	diagnostic	child/adult	interview + clinician rated	AD/AspD	see text	Lord *et al.*, 2003[54]
DISCO	diagnostic	child/adult	interview + clinician rated	AD/AspD	see text	Wing *et al.*, 2002[55]
ADOS	diagnostic	child/adult	semi-structured interactive session	AD/AspD	see text	Lord *et al.*, 1994[56]

Note: ABC = Autism Behavior Checklist; AD = autism disorder; ADI = Autism Diagnostic Interview–Revised; ADOS = Autism Diagnostic Observation Schedule; AQ = Autism Quotient; ASDI = Asperger Syndrome Diagnostic Interview; ASDS = Asperger Syndrome Diagnostic Scale; AspD = Asperger's disorder; ASQ = Autism Screening Questionnaire; CARS = Childhood Autism Rating Scale; CAST = Childhood Autism Screening Test; M-CHAT = Checklist for Autism in Toddlers; CSBS-DP-IT-Checklist = Communication and Symbolic Behavior Scales Developmental Profile Infant-Toddler Checklist; DISCO = Diagnostic Interview for Social and Communication Disorders; GADS = Gilliam Asperger's Disorder Scale; Parent = primary caregiver; SRS = Social Responsiveness Scales.

[a]*Note that these instruments may need to be revised to provide evidence of validity for DSM-5 ASD and supplement but DO NOT REPLACE clinical diagnosis.*

over-reactivity.[62] Overt clinical depression is sometimes observed and this may be particularly true for adolescents with Asperger's disorder.[15] Case reports and case series have suggested possible associations with bipolar disorders and tics and Tourette's syndrome. Bullying involvement, including victimization and perpetration, occurs more frequently in general educational settings.[63]

Attentional difficulties also are frequent in autism, reflecting cognitive, language, and social problems.[64] The historical prohibition on making an additional diagnosis of attention-deficit/hyperactivity disorder in those with ASD has been removed in the *DSM-5*. Notably, a subset of children with ASD with elevated scores for hyperactivity showed a 49% response rate in a large randomized controlled trial of methylphenidate treatment.[64]

EVIDENCE BASE FOR PRACTICE PARAMETERS

In this Parameter, recommendations for best assessment and treatment practices are stated in accordance with the strength of the underlying empirical and/or clinical support.

- Clinical standard [CS] is applied to recommendations that are based on rigorous empirical evidence (e.g., meta-analyses, systematic reviews, individual randomized controlled trials) and/or overwhelming clinical consensus.
- Clinical guideline [CG] is applied to recommendations that are based on strong empirical evidence (e.g., nonrandomized controlled trials, cohort studies, case-control studies) and/or strong clinical consensus.
- Clinical option [OP] is applied to recommendations that are based on emerging empirical evidence (e.g., uncontrolled trials or case series/reports) or clinical opinion but lack strong empirical evidence and/or strong clinical consensus.
- Not endorsed [NE] is applied to practices that are known to be ineffective or contraindicated.

The strength of the empirical evidence is rated in descending order as follows:

- [rct] Randomized controlled trial is applied to studies in which subjects are randomly assigned to at least 2 treatment conditions.
- [ct] Controlled trial is applied to studies in which subjects are nonrandomly assigned to at least 2 treatment conditions.
- [ut] Uncontrolled trial is applied to studies in which subjects are assigned to 1 treatment condition.
- [cs] Case series/report is applied to a case series or a case report.

ASSESSMENT

Recommendation 1. The developmental assessment of young children and the psychiatric assessment of all children should routinely include questions about ASD symptomatology [CS].

Screening should include inquiries about the core symptoms of ASD, including social relatedness and repetitive or unusual behaviors. Screening instruments have been developed that may be helpful to the clinician. Some of these instruments are completed by clinicians and others by primary caregivers (Table 1).[43-56] Screening is applicable to young children and to infants, when the diagnosis may first be considered. In some instances, screening may be relevant to older children, e.g., those who are more intellectually able and whose social disability is therefore more likely to be detected later.

Recommendation 2. If the screening indicates significant ASD symptomatology, a thorough diagnostic evaluation should be performed to determine the presence of ASD [CS].

Currently, biological diagnostic markers are not available and diagnosis rests on careful examination of the child. A standard psychiatric assessment should be followed,[65] including interviews with the child and family and a review of past records and historical information. The history and examination should be conducted with careful consideration of *DSM-5* diagnostic criteria. Although the *DSM-5* criteria are intended to be independent of age and intellect, the diagnosis of autism in infants and very young children is more challenging, and some features (e.g., stereotyped movements) may develop later.[5] Systematic attention to the areas relevant to differential diagnosis is essential. Information on the nature of changes over the course of development, e.g., in response to intervention, is helpful. The history should include a review of past and current educational and behavioral interventions and information regarding family history and relevant psychosocial issues. Consideration of possible comorbid diagnoses is an important focus of assessment.

Observation of the child should focus on broad areas of social interaction and restricted, repetitive behaviors. The child's age and developmental level may dictate some modification in assessment procedures. Clinicians should be sensitive to ethnic, cultural, or socioeconomic factors that may affect assessment.

Various instruments for the assessment of ASD have been developed (Table 1[43-56], see Coonrod and Stone[66] for a review). As a practical matter, all these instruments vary in their usefulness for usual clinical practice. Some require specific training. The use of such instruments supplements, but does not replace, informed clinical judgment.[3]

Recommendation 3. Clinicians should coordinate an appropriate multidisciplinary assessment of children with ASD [CS].

All children with ASD should have a medical assessment, which typically includes physical examination, a hearing screen, a Wood's lamp examination for signs of tuberous sclerosis, and genetic testing, which may include G-banded karyotype, fragile X testing, or chromosomal microarray. In a community sample of children with ASD, diagnostic yields were 2.5% for karyotype testing, 0.57% for fragile X testing, and 24% for chromosomal microarray.[67] Chromosomal microarray has been recommended by medical geneticists as the standard of care for the initial evaluation of children with developmental disabilities and/or ASDs.[68] These tests currently detect known abnormalities clearly associated with increased rates of ASD (e.g., 15q11-13 maternal duplications and duplications and deletions of chromosome 16p11.2) and genetic variations of uncertain significance. Recent data from a study of families with only a single affected child have shown that lower IQ is not a strong predictor of a positive chromosomal finding.[69] Any abnormal or indeterminate result from such a study warrants referral for further genetic evaluation and counseling. The yield of genetic testing in the presence of clinical suspicion is currently in the range of at least one third of cases.[70]

Unusual features in the child (e.g., history of regression, dysmorphology, staring spells, family history) should prompt additional evaluations. The list of potential organic etiologies is large but falls into the categories of infectious (e.g., encephalitis or meningitis), endocrinologic (e.g., hypothyroidism), metabolic (e.g., homocystinuria), traumatic (e.g., head injury), toxic (e.g., fetal alcohol syndrome),[4] or genetic (e.g., chromosomal abnormality). Certain developmental disorders, most notably Landau-Kleffner syndrome, also should be ruled out. In this condition, a highly distinctive EEG abnormality is present and associated with development of a marked aphasia.[71] Genetic or neurologic consultation, neuroimaging, EEG, and additional laboratory tests should be obtained when relevant, based on examination or history (e.g., testing for the *MeCP2* gene in cases of possible Rett's disorder).[72]

Psychological assessment, including measurements of cognitive ability and adaptive skills, is indicated for treatment planning and helps to frame observed social-communication difficulties relative to overall development. The results of standard tests of intelligence may show considerable scatter. Unusual islets of ability ("splinter skills") may be present. For children with autism, these sometimes take the form of unusual ability ("savant skills"), e.g., the ability to produce intricate drawings or engage in calendar calculations. For higher functioning children, areas of special interest are often present and the single-minded pursuit of these interests may interfere with the child's ability to learn. Psychological tests clarify areas of strength and weakness useful in designing intervention programs and may need to include instruments valid for a nonverbal population.[7]

Communication assessment, including measurements of receptive and expressive vocabulary and language use (particularly social or pragmatic), is helpful for diagnosis and treatment planning.[73] Occupational and physical therapy evaluations may be needed to evaluate sensory and/or motor difficulties.[74] Sleep is an important variable to assess in individuals with ASD.[75] When members of multiple disciplines are involved in assessment, it is optimal that coordination occur among the various professionals.

TREATMENT

Recommendation 4. The clinician should help the family obtain appropriate, evidence-based, and structured educational and behavioral interventions for children with ASD [CS].

Structured educational and behavioral interventions have been shown to be effective for many children with ASD[76] and are associated with better outcome.[8] As summarized in the National Research Council report,[76] the quality of the research literature in this area is variable,

with most studies using group controls or single-subject experimental methods. In general, studies using more rigorous randomized group comparisons are sparse, reflecting difficulties in random assignment and control comparisons. Other problems include lack of attention to subject characterization, generalization of treatment effects, and fidelity of treatment implementation. Despite these problems, various comprehensive treatments approaches have been shown to have efficacy for groups of children, although none of the comprehensive treatment models has clearly emerged as superior.[76]

Behavioral

Behavioral interventions such as Applied Behavioral Analysis (ABA) are informed by basic and empirically supported learning principles.[77] A widely disseminated comprehensive ABA program is Early Intensive Behavioral Intervention for young children, based on the work of Lovaas *et al.*[78] Early Intensive Behavioral Intervention is intensive and highly individualized, with up to 40 hours per week of one-to-one direct teaching, initially using discrete trials to teach simple skills and progressing to more complex skills such as initiating verbal behavior. A meta-analysis found Early Intensive Behavioral Intervention effective for young children but stressed the need for more rigorous research to extend the findings.[79] Behavioral techniques are particularly useful when maladaptive behaviors interfere with the provision of a comprehensive intervention program. In such situations, a functional analysis of the target behavior is performed, in which patterns of reinforcement are identified and then various behavioral techniques are used to promote a desired behavioral alternative. ABA techniques have been repeatedly shown to have efficacy for specific problem behaviors,[80] and ABA has been found to be effective as applied to academic tasks,[81[ut]] adaptive living skills,[82[ut]] communication,[83[ut]] social skills,[84[ut]] and vocational skills.[85[ct]] Because most children with ASD tend to learn tasks in isolation, an explicit focus on generalization is important.[86]

Communication

Communication is a major focus of intervention and typically will be addressed in the child's individualized educational plan in coordination with the speech-language pathologist. Children who do not yet use words can be helped through the use of alternative communication modalities, such as sign language, communication boards, visual supports, picture exchange, and other forms of augmentative communication. There is some evidence for the efficacy of the Picture Exchange Communication System, sign language, activity schedules, and voice output communication aids.[87[rct],88-90] For individuals with fluent speech, the focus should be on pragmatic language skills training. Children and adolescents with fluent speech may, for example, be highly verbal but have severely impaired pragmatic language skills that can be addressed through explicit teaching. Many programs to enhance social reciprocity and pragmatic language skills are currently available (Table 2; see Reichow and Volkmar[91] for an extensive review).[92-103]

Educational

There is consensus that children with ASD need a structured educational approach with explicit teaching.[76] Programs shown to be effective typically involve planned, intensive, individualized intervention with an experienced, interdisciplinary team of providers, and family involvement to ensure generalization of skills. The educational plan should reflect an accurate assessment of the child's strengths and vulnerabilities, with an explicit description of services to be provided, goals and objectives, and procedures for monitoring effectiveness. Although the curricula used vary across programs, they often share goals of enhancing verbal and nonverbal communication, academic skills, and social, motor, and behavioral capabilities. In some instances, particularly for younger children, a parent-education and home component may be important. Development of an appropriate individualized educational plan is central in providing effective service to the child and family. Efficacy has been shown for 2 of the structured educational models, the Early Start Denver Model[104[rct]] and the Treatment and Education of Autism and related Communication handicapped Children program,[105[ct]] but significant challenges remain in disseminating knowledge about effective interventions to educators.

Other Interventions

There is a lack of evidence for most other forms of psychosocial intervention, although cognitive behavioral therapy has shown efficacy for anxiety and anger management in high functioning youth with ASD.[106[rct],107[rct]] Studies of sensory oriented interventions, such as auditory integration

TABLE 2 Methods Available for the Delivery of Social Reciprocity/Pragmatic Language-Oriented Interventions

Developmental Level	Method	Notes	Reference
Infant/preschool (play based)	guided participation	adult coaching and mediation by trained peers	Schuler and Wolfberg, 2002[92]
	Do-Watch-Listen-Say	careful selection of play materials to foster participation; organization of environment to facilitate participation and cooperation	Quill, 2000[93]
	play organizers	neurotypical peers taught to encourage sharing, helping, and praising to facilitate play; some evidence of generalization	Strain *et al.*, 1977[94]
	buddy skills	teaches neurotypical peers to stay with, play with, and talk to their "buddies"; some evidence of improvement in the frequency of social communication that was generalized to other interactions	Goldstein and Wikstrom, 1996[95]
School age	social stories	state a problem and give the child an acceptable response to it; usually focuses on maladaptive behaviors; little evidence of generalization and maintenance	Gray, 2000[96]
	social skills groups	see text	Kamps *et al.*, 1997[97]
	peer network/circle of friends	typical peers taught to initiate and model appropriate social interactions; results have shown improvement in interaction and generalization to new settings	Kamps *et al.*, 1997[97]; Whitaker *et al.*, 1998[98]
Adolescence	peer network/circle of friends	see above	Whitaker *et al.*, 1998[98]; Paul, 2003[99]
	visual schedule/verbal rehearsal	using written and pictorial representations of expected activities and behavior	Klin and Volkmar, 2000[100]; Hodgdon, 1995[101]
	social skills group	see text	Paul, 2003[99]
	social thinking	addresses underlying social cognitive knowledge required for expression of related social skills; promotes teaching the "why" behind socialization	Crooke *et al.*, 2007[102]
	training scripts	scripts are provided that give the opportunity to ask questions in response to others = initiation of conversation	Klin and Volkmar, 2000[103]

training, sensory integration therapy, and touch therapy/massage, have contained methodologic flaws and have yet to show replicable improvements.[108,109] There is also limited evidence thus far for what are usually termed developmental, social-pragmatic models of intervention, such as Developmental-Individual Difference-Relationship Based/Floortime, Relationship Development Intervention, Social Communication Emotional Regulation and Transactional Support, and Play and Language for Autistic Youths, which generally use naturalistic techniques in the child's community setting to develop social communication abilities. Children with ASD are psychiatrically hospitalized at substantially higher rates than the non-ASD child population.[110] The efficacy of this intervention is unknown, although there

TABLE 3 Randomized Controlled Trials of Psychotropic Medications in Children and Adolescents With Autism Spectrum Disorder (ASD)

Agent	Study	Target Symptoms	Dose	Demographics	Significant Side Effects	Primary Outcome(s)
α_2 Agonists						
Clonidine	Jaselskis *et al.*, 1992[116]	hyperactivity, irritability, inappropriate speech, stereotypy	0.15-0.20 mg divided 3×/d	8 children 5-13 y old	hypotension, drowsiness	statistically and clinically relevant decrease in ABC Irritability subscale
Guanfacine	Handen *et al.*, 2008[117]	hyperactivity, inattention	1-3 mg divided 3×/d	7 children with ASD 5-9 y old	drowsiness, irritability	45% with >50% decrease in ABC Hyperactivity subscale
Antipsychotics						
Aripiprazole	[b]Marcus *et al.*, 2009[118]	irritability, hyperactivity, stereotypy, social withdrawal, inappropriate speech	5, 10, or 15 mg/d fixed dose	218 children 6-17 y old	somnolence, weight gain, drooling, tremor, fatigue, vomiting	56% positive response[a] for aripiprazole 5 mg vs. 35% on placebo; significant improvement in Irritability, Hyperactivity, and Stereotypy subscales
	[b]Owen *et al.*, 2009[119]	irritability, hyperactivity, stereotypy, social withdrawal inappropriate speech	5-15 mg/d flexibly dosed	98 children 6-17 y old	somnolence, weight gain, drooling, tremor, fatigue, vomiting	52% positive response[a] for aripiprazole vs. 14% on placebo; significant improvement in Irritability, Hyperactivity, and Stereotypy subscales
Haloperidol	Anderson *et al.*, 1984[120]	multiple behavioral symptoms, global functioning	0.5-4 mg/d	40 children 2-7 y old	sedation, irritability, extrapyramidal symptoms (>25%)	behavioral symptoms improved with significant decrease in 8 of 14 items of CPRS
	Anderson *et al.*, 1989[121]	multiple behavioral symptoms, global functioning	0.25-4 mg/d	45 children 2-7 y old	sedation, extrapyramidal symptoms	behavioral symptoms improved with significant decrease in 7 of 14 items of CPRS
Olanzapine	[b]Hollander *et al.*, 2006[122]	global functioning, aggression, compulsions, irritability	7.5-12.5 mg/d	11 children 6-14 y old	weight gain, sedation	50% of those on olanzapine much or very much improved in global functioning vs. 20% on placebo
Risperidone	RUPP, 2002[123]	irritability, hyperactivity, stereotypy, social withdrawal, inappropriate speech	0.5-3.5 mg/d	101 children 5-17 y old	weight gain, increased appetite, fatigue, drowsiness, drooling, dizziness	69% had positive response[a] on risperidone vs. 12% positive response[a] on placebo; significant positive findings for hyperactivity and stereotypy

TABLE 3 Continued

Agent	Study	Target Symptoms	Dose	Demographics	Significant Side Effects	Primary Outcome(s)
	[b]Shea *et al.*, 2004[124]	irritability, hyperactivity, stereotypy, social withdrawal, inappropriate speech	0.02-0.06 mg/kg/d	79 children 5-12 y old	weight gain, somnolence,	64% improvement in ABC Irritability subscale on risperidone vs. 31% improvement on placebo; significant positive finding for hyperactivity
	McDougle *et al.*, 2005[125]	social and communication impairment, repetitive behavior and stereotypy	0.5-3.5 mg/d	101 children 5-17 y old	weight gain, increased appetite, fatigue, drowsiness, drooling, dizziness	significant response[c] for repetitive behavior and stereotypy on risperidone
Risperidone vs. haloperidol	[b]Miral *et al.*, 2008[126]	behavior, social, sensory, language	0.01-0.08 mg/kg/d	30 children 8-18 y old	EPS, weight gain, gynecomastia	risperidone reported superior to haloperidol only on ABC total score, no subscales reported
Mood stabilizers						
Valproic acid	Hellings *et al.*, 2005[127]	irritability	20 mg/kg/d, average level 75-78	30 subjects 6-20 y old	increased appetite, skin rash	no significant difference for ABC Irritability subscale
	[b]Hollander *et al.*, 2005[128]	repetitive behavior	500-1,500 mg/d	12 children 5-17 y old, 1 adult 40 y old	irritability, aggression	statistically significant decrease in repetitive behavior on CY-BOCS
	Hollander *et al.*, 2010[129]	global irritability	dosed to mean level of 89.8 μg/mL	27 children 5-17 y old	skin rash, irritability	62.5% positive response for irritability on CGI on divalproex vs. 9.09% on placebo
Lamotrigine	[b]Belsito *et al.*, 2001[130]	irritability, social behavior	5 mg/kg/d	28 children 3-11 y old	insomnia, hyperactivity	no significant difference in irritability or social behavior on multiple instruments
Levetiracetam	[b]Wasserman *et al.*, 2006[131]	irritability, global functioning	20-30 mg/kg/d	20 children 5-17 y old	aggression	no significant difference in global functioning or irritability
Norepinephrine reuptake inhibitors						
Atomoxetine HCl	[b]Harfterkamp *et al.*, 2012[132]	hyperactivity, inattention	1.2 mg/kg/d	97 children 6-17 y old	nausea, anorexia, fatigue, early wakening	significant difference in the ADHD-RS for active treatment group; no difference in CGI-I

TABLE 3 Continued

Agent	Study	Target Symptoms	Dose	Demographics	Significant Side Effects	Primary Outcome(s)
	[b]Arnold *et al.*, 2006[133]	hyperactivity, inattention	20-100 mg divided 2×, mean 44 mg/d	16 children 5-15 y old	upper GI symptoms, fatigue, racing heart	57% positive response[a] for parent-rated ABC Hyperactivity subscale vs. 25% on placebo
Serotonin reuptake inhibitors						
Citalopram	King *et al.*, 2009[134]	repetitive behavior	2.5-20 mg/d, mean 16 mg/d	149 children 5-17 y old	hyperactivity, insomnia, inattention, impulsivity, diarrhea, stereotypy	no significant difference in repetitive behavior on CGI-I and CY-BOCS PDD
Fluoxetine	Hollander *et al.*, 2005[135]	repetitive behavior	2.4-20 mg/d, mean 9.9 mg/d	39 children 5-17 y old	none significant	statistically significant decrease in repetitive behavior on CY-BOCS Compulsions scale
Clomipramine	Gordon *et al.*, 1993[136]	stereotypy, repetitive behavior, compulsions	25-250 mg/d, mean 152 mg/d	12 children 6-18 y old	insomnia, constipation, twitching, tremors	decrease in repetitive behavior on CPRS
	Remington *et al.*, 2001[137]	stereotypy, irritability, hyperactivity	100-150 mg/d, mean 128.4 mg/d	31 subjects <20 y old	lethargy, tremors, tachycardia, insomnia, diaphoresis, nausea	no significant difference in stereotypy, irritability, or hyperactivity for clomipramine on ABC
Stimulants						
Methylphenidate	RUPP, 2005[138]	hyperactivity	7.5-50 mg/d divided 3×/d	58 children 5-14 y old	decreased appetite, insomnia, irritability, emotionality	49% positive responders[a] for hyperactivity vs. 15.5% on placebo
	Pearson *et al.*, 2013[139]	hyperactivity, inattention	10-40 mg each morning, methylphenidate extended release	24 children 7-12 y old	decreased appetite, insomnia	significant decrease in hyperactivity and inattention on multiple teacher and parent measurements
	Handen *et al.*, 2000[140]	hyperactivity	0.3-0.6 mg/kg/dose, 2-3×/d	13 children 5-11 y old	social withdrawal, irritability	8 of 13 children with >50% decrease in hyperactivity on Teacher Conners Hyperactivity subscale
	Quintana *et al.*, 1995[141]	hyperactivity	10-20 mg 2×/d	10 children 7-11 y old	irritability, anorexia, insomnia	decrease in ABC Hyperactivity subscale by 8 points over placebo
Miscellaneous						
Amantadine	[b]King *et al.*, 2001[142]	hyperactivity, irritability	2.5-5.0 mg/kg/d	39 children 5-19 y old	insomnia	no statistical difference in parent ABC Hyperactivity or Irritability subscales, statistical improvement in clinician Hyperactivity and Inappropriate Speech subscales

TABLE 3 Continued

Agent	Study	Target Symptoms	Dose	Demographics	Significant Side Effects	Primary Outcome(s)
Cyproheptadine (in combination with haloperidol)	Akhondzadeh *et al.*, 2004[143]	ABC total score, CARS	Titrated up to 0.2 mg/kg/d	40 children 3-11 y old	none significant, trend toward increased appetite	statistically significant difference in ABC total score and CARS diagnostic screening tool, with unknown clinical significance
Donepezil	Chez *et al.*, 2003[144]	"autistic behavior," expressive-receptive communication	1.25-2.5 mg/d	43 children 2-10 y old	diarrhea, stomach cramping, irritability	"autistic behavior" statistically, improved on CARS diagnostic screening tool with unknown clinical significance
Naltrexone	Willemsen-Swinkels *et al.*, 1995[145]	"social behavior," irritability	single 40-mg dose	20 children 3-7 y old	sedation, increased stereotypy	no effect on social behavior; significant decrease on ABC Irritability subscale vs. placebo
	[b]Kolmen *et al.*, 1995[146]	hyperactivity, communication initiation	1 mg/kg/d	13 children 3-8 y old	transient sedation	no significant difference in communication initiation
	[b]Feldman *et al.*, 1999[147]	communication	1 mg/kg/d	24 children, 3-8 y old	transient sedation	no significant difference in multiple communication measurements
	Campbell *et al.*, 1993[148]	CGI, CPRS, discriminant learning, hyperactivity	0.5-1 mg/kg/d	18 children 3-8 y old	increased aggression and stereotypy	no significant difference on CGI or CPRS or discriminant learning; positive trend for hyperactivity
	Campbell *et al.*, 1990[149]	hyperactivity, discriminant learning, self-injurious behavior	0.5-1 mg/kg/d	41 children 3-8 y old	none significant	significantly decreased hyperactivity; no effect on discriminant learning; positive trend for self-injurious behavior
Pentoxifylline (in combination with risperidone)	Akhondzadeh *et al.*, 2010[150]	irritability, hyperactivity, stereotypy, social withdrawal, inappropriate speech	200-600 mg/d	40 children 4-12 y old	sedation, GI effects, increased appetite	significant improvement on ABC Irritability and Social Withdrawal subscales

Note: ABC = Autism Behavior Checklist; ADHD-RS = Attention-Deficit/Hyperactivity Disorder Rating Scale; CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale; CARS = Childhood Autism Rating Scale; CPRS = Children's Psychiatric Rating Scale; EPS = extrapyramidal side effects; GI = gastrointestinal; PDD = pervasive developmental disorder; RUPP = Research Units on Pediatric Psychopharmacology.

[a]A positive response in this study was defined as a >25% reduction in the ABC subscale and a Much Improved or Very Much Improved rating on the Clinical Global Impression–Global Improvement (CGH).

[b]Study identified as funded by pharmaceutical industry.

[c]A positive response in this study was defined as a greater than 25% decrease in ABC (CY-BOCS) compulsions score and a much improved or very much improved rating on the CGH.

is preliminary evidence for the efficacy of hospital psychiatry units that specialize in the population.[111]

Recommendation 5. Pharmacotherapy may be offered to children with ASD when there is a specific target symptom or comorbid condition [CG].

Pharmacologic interventions may increase the ability of persons with ASD to profit from educational and other interventions and to remain in less restrictive environments through the management of severe and challenging behaviors. Frequent targets for pharmacologic intervention include associated comorbid conditions (e.g., anxiety, depression) and other features, such as aggression, self-injurious behavior, hyperactivity, inattention, compulsive-like behaviors, repetitive or stereotypic behaviors, and sleep disturbances. As with other children and adolescents, various considerations should inform pharmacologic treatment.[112] Risperidone[113[rct]] and aripiprazole[114[rct]] have been approved by the Food and Drug Administration for the treatment of irritability, consisting primarily of physical aggression and severe tantrum behavior, associated with autism. There is a growing body of controlled evidence for pharmacologic intervention,[115] and a summary of randomized controlled trials of medication in children with ASD is included (Table 3).[116-150] Combining medication with parent training is moderately more efficacious than medication alone for decreasing serious behavioral disturbance and modestly more efficacious for adaptive functioning.[151[rct],152[rct]] Individuals with ASD may be nonverbal, so treatment response is often judged by caregiver report and observation of specific behaviors. Although this may help document the effectiveness of the selected medication, one must remember that an overall goal of treatment is to facilitate the child's adjustment and engagement with educational intervention. Several objective rating scales also are available to help monitor treatment response.[153]

TABLE 4 Resources for Parents

ASPEN TM, Inc. (Asperger Syndrome Education Network) (http://www.aspennj.org)	A regional nonprofit organization providing families and those individuals affected with Asperger syndrome and related disorders with information, support, and advocacy.
Autism Society of America (http://www.autism-society.org)	The mission of the Autism Society of America is to promote lifelong access and opportunities for persons within the autism spectrum and their families to be fully included, participating members of their communities through advocacy, public awareness, education, and research related to autism.
Autism Speaks (http://www.autismspeaks.org)	Autism Speaks is an autism science and advocacy organization dedicated to funding research into the causes, prevention, treatments, and a cure for autism; increasing awareness of autism spectrum disorders; and advocating for the needs of individuals with autism and their families.
Division TEACCH (Treatment and Education of Autism and related Communication handicapped Children, University of North Carolina at Chapel Hill) (www.teacch.com)	The TEACCH Web site includes information about their program, educational and communication approaches to teaching individuals with autism, their research and training opportunities, and information and resources on autism.
LDAA (Learning Disabilities Association of America) (http://www.ldanatl.org)	The LDAA site includes information and resources on many learning disabilities, including learning disabilities involving a significant social component, such as autism and Asperger syndrome.
OASIS (Online Asperger Syndrome Information and Support) (http://www.asperger.org)	General information on Asperger syndrome and related disorders, including resources and materials, announcements of major pertinent events and publications, and being the major "intersection" for communication among parents, clinicians, educators, and individuals with social disabilities.
Yale Child Study Center (www.autism.fm)	Information on autism, Asperger syndrome, and related disorders, lists of resources organized by state, and parent support organizations and advocacy agencies.

Recommendation 6. The clinician should maintain an active role in long-term treatment planning and family support and support of the individual [CG].

Children's and families' need for help and support will change over time. The clinician should develop a long-term collaboration with the family and realize that service utilization may be sporadic. For very young children, issues of diagnosis and identification of treatment programs often will be most important. For school-age children, psychopharmacologic and behavioral issues typically become more prominent. For adolescents, vocational and prevocational training and thoughtful planning for independence/self-sufficiency is important. As part of this long-term engagement, parents and siblings of children with ASD will need support (Table 4). Although raising a child with autism presents major challenges, rates of parental separation and divorce are not higher among parents of children with ASD than those with non-ASD children.[154]

Recommendation 7. Clinicians should specifically inquire about the use of alternative/complementary treatments and be prepared to discuss their risk and potential benefits [CS].

Although most alternative or complementary treatment approaches have very limited empirical support for their use in children with ASD, they are commonly pursued by families.[155] It is important that the clinician be able to discuss these treatments with parents, recognizing the motivation for parents to seek all possible treatments. In most instances, these treatments have little or no proved benefit but also have little risk.[7] In a few instances, the treatment has been repeatedly shown not to work (e.g., intravenous infusion of secretin[156] and oral vitamin B6 and magnesium[157[rct]]), or randomized controlled evidence does not support its use (e.g., the gluten-free, casein-free diet,[158] ω-3 fatty acids,[159] and oral human immunoglobulin).[160[rct]] Some treatments have greater potential risk to the child directly (e.g., mortality and morbidity associated with chelation[161[cs]]) or from side effects owing to contaminants in "natural" compounds or indirectly (e.g., by diverting financial or psychosocial resources). For a detailed review of alternative treatments, see Jacobson *et al.*[162] and Levy and Hyman.[163] Although more controlled studies of these treatments are needed, it is important that the family be able to voice their questions to health care providers. Families may be guided to the growing body of work on evidence-based treatments in autism.[164]

PARAMETER LIMITATIONS

AACAP Practice Parameters are developed to assist clinicians in psychiatric decision making. These Parameters are not intended to define the sole standard of care. As such, the Parameters should not be deemed inclusive of all proper methods of care or exclusive of other methods of care directed at obtaining the desired results. The ultimate judgment regarding the care of a particular patient must be made by the clinician in light of all of the circumstances presented by the patient and his or her family, the diagnostic and treatment options available, and available resources. &

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The AACAP Practice Parameters are developed by the AACAP CQI in accordance with American Medical Association policy. Parameter development is an iterative process between the primary author(s), the CQI, topic experts, and representatives from multiple constituent groups, including the AACAP membership, relevant AACAP committees, the AACAP Assembly of Regional Organizations, and the AACAP Council. Details of the Parameter development process can be accessed on the AACAP Web site. Responsibility for Parameter content and review rests with the author(s), the CQI, the CQI Consensus Group, and the AACAP Council.

The AACAP develops patient-oriented and clinician-oriented Practice Parameters. Patient-oriented Parameters provide recommendations to guide clinicians toward best assessment and treatment practices. Recommendations are based on the critical appraisal of empirical evidence (when available) and clinical consensus (when not) and are graded according to the strength of the empirical and clinical support. Clinician-oriented Parameters provide clinicians with the information (stated as principles) needed to develop practice-based skills. Although empirical evidence may be available to support certain principles, principles are based primarily on clinical consensus. This Parameter is a patient-oriented Parameter.

The primary intended audience for the AACAP Practice Parameters is child and adolescent psychiatrists; however, the information contained therein also may be useful for other mental health clinicians.

The authors acknowledge the following experts for their contributions to this Parameter: Andrés Martin, MD, Schuyler Henderson, MD, Rhea Paul, PhD, Joaquin Fuentes, MD, Christopher McDougle, MD, Ami Klin, PhD, and Connie Zajicek, MD.

Kristin Kroeger Ptakowski and Jennifer Medicus served as the AACAP staff liaisons for the CQI.

This Practice Parameter was reviewed at the Member Forum at the AACAP annual meeting in October 2006.

From March to June 2012, this Parameter was reviewed by a consensus group convened by the CQI. Consensus group members

and their constituent groups were Oscar G. Bukstein, MD, co-chair; R. Scott Benson, MD, and John Hamilton, MD (CQI); Doug Novins, MD, and Christopher Thomas, MD (topic experts); Bryan King, MD (AACAP Autism and Intellectual Disability Committee); Melissa DelBello, MD (AACAP Research Committee); John Rose, MD, and Syed Naqvi, MD (AACAP Assembly of Regional Organizations); and Louis Kraus, MD, and Tami Benton, MD (AACAP Council).

This Practice Parameter was approved by the AACAP Council on July 8, 2013.

This Practice Parameter is available on the Internet (http://www.aacap.org).

Disclosures: Fred Volkmar, MD, receives or has received research funding from the National Institute of Child Health and Human Development and the National Institute of Mental Health and has intellectual property with John Wiley & Sons, Inc., Guilford Publications, Inc, and Springer. Matthew Siegel, MD, has no financial conflicts of interest to disclose. Marc Woodbury-Smith, MD, has no financial conflicts of interest to disclose. Bryan King, MD, has or has received research funding from the National Institutes of Health (NIH), Seaside Therapeutics, and Health Resources and Services Administration and serves or has served as an advisor/consultant with the U.S. Department of Justice. James McCracken, MD, has or has received research funding from Seaside Therapeutics and Bristol-Myers Squibb, serves or has served as an advisor/consultant to BioMarin Pharmaceuticals, Inc., and receives or has received honoraria as a speaker for Veritas, Discovery Channel Health CME, and CME Outfitters, LLC. Matthew State, MD, has or has received research funding from the NIH and Howard Hughes Medical Institute and has an exclusive license agreement with Athena Diagnostics. Oscar Bukstein, MD, MPH, co-chair, has served as a consultant for Ezra Innovations and for PRIME CME. He receives royalties from Routledge Press. Heather Walter, MD, MPH, and William Bernet, MD, co-chairs, have no financial relationships to disclose. Disclosures of potential conflicts of interest for all other individuals named above are provided on the AACAP Web site on the Practice Parameters page.

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0890-8567/$36.00/©2014 American Academy of Child and Adolescent Psychiatry

http://dx.doi.org/10.1016/j.jaac.2013.10.013

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Practice Parameter for the Assessment and Treatment of Children and Adolescents With Depressive Disorders

ABSTRACT

This practice parameter describes the epidemiology, clinical picture, differential diagnosis, course, risk factors, and pharmacological and psychotherapy treatments of children and adolescents with major depressive or dysthymic disorders. Side effects of the antidepressants, particularly the risk of suicidal ideation and behaviors are discussed. Recommendations regarding the assessment and the acute, continuation, and maintenance treatment of these disorders are based on the existent scientific evidence as well as the current clinical practice. *J. Am. Acad. Child Adolesc. Psychiatry,* 2007; 46(11):1503–1526. **Key Words:** major depressive disorder, dysthymic disorder, evaluation, treatment, antidepressants, selective serotonin reuptake inhibitors, psychotherapy, practice parameter.

Depressive disorders are often familial recurrent illnesses associated with increased psychosocial morbidity and mortality. Early identification and effective treatment may reduce the impact of depression on the family, social, and academic functioning in youths and may reduce the risk of suicide, substance abuse, and persistence of depressive disorders into adulthood. Evidence-supported treatment interventions have emerged in psychotherapy and medication treatment of childhood depressive disorders that can guide clinicians to improve outcomes in this population.

Accepted June 7, 2007.

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The authors acknowledge the following experts for their contributions to this parameter: Jeffrey Bridge, Ph.D., Amy Cheung, M.D., Greg Clarke, Ph.D., Graham Emslie, M.D., Philip Hazell, M.D., Stan Kutcher, M.D., Laura Mufson, Ph.D., Kelly Posner, Ph.D., Joseph Rey, M.D., Karen Wagner, M.D., and Elizabeth Weller, M.D.

This parameter was made available for review to the entire AACAP membership in February and March 2006.

From July 2006 to February 2007, this parameter was reviewed by a Consensus Group convened by the Work Group on Quality Issues. Consensus Group members and their constituent groups were as follows: Work Group on Quality Issues (Oscar Bukstein, M.D., Helene Keable, M.D., and John Hamilton, M.D.); Topic Experts (Graham Emslie, M.D., and Greg Clarke, Ph.D.); AACAP Assembly of Regional Organizations (Syed Naqvi, M.D.); and AACAP Council (David DeMaso, M.D., and Michael Houston, M.D.).

Disclosures of potential conflicts of interest for authors and Work Group chairs are provided at the end of the parameter. Disclosures of potential conflicts of interest for all other individuals named above are provided on the AACAP Web site on the Practice Information page.

This practice parameter was approved by the AACAP Council on June 1, 2007.

This practice parameter is available on the Internet (www.aacap.org).

Reprint requests to the AACAP Communications Department, 3615 Wisconsin Avenue, NW, Washington, DC 20016.

DOI: 10.1097/chi.0b013e318145ae1c

METHODOLOGY

The list of references for this parameter was developed by searching *PsycINFO*, *Medline*, and *Psychological Abstracts*; by reviewing the bibliographies of book chapters and review articles; by asking colleagues for suggested source materials; and from the previous version of this parameter (American Academy of Child and Adolescent Psychiatry, 1998), the recent American Psychiatric Association/AACAP guidelines "The Use of Medication in Treating Childhood and Adolescent Depression: Information for Physicians" published by *ParentsMedGuide.org*, the American Psychiatric Association guidelines for the treatment of adults with MDD (American Psychiatric Association, 2000a; Fochtmann and Gelenberg, 2005), the Texas algorithms for the treatment of children and adolescents with MDD (Hughes et al., 2007), and the National Institute of Health and Clinical Excellence (NICE; 2004) guidelines for the treatment of depressed youths. The searches, conducted in 2005, used the following text words: "major depressive disorder," "dysthymia,"

antidepressants," and "psychotherapy" (e.g., interpersonal, psychodynamic, cognitive) combined with the word "child." The searches covered the period 1990 to January 2007 and only articles that included depressive disorders were included. Given space limitations, we mainly cited review articles published in refereed journals and added new relevant articles not included in the reviews.

DEFINITIONS

The terminology in this practice parameter is consistent with the *DSM-IV-TR* (American Psychiatric Association, 2000b). Unless specified, the term "depression" encompasses both major depressive disorder (MDD) and dysthmic disorder (DD). Impairment means reduced functioning in one or more major areas of life (academic performance, family relationships, and peer interactions).

The information included in this parameter pertains mainly to MDD. There are few clinical studies and no controlled trials for the treatment of DD in youths. However, based on the limited adult literature (American Psychiatric Association, 2000a), efficacious treatments for MDD may also be useful for the management of DD.

In this parameter, unless otherwise specified, the terms "child" and "youths," respectively, refer to children and adolescents. "Parent" refers to parent or legal guardian.

EPIDEMIOLOGY

The prevalence of MDD is estimated to be approximately 2% in children and 4% to 8% in adolescents, with a male-to-female ratio of 1:1 during childhood and 1:2 during adolescence (Birmaher et al., 1996). The risk of depression increases by a factor of 2 to 4 after puberty, particularly in females (Angold et al., 1998), and the cumulative incidence by age 18 is approximately 20% in community samples (Lewinsohn et al., 1998).

Approximately 5% to 10% of children and adolescents have subsyndromal symptoms of MDD. These youths have considerable psychosocial impairment, high family loading for depression, and an increased risk of suicide and developing MDD (Fergusson et al., 2005; Gonzales-Tejera et al., 2005; Lewinsohn et al., 2000; Pine et al., 1998). The few epidemiological studies on DD have reported a prevalence of 0.6% to 1.7% in children and 1.6% to 8.0% in adolescents (Birmaher et al., 1996).

Studies in adults and one study in youths have suggested that each successive generation since 1940 is at greater risk of developing depressive disorders and that these disorders have their onset at a younger age (Birmaher et al., 1996).

CLINICAL PRESENTATION

Clinical depression manifests as a spectrum disorder with symptoms ranging from subsyndromal to syndromal. To be diagnosed with a syndromal disorder (MDD), a child or adolescent must have at least 2 weeks of persistent change in mood manifested by either depressed or irritable mood and/or loss of interest and pleasure plus a group of other symptoms including wishing to be dead, suicidal ideation or attempts; increased or decreased appetite, weight, or sleep; and decreased activity, concentration, energy, or self-worth or exaggerated guilt (American Psychiatric Association, 2000b; World Health Organization, 1992). These symptoms must represent a change from previous functioning and produce impairment in relationships or in performance of activities. Furthermore, symptoms must not be attributable only to substance abuse, use of medications, other psychiatric illness, bereavement, or medical illness.

Overall, the clinical picture of MDD in children and adolescents is similar to the clinical picture in adults, but there are some differences that can be attributed to the child's physical, emotional, cognitive, and social developmental stages (Birmaher et al., 1996; Fergusson et al., 2005; Kaufman et al., 2001; Klein et al., 2005; Lewinsohn et al., 2003a; Luby et al., 2004; Yorbik et al., 2004). For example, children may have mood lability, irritability, low frustration tolerance, temper tantrums, somatic complaints, and/or social withdrawal instead of verbalizing feelings of depression. Also, children tend to have fewer melancholic symptoms, delusions, and suicide attempts than depressed adults.

There are different subtypes of MDD, which may have prognostic and treatment implications. Psychotic depression has been associated with family history of bipolar and psychotic depression (Haley et al., 1988; Strober et al., 1993), more severe depression, greater long-term morbidity, resistance to antidepressant monotherapy, and, most notably, increased risk of bipolar

disorder (Strober and Carlson, 1982). MDD can be manifested with atypical symptoms such as increased reactivity to rejection, lethargy (leaden paralysis), increased appetite, craving for carbohydrates, and hypersomnia (Stewart et al., 1993; Williamson et al., 2000). Youths with seasonal affective disorder (SAD; Swedo et al., 1995) mainly have symptoms of depression during the season with less daylight. SAD should be differentiated from depression triggered by school stress because both usually coincide with the school calendar.

DD consists of a persistent, long-term change in mood that generally is less intense but more chronic than in MDD. As a consequence, DD is often overlooked or misdiagnosed. Although the symptoms of dysthymia are not as severe as in MDD, they cause as much or more psychosocial impairment (Kovacs et al., 1994; Masi et al., 2001). For a *DSM-IV* diagnosis of DD, a child must have depressed mood or irritability on most days for most of the day for a period of 1 year, as well as two other symptoms from a group including changes in appetite or weight and changes in sleep; problems with decision-making or concentration; and low self-esteem, energy, and hope (American Psychiatric Association, 2000b).

COMORBIDITY

Both MDD and DD are usually accompanied by other psychiatric and medical conditions, and often they occur together (the so-called double depression). Depending on the setting and source of referral, 40% to 90% of youths with depressive disorder also have other psychiatric disorders, with up to 50% having two or more comorbid diagnoses. The most frequent comorbid diagnoses are anxiety disorders, followed by disruptive disorders, attention-deficit/hyperactivity disorder (ADHD), and, in adolescents, substance use disorders. MDD and DD usually manifest after the onset of other psychiatric disorders (e.g., anxiety), but depression also increases the risk of the development of nonmood psychiatric problems such as conduct and substance abuse disorders (Angold et al., 1999; Birmaher et al., 1996; Fombonne et al., 2001a,b; Lewinsohn et al., 1998, 2003a; Rohde et al., 1991).

DIFFERENTIAL DIAGNOSIS

Several psychiatric (e.g., anxiety, dysthymia, ADHD, oppositional defiant disorder, pervasive developmental disorder, substance abuse) and medical disorders (e.g., hypothyroidism, mononucleosis, anemia, certain cancers, autoimmune diseases, premenstrual dysphoric disorder, chronic fatigue syndrome) as well as conditions such as bereavement and depressive reactions to stressors (adjustment disorder) may co-occur with or mimic MDD or DD. These conditions may cause poor self-esteem or demoralization, but should not be diagnosed as MDD or DD unless they meet criteria for these disorders. Moreover, the symptoms of the above-noted conditions may overlap with the symptoms of depression (e.g., tiredness, poor concentration, sleep and appetite disturbances), making the differential diagnosis complicated. Also, medications (e.g., stimulants, corticosteroids, contraceptives) can induce depression-like symptomatology. The diagnosis of MDD or DD can be made if depressive symptoms are not due solely to the illnesses or the medications and if the child fulfills the criteria for these depressive disorders.

Because most children and adolescents presenting to treatment are experiencing their first episode of depression, it is difficult to differentiate whether their depression is part of unipolar major depression or the depressive phase of bipolar disorder. Certain indicators such as high family loading for bipolar disorder, psychosis, and history of pharmacologically induced mania or hypomania may herald the development of bipolar disorder (Birmaher et al., 1996). It is important to evaluate carefully for the presence of subtle or short-duration hypomanic symptoms because these symptoms often are overlooked and these children and adolescents may be more likely to become manic when treated with antidepressant medications (Martin et al., 2004). It is also important to note that not all children who become activated or hypomanic while receiving antidepressants have bipolar disorder (Wilens et al., 1998).

CLINICAL COURSE

The median duration of a major depressive episode for clinically referred youths is about 8 months and for community samples, about 1 to 2 months. Although most children and adolescents recover from their first depressive episode, longitudinal studies of both clinical and community samples of depressed youths have shown that the probability of recurrence reaches 20% to 60% by 1 to 2 years after remission and climbs to 70% after 5 years (Birmaher et al., 2002; Costello et al.,

2002). Recurrences can persist throughout life, and a substantial proportion of children and adolescents with MDD will continue to suffer MDD during adulthood. Moreover, between 20% and 40% will develop bipolar disorder, particularly if they have the risk factors described above (Geller et al., 1994; Strober and Carlson, 1982).

Childhood depression, compared with adult-onset depression, appears to be more heterogeneous. Some children may have a strong family history of mood disorders and high risk of recurrences, whereas others may develop bipolar disorder or be more likely to develop behavior problems and substance abuse than depression (Birmaher et al., 2002; Fombonne et al., 2001a,b; Harrington, 2001; Weissman et al., 1999). Although there are some differences, for the most part the predictors of recovery, relapse, and recurrence overlap. In general, greater severity, chronicity, or multiple recurrent episodes, comorbidity, hopelessness, presence of residual subsyndromal symptoms, negative cognitive style, family problems, low socioeconomic status, and exposure to ongoing negative events (abuse, family conflict) are associated with poor outcome (Birmaher et al., 2002; Lewinsohn et al., 1998).

Childhood DD has a protracted course, with a mean episode length of approximately 3 to 4 years for clinical and community samples, and is associated with an increased risk of subsequent MDD and substance use disorders (Klein et al., 1988; Kovacs et al., 1994; Lewinsohn et al., 1991).

COMPLICATIONS

If untreated, MDD may affect the development of a child's emotional, cognitive, and social skills and may interfere considerably with family relationships (Birmaher et al., 1996, 2002; Lewinsohn et al., 2003b). Suicide attempts and completion are among the most significant and devastating sequelae of MDD with approximately 60% report having thought about suicide and 30% actually attempt suicide (American Academy of Child and Adolescent Psychiatry, 2001; Brent et al., 1999; Gould et al., 1998). The risk of suicidal behavior increases if there is a history of suicide attempts, comorbid psychiatric disorders (e.g., disruptive disorders, substance abuse), impulsivity and aggression, availability of lethal agents (e.g., firearms), exposure to negative events (e.g., physical or sexual abuse, violence), and a family history of suicidal behavior (Beautrais, 2000; Brent et al., 1988; Gould et al., 1998).

Children and adolescents with depressive disorders are also at high risk of substance abuse (including nicotine dependence), legal problems, exposure to negative life events, physical illness, early pregnancy, and poor work, academic, and psychosocial functioning. After an acute episode of depression, a slow and gradual improvement in psychosocial functioning may occur unless there are relapses or recurrences. However, psychosocial difficulties frequently persist after the remission of the depressive episode, underscoring the need for continuing treatment for the depression as well as treatment that addresses associated psychosocial and contextual issues (Fergusson and Woodward, 2002; Hammen et al., 2003, 2004; Lewinsohn et al., 2003b).

In addition to the depressive disorder, other factors such as comorbid psychopathology, physical illness, poor family functioning, parental psychopathology, low socioeconomic status, and exposure to negative life events may affect the psychosocial functioning of depressed youths (Birmaher et al., 1996; Fergusson and Woodward, 2002; Lewinsohn et al., 1998, 2003b).

RISK FACTORS

High-risk, adoption, and twin studies have shown that MDD is a familial disorder, which is caused by the interaction of genetic and environmental factors (Birmaher et al., 1996; Caspi et al., 2003; Kendler et al., 2005; Pilowsky et al., 2006; Pine et al., 1998; Reinherz et al., 2003; Weissman et al., 2005, 2006b). In fact, the single most predictive factor associated with the risk of developing MDD is high family loading for this disorder (Nomura et al., 2002; Weissman et al., 2005).

The onset and recurrences of major depression may be moderated or mediated by the presence of stressors such as losses, abuse, neglect, and ongoing conflicts and frustrations. However, the effects of these stressors also depend on the child's negative attributional styles for interpreting and coping with stress, support, and genetic factors. Other factors such as the presence of comorbid disorders (e.g., anxiety, substance abuse, ADHD, eating disorders), medical illness (e.g., diabetes), use of medications, biological, and sociocultural factors have also been related to the development and maintenance of depressive symptomatology (Caspi et al., 2003; Costello

et al., 2002; Garber and Hilsman, 1992; Kaufman et al., 2001; Kendler et al., 2005; Lewinsohn et al., 1998; Pine et al., 1998, 2002, 2004; Rey et al., 2004; Weissman et al., 2005; Williamson et al., 1998).

EVIDENCE BASE FOR PRACTICE PARAMETERS

The AACAP develops both patient-oriented and clinician-oriented practice parameters. Patient-oriented parameters provide recommendations to guide clinicians toward the best treatment practices. Treatment recommendations are based both on empirical evidence and clinical consensus and are graded according to the strength of the empirical and clinical support. Clinician-oriented parameters provide clinicians with the information (stated as principles) needed to develop practice-based skills. Although empirical evidence may be available to support certain principles, principles are primarily based on expert opinion and clinical experience.

In this parameter, recommendations for best treatment practices are stated in accordance with the strength of the underlying empirical and/or clinical support, as follows:

- [MS] *Minimal Standards* are applied to recommendations that are based on rigorous empirical evidence (e.g., randomized controlled trials) and/or overwhelming clinical consensus. Minimal standards apply more than 95% of the time (i.e., in almost all cases).
- [CG] *Clinical Guidelines* are applied to recommendations that are based on strong empirical evidence (e.g., non-randomized controlled trials) and/or strong clinical consensus. Clinical guidelines apply approximately 75% of the time (i.e., in most cases).
- [OP] *Option* is applied to recommendations that are acceptable based on emerging empirical evidence (e.g., uncontrolled trials or case series/reports) or clinical opinion, but lack strong empirical evidence and/or strong clinical consensus.
- [NE] *Not Endorsed* is applied to practices that are known to be ineffective or contraindicated.

The strength of the empirical evidence is rated in descending order as follows:

- [rct] *Randomized controlled trial* is applied to studies in which subjects are randomly assigned to two or more treatment conditions
- [ct] *Controlled trial* is applied to studies in which subjects are nonrandomly assigned to two or more treatment conditions
- [ut] *Uncontrolled trial* is applied to studies in which subjects are assigned to one treatment condition
- [cs] *Case series/report* is applied to a case series or a case report

CONFIDENTIALITY

Recommendation 1. The Clinician Should Maintain a Confidential Relationship With the Child or Adolescent While Developing Collaborative Relationships With Parents, Medical Providers, Other Mental Health Professionals, and Appropriate School Personnel [MS].

At the outset of the initial contact, the clinician should clarify with the patient and parents the boundaries of the confidential relationship that will be provided. The child's right to a confidential relationship is determined by law that varies by state. Each state has mandatory child abuse reporting requirements. Parents will expect information about the treatment plan, the safety plan, and progress toward goals of treatment. The child should expect that suicide or violence risk issues will be communicated to the parents. The clinician should request permission to communicate with medical providers, other mental health professionals involved in the treatment, and appropriate school personnel. Clinicians should provide a mechanism for parents to communicate concerns about deterioration in function and high-risk behaviors such as suicide threats or substance use.

SCREENING

Recommendation 2. The Psychiatric Assessment of Children and Adolescents Should Routinely Include Screening Questions About Depressive Symptomatology [MS].

Clinicians should screen all children and adolescents for key depressive symptoms including depressive or sad mood, irritability, and anhedonia. A diagnosis of a depressive disorder should be considered if these symptoms are present most of the time, affect the child's psychosocial functioning, and are above and beyond what is expected for the chronological and psychological age of the child. To screen for depressive symptoms, clinicians

could use checklists derived from the *DSM* or *ICD-10* criteria for depressive disorders, clinician-based instruments, and/or child and parent depression self-reports (American Academy of Child and Adolescent Psychiatry, 1997; Klein et al., 2005; Myers and Winters, 2002).

EVALUATION

Recommendation 3. If the Screening Indicates Significant Depressive Symptomatology, the Clinician Should Perform a Thorough Evaluation to Determine the Presence of Depressive and Other Comorbid Psychiatric and Medical Disorders [MS].

A comprehensive psychiatric diagnostic evaluation is the single most useful tool available to diagnose depressive disorders. The psychiatric assessment of depressed children and adolescents must be performed by a developmentally sensitive clinician who is able to achieve good rapport with children. For example, children may either have difficulties verbalizing their feelings or alternatively deny that they are depressed. Thus, the clinician should also be attentive to observable manifestations of depression such as irritability, changes in sleep habits, decline in school performance, and withdrawal from previous pleasurable activities.

Clinicians should evaluate the child's and family's strengths. Also, the evaluation should be sensitive to ethnic, cultural, and religious characteristics of the child and his or her family that may influence the presentation, description, or interpretation of symptoms and the approach to treatment.

The evaluation should include direct interviews with the child and parents/caregivers and, ideally, with the adolescent alone. Also, whenever appropriate, other informants including teachers, primary care physicians, social services professionals, and peers should be interviewed. Subtypes of depressive disorders (seasonal, mania/hypomania, psychosis, subsyndromal, symptoms of depression), comorbid psychiatric disorders, medical illnesses, and (as indicated) physical examinations and laboratory tests are among the areas that should be evaluated. Because of the prognostic and treatment implications, as described under Differential Diagnosis above, it is crucial to evaluate for the presence of lifetime manic or hypomanic symptoms.

Several standardized structured and semistructured interviews are available for the evaluation of psychiatric symptoms in children older than 7 years (American Academy of Child and Adolescent Psychiatry, 1997; Klein et al., 2005; Myers and Winters, 2002) and more recently in younger children (Luby et al., 2003). However, many of these interviews are too long to be carried out in clinical settings, require special training, and have low parent–child agreement. Parents' reports also may be influenced by their own psychopathology, highlighting the importance of obtaining information not only from parents but also from the child and other sources, including teachers.

In the assessment of the onset and course of mood disorders, it is helpful to use a mood diary and a mood timeline that uses school years, birthdays, and so forth as anchors. Mood is rated from very happy to very sad and/or very irritable to nonirritable, and normative and non-normative stressors as well as treatments are noted. The mood timeline can help children and their parents to visualize the course of their mood and comorbid conditions, identify events that may have triggered the depression, and examine the relationship between treatment and response. At present, no biological or imaging tests are clinically available for the diagnosis of depression.

Evaluation of a child's functioning can be done through the use of several rating scales (American Academy of Child and Adolescent Psychiatry, 1997; Winters et al., 2005). Among the shortest and simplest ones are the Children's Global Assessment Scale (Shaffer et al., 1983) and the Global Assessment of Functioning (American Psychiatric Association, 2000b).

Finally, the clinician, together with the child and parents, should evaluate the appropriate intensity and restrictiveness of care (e.g., hospitalization). The decision for the level of care will depend primarily on level of function and safety to self and others, which in turn are determined by the severity of depression, presence of suicidal and/or homicidal symptoms, psychosis, substance dependence, agitation, child's and parents' adherence to treatment, parental psychopathology, and family environment.

Recommendation 4. The Evaluation Must Include Assessment for the Presence of Harm to Self or Others [MS].

Suicidal behavior exists along a continuum from passive thoughts of death to a clearly developed plan and intent to carry out that plan (American Academy of Child and Adolescent Psychiatry, 2001; Gould et al.,

1998). Because depression is closely associated with suicidal thoughts and behavior, it is imperative to evaluate these symptoms at the initial and subsequent assessments (American Academy of Child and Adolescent Psychiatry, 2001; Gould et al., 1998). For this purpose, low burden tools to track suicidal ideation and behavior such as the Columbia-Suicidal Severity Rating Scale can be used. Also, it is crucial to evaluate the risk (e.g., age, sex, stressors, comorbid conditions, hopelessness, impulsivity) and protective factors (e.g., religious belief, concern not to hurt family) that may influence the desire to attempt suicide. Both current severity of suicidality and the most severe point of suicidality in episode and lifetime should be assessed. The presence of guns in the home should be ascertained, and the clinician should recommend that the parents secure or remove them (Brent et al., 1993b).

Clinicians should also differentiate suicidal behavior from other types of self-harm behaviors, the goal of which is to relieve negative affect. This type of behavior most commonly involves repetitive self-cutting, with clear motivation to relieve anger, sadness, or loneliness rather than to end one's life.

Homicidal behavior follows a continuum similar to suicidality, from fleeting thoughts of homicide to ideas with a plan and intent. It is important to note that suicidal and homicidal ideation can occur in the same individual; fully one third of adolescent suicide victims in one study had homicidal ideation in the week before their suicide (Brent et al., 1993a). The clinician should conduct an assessment similar to that described for suicidal ideation with regard to what factors are influencing, either positively or negatively, the degree of likelihood the patient will carry out a homicidal act. As is the case for patients at risk for suicidal behavior, it is important to restrict access to any lethal agents, particularly guns (Brent et al., 1993b).

Recommendation 5. The Evaluation Should Assess for the Presence of Ongoing or Past Exposure to Negative Events, the Environment In Which Depression Is Developing, Support, and Family Psychiatric History [MS].

As noted above, depression often results from an interaction between depressive diathesis and environmental stressors; thus, the need for a careful evaluation of current and past stressors such as physical and sexual abuse, ongoing intra- and extrafamilial conflicts, neglect, living in poor neighborhoods, and exposure to violence. If the abuse is current, then ensuring the safety of the patient is the first priority of treatment. It is also important to assess the sequelae of the exposure to negative events such as posttraumatic stress disorder.

Depression often occurs in a recurring pattern involving conflict with peers, parents, and other adult authority figures such as teachers. The relationship between conflict and depression is often bidirectional because depression can make a person more irritable, which then increases interpersonal tension, causing others to distance themselves from the depressed person, which then leads to an experience on the part of the patient of loneliness and lack of support. An assessment of the key relationships in the patient's social network is a critical component to the implementation of one type of psychotherapy for adolescent depression for which there is evidence of efficacy, namely, interpersonal psychotherapy (IPT; Mufson et al., 2004). Involvement in deviant peer groups may lead to antisocial behavior, generating more stressful life events and increasing the likelihood of depression (Fergusson et al., 2003).

The presence of family psychopathology should be evaluated to assist in both diagnosis and treatment because parental psychopathology can affect the child's ability and willingness to participate in treatment, may be predictive of course (e.g., bipolar family history), and may have an influence on treatment response. The clinician should assess for discord, lack of attachment and support, and a controlling relationship (often referred to as "affectionless control") because these can be related to risk for other psychiatric conditions such as substance abuse and conduct disorder that can complicate the presentation and course of depression (Nomura et al., 2002). For further information regarding assessment of the family, refer to the Practice Parameter for the Assessment of the Family (American Academy of Child and Adolescent Psychiatry, 2007).

TREATMENT

Recommendation 6. The Treatment of Depressive Disorders Should Always Include an Acute and Continuation Phase; Some Children May Also Require Maintenance Treatment [MS].

The treatment of depression is usually divided into three phases: acute, continuation, and maintenance. The main goal of the acute phase is to achieve response

and ultimately full symptomatic remission. The following are the definitions of outcome (Birmaher et al., 2000 [ut]; Emslie et al., 1998; Frank et al., 1991):

- *Response*: No symptoms or a significant reduction in depressive symptoms for at least 2 weeks
- *Remission*: A period of at least 2 weeks and <2 months with no or few depressive symptoms
- *Recovery*: Absence of significant symptoms of depression (e.g., no more than 1–2 symptoms) for ≥2 months
- *Relapse*: A *DSM* episode of depression during the period of remission
- *Recurrence*: The emergence of symptoms of depression during the period of recovery (a new episode)

Continuation treatment is required for all depressed youths to consolidate the response during the acute phase and avoid relapses. Finally, maintenance treatment is used to avoid recurrences in some youths who have had a more severe, recurrent, and chronic disorder.

Treatment strategies for each one of these three treatment phases are discussed in detail below. In general, the choice of treatment at each of these phases should be governed by factors such as the subject's age and cognitive development, severity and subtype of depression, chronicity, comorbid conditions, family psychiatric history, family and social environment, family and patient treatment preference and expectations, cultural issues, and availability of expertise in pharmacotherapy and/or psychotherapy.

Recommendation 7. Each Phase of Treatment Should Include Psychoeducation, Supportive Management, and Family and School Involvement [MS].

Psychoeducation. Psychoeducation refers to education of family members and the patient about the causes, symptoms, course, and different treatments of depression and the risks associated with these treatments as well as no treatment at all. Education should make the treatment and decision-making process transparent and should enlist parent and patient as collaborators in their own care. Depression is presented as an illness, not a weakness, which is no one's fault but has genetic and environmental contributions. The difficulties that the patient experiences in function are not manipulation, but the manifestations of an illness. The patient and family should be prepared for what is likely to be a recurrent and often chronic illness that may have a prolonged period of recovery. This enables the patient and family not to be overly disappointed if recovery is prolonged, and it prepares them for the necessity of continuation and adherence to treatment. Parents also need guidance about how to parent: when to be strict and when to be lax in light of their child's depression.

Written material and reliable Web sites about depression and its treatment can help parents and their child to learn about depression and monitor the child's progress and, if the child is taking medications, potential emerging side effects.

There are no controlled trials of psychoeducation, but psychoeducation seems to improve adherence to treatment and reduce the symptoms of depression (Brent et al., 1993c [ut]; Renaud et al., 1998 [ut]). For families with depressed parents, psychoeducation with or without further interventions have also showed improvement in how families problem solve around parental illness and children's behavior and attitudes (Beardslee et al., 2003).

Supportive Management. In addition to psychoeducation, all subjects require supportive psychotherapeutic management, which may include active listening and reflection, restoration of hope, problem solving, coping skills, and strategies for maintaining participation in treatment.

Family Involvement. Even in the absence of formal family therapy, it is virtually impossible to successfully treat a child or adolescent patient without the close involvement of parents. First, the clinician has to recognize that motivation for treatment comes often from the parents, and therefore the treatment contract must involve them. Second, the parents may observe aspects of the child's functioning or symptoms that the child either is not aware of or does not wish to share, and this information is vital to the development of a realistic and effective treatment contract. Third, the parents are able to monitor their child's progress and serve as a safety net.

As described in the section about psychotherapies (Recommendation 9), despite the scarce and weak empirical evidence, knowledge of risk factors suggests that interventions with families are an important part of clinical management. These interventions should take into account the family's cultural and religious background and focus on strengthening the relationship between the identified patient and caregiver(s), provide

parenting guidance (e.g., management of conflicts), reduce family dysfunction, and facilitate treatment referral for caregivers or siblings with psychiatric disorders and for marital conflict (Asarnow et al., 1993 [rct]; Birmaher et al., 2000 [ut]; Diamond et al., 2002 [ut]; Garber et al., 2002; Hammen et al., 2004; Nomura et al., 2002; Sanford et al., 2006). During the acute phase of treatment, especially if both parent and child are depressed, it may be difficult to do much productive family work when multiple family members are depressed and irritable. Family work that is conducted after some symptomatic relief is still important because parent– child conflict is associated not only with prolongation of depressive episodes but also with relapse and recurrence (Birmaher et al., 2000 [ut]).

School Involvement. School personnel also need psychoeducation to help them understand the disease model of depression. Issues related to confidentiality also need to be discussed. The clinician, along with the family, should advocate for some accommodations (e.g., schedule, workload) to the patient's current difficulties until recovery has been achieved. If after recovery the child continues to have academic difficulties, then one should suspect that there is still some subsyndromal depression or that there are other comorbid conditions (e.g., developmental learning disorders, ADHD, anxiety, substance abuse) or environmental factors that may explain the child's persistent difficulties.

Students with a depressive disorder may qualify for the Emotional Disturbance Disability categorization under the Individuals with Disabilities Education Act and therefore be eligible to receive school-based services (e.g., counseling) and accommodations that enable them to continue to learn (see Practice Parameter for Psychiatric Consultation to Schools, American Academy of Child and Adolescent Psychiatry, 2005).

Recommendation 8. Education, Support, and Case Management Appear to Be Sufficient Treatment for the Management of Depressed Children and Adolescents With an Uncomplicated or Brief Depression or With Mild Psychosocial Impairment [CG].

The current acute RCTs with psychotherapy or pharmacotherapy have reported that up to 60% of children and adolescents with MDD respond to placebo (Bridge et al., 2007 [rct]; Cheung et al., 2005 [rct]) and 15% to 30% respond to brief treatment (Goodyer, et al., 2007[rct]; Harrington et al., 1998; Renaud et al., 1998 [ut]). In fact, supportive treatment, compared with either cognitive-behavioral therapy (CBT) or IPT, is equally efficacious for those with mild depression. When patients are more severely depressed and have significant melancholic symptoms, hopelessness, or suicidal ideation/behaviors, however, supportive treatment is inferior to both of these indicated therapies (Barbe et al., 2004a [rct]; March et al., 2004 [rct]; Mufson et al., 1999 [rct]; Renaud et al., 1998 [ut]). Thus, it is reasonable, in a patient with a mild or brief depression, mild psychosocial impairment, and the absence of clinically significant suicidality or psychosis, to begin treatment with education, support, and case management related to environmental stressors in the family and school. It is expected to observe response after 4 to 6 weeks of supportive therapy.

Recommendation 9. For Children and Adolescents Who Do Not Respond to Supportive Psychotherapy or Who Have More Complicated Depressions, a Trial With Specific Types of Psychotherapy and/or Antidepressants Is Indicated [CG].

In children and adolescents with moderate to severe depression, chronic or recurrent depression, considerable psychosocial impairment, suicidality, agitation, and psychosis, supportive psychotherapy and case management are usually not adequate. For these children and adolescents interventions with more specific types of psychotherapies or pharmacological treatments for depressive disorders are indicated.

As reviewed below, moderate depression may respond to CBT or IPT alone. More severe depressive episodes will generally require treatment with antidepressants. Treatment with antidepressants may be administered alone until the child is amenable to psychotherapy or if appropriate, they can be combined with psychotherapy from the beginning of treatment. Finally, depressed youth who do not respond to prior monotherapy treatment, either psychotherapy or antidepressants, require a combination of these two treatment modalities.

In general, in addition to considering the severity and chronicity of the depressive symptoms, prior response to treatment, and other familial and environmental factors, the decision about which type of monotherapy to offer may be dictated by availability and patient and family preference. For example, children and/or their families may not wish to participate in psychotherapy or may object to taking any medications. Specific types

of psychotherapies such as CBT or IPT may not be available. Children may not have responded previously to psychotherapy (e.g., 6–8 weeks of CBT or IPT). Children may be too agitated or psychotic or have low motivation, poor concentration, or sleep disturbances to participate in psychotherapy other than supportive treatment plus pharmacotherapy until they are feeling better, or they may have disorders (e.g., autism, mental retardation) for which CBT or IPT may not be appropriate.

The extant literature regarding the acute psychotherapy and pharmacological treatments and their side effects and clinical use for children and adolescents with depressive disorders is summarized below.

Psychotherapy. A recent rigorous meta-analysis of 35 RCTs for depressed youths showed that although some studies demonstrated large effects, overall the effects of psychotherapy for the acute treatment of depressed youths are modest (Weisz et al., 2006). Treatments were equally efficacious for children and adolescents, individual and group psychotherapy, samples identified as having depressive disorders versus depressive symptomatology, efficacy versus effectiveness studies, and whether the studies used cognitive techniques (CBT) or other approaches (e.g., IPT, behavior problem-solving, relaxation, attachment-based therapy). Outcomes were significantly better when the informant was the youth when compared with his or her parents, indicating the importance of interviewing both children and parents. There was no correlation between duration of treatment and response, suggesting that brief treatments may be an efficacious and economical way to treat depressed youths. However, the few studies that included follow-up after the acute treatment showed that the beneficial effects of psychotherapy appear durable for the initial months, but not for 1 year. Thus, more studies are needed to evaluate the effects of "boosters" and continuation therapy. Only six studies assessed suicidality as an outcome. On average, these studies showed a small reduction in suicidality, emphasizing the need for more target techniques to address this worrisome symptom. Finally, the effects of the psychotherapy for depressed youths also improved anxiety, but not externalizing symptoms.

Other meta-analyses have also shown that CBT is effective for the treatment of youths with MDD (Compton et al., 2004; Harrington et al., 1998). CBT appears to be more efficacious even in the face of comorbidity, suicidal ideation, and hopelessness, but when there is a history of sexual abuse or when one of the parents is depressed, CBT does not appear to perform as well (Barbe et al., 2004b [rct]; Brent et al., 1998 [rct]; Lewinsohn et al., 1998; Melvin et al., 2006 [rct]; Rohde et al., 2004 [rct]).

In sharp contrast with most CBT studies (Weisz et al., 2006), a recent large RCT did not find differences between CBT and placebo for adolescents with MDD (March et al., 2004, 2006b [rct]). Moreover, although the combination of CBT and fluoxetine showed a more rapid decline in depressive symptom reduction (Kratochvil et al., 2006), rates of clinical improvement and baseline-adjusted symptom ratings at endpoint were not different between combination treatment and medication alone. Also, the combined treatment was better than fluoxetine alone mainly for teens with mild to moderate depression and for depression with high levels of cognitive distortion, but not for severe depression (Curry et al., 2006 [rct]). The combination treatment did result in a greater rate of remission than in any of the other treatments, but the effects were modest (remission rate of 37% in combined treatment; Kennard et al., 2006 [rct]). It is unclear why CBT did not differ from placebo in this study with regard to acute treatment. Possible explanations include that the adolescents were not blind to medication assignment in the two CBT cells, treatment delivered a "low dose" of a large number of skills and techniques, whereas some of the more successful treatment studies with CBT used a flexible protocol that focused mainly on cognitive restructuring and behavior activation (Brent, 2006; Brent et al., 1997 [rct]; Weersing and Weisz, 2002 [ct]; Wood et al., 1996 [ct]). Although the results of the Treatment of Adolescents With Depression Study (TADS) may also suggest that CBT is difficult to disseminate, one quality improvement study suggested that CBT (sometimes delivered in combination with medication) can be delivered effectively in primary care settings to depressed adolescents and results in better outcomes than treatment as usual (Asarnow et al., 2005 [rct]).

It seems to be clinically intuitive and consistent with some studies of adult depressives that the combination of CBT and medication would be superior to medication alone (Keller et al., 2000). In the TADS, on the primary outcomes, the differences between combination and medication alone were either nonexistent or

modest, although all positive contrasts did favor the combination (March et al., 2006b; Vitiello et al., 2006). The rate of remission was higher in combination, but, similar to other studies, was disappointingly low (37% in combination versus 23% in medication alone). Three other RCTs examining the effects of combined treatment versus medication alone have also been disappointing. Goodyer and colleagues (2007[rct]) found that in moderately to severely depressed adolescents who did not respond to a brief psychosocial treatment, the combination of CBT and a selective serotonin reuptake inhibitor (SSRI, mainly fluoxetine) was no better than the SSRI alone in the relief of depressive symptoms or improvement in overall outcome. Melvin and colleagues (2006 [rct]) were unable to demonstrate the superiority of combined sertraline and CBT over either treatment alone for adolescents with mild to moderate depression. After acute treatment, CBT was found to be superior to sertraline alone, which may suggest an advantage of CBT, but may also be explained by the relatively low sertraline dose. Finally, Clarke and colleagues (2005 [rct]) compared the addition of CBT to SSRI management in primary care and found some modest improvement on quality of life but not on the primary outcome. Moreover, an unexpected result of the combined treatment was that those patients were more likely to discontinue their SSRIs.

IPT is emerging as another efficacious psychotherapy for adolescent depression for which it has been shown to be superior to twice-monthly supportive clinical management, with differences most prominent in those who were moderately or severely depressed and in older teens (Mufson et al., 1999, 2004 [rct]). IPT has been shown to be at least as efficacious as CBT for adolescent depression (Rossello and Bernal, 1999 [rct]). IPT appears to be relatively easy to disseminate insofar as therapists in school-based health clinics with brief training and supervision were able to improve depression using IPT compared with treatment as usual (Mufson et al., 2004).

Most of the above-noted clinical trials in clinically referred populations were carried out with adolescents rather than in younger children, but some randomized CBT trials for symptomatic volunteers have been successfully used in younger children (Reynolds and Coates, 1986 [rct]; Stark et al., 1987 [rct]; Weisz et al., 1997 [rct]), although in some, but not all, studies CBT was better than waitlist control, but not an alternative treatment. Most clinicians recommend the adaptation of cognitive, interpersonal, and psychodynamic techniques for younger children. In addition, because of the prominent role of family issues in early-onset depression and the greater dependency of the child on parents, some form of family intervention is recommended. However, no RCTs have been conducted in clinically referred depressed children.

Because family interaction is related to the onset and course of adolescent depression (Asarnow et al., 1993 [rct]; Birmaher et al., 2000 [ut]; Nomura et al., 2002; Pilowsky et al., 2006), the improvement of family interactions is a logical treatment target of adolescent depression. However, only one RCT has examined the impact of family therapy and found that CBT was superior to a systemic behavioral family therapy in the short-term reduction of adolescent depression (Brent et al., 1997 [rct]). One form of family treatment termed attachment therapy has shown promise as an intervention and was superior to waitlist control for relief of depressive symptomatology (Diamond et al., 2002 [ut]).

There is a substantial case-based literature on the treatment of depression with individual psychodynamic psychotherapy as well as substantial clinical experience indicating that individual psychodynamic psychotherapy can address a broad range of the comorbidities in depressed youths including developmental, interpersonal, and intrapersonal factors important to social, peer, and educational functioning. In addition to close monitoring of medications and symptomatology, psychodynamic interventions can be useful to help change patients' depressive beliefs, world expectations, and challenge notions of futility and the meaning of life. Recent open trials and an RCT comparing psychodynamic psychotherapy plus parent support versus family therapy for the treatment of youths with depressive disorders are promising, but further studies with state-of-the-art methodology are necessary (Crits-Christoph et al., 2002 [ut]; Muratori et al., 2003 [ut]; Trowell et al., 2007 [rct]).

It is important to emphasize that although the above-noted research studies try to isolate specific diagnostic entities for clinical trials, most cases in clinical practice have multiple factors necessitating a multimodal treatment approach including a combination of options such as CBT, IPT interventions, individual psychodynamic

psychotherapy, family therapy school/learning interventions, and/or community consultation.

Pharmacotherapy. One way to conceptualize the efficacy of treatment is to calculate the number needed to treat (NNT) to get one response that it is attributable to active treatment and not placebo. Across all of the published and unpublished SSRI RCTs, depressed patients treated with SSRIs have a relatively good response rate (40%–70%), but the placebo response rate is also high (30%–60%), resulting in an overall NNT of 10 (95% confidence interval [CI] 7–14; Bridge et al., 2007 [rct]; Cheung et al., 2005 [rct]; Wagner, 2005 [rct]). With the exception of the fluoxetine studies (e.g., Emslie et al., 1997 [rct]), due to the high placebo responses, significant differences between SSRIs and placebo were only found in depressed adolescents (Bridge et al., 2007). The difference between the response to SSRIs and placebo is inversely related to the number of sites involved in the study (Bridge et al., 2007; Cheung et al., 2005). Fluoxetine is the only medication to be approved by the U.S. Food and Drug Administration (FDA) for the treatment of child and adolescent depression, and it shows a larger difference between medication and placebo than do trials with other antidepressants. It is not clear whether this is due to actual differences in the effect of the medication, to other related properties of the medication (long half-life may lessen the impact of poor adherence to treatment), or the studies involving fluoxetine were better designed and conducted or used more severely depressed patients.

Several studies showed small or no differences between the SSRI and placebo, in part because the rates of placebo response were high (e.g., Wagner et al., 2003 [rct]). Thus, it is possible that the depressive symptoms in youths may be highly responsive to supportive management, these studies included subjects with mild depressions, or other methodological issues are responsible for the lack of difference between medication and placebo, such as including subjects with mild to moderate depression and low medication doses (for a review of the limitations of current pharmacological trials, see Cheung et al., 2005).

The rate of remission (e.g., Children's Depression Rating Scale-Revised score $\leq$ 28 [Poznanski and Mokros, 1995]), a more stringent and yet more clinically relevant outcome, ranged between 30% and 40% (Emslie et al., 1997, 2002 [rct]; Goodyer et al., 2007 [rct]; Kennard et al., 2006 [rct]; March et al., 2004 [rct]; Wagner et al., 2003 [rct]). Possible explanations for the low rate of remission are that optimal pharmacological treatment may involve a higher dose or longer duration of treatment, the lack of treatment of comorbid conditions may affect depressive symptoms, and/or some children and adolescents need to receive a combination of both pharmacological and psychosocial interventions.

Few trials have evaluated the effects of other classes of antidepressants for the treatment of depressed youths. So far these RCTs have shown no differences between venlafaxine or mirtazapine and placebo (Bridge et al., 2007; Cheung et al., 2005 [rct]; Emslie et al., 2007 [rct]; Wagner, 2005 [rct]). Secondary analysis of the venlafaxine trials showed an age effect, with these medications being better than placebo for depressed adolescents, but not depressed children (Emslie et al., 2007 [rct]); however, children were treated with low venlafaxine doses. One study showed better response in most measurements between nefazodone and placebo for adolescents with MDD, but a second study including depressed children and adolescents was negative (Cheung et al., 2005). The response rates for the above-noted antidepressants and for placebo are comparable with those of the SSRIs. Small open-label studies have suggested bupropion's effectiveness in treating adolescent MDD with and without ADHD (e.g., Daviss et al., 2001 [ct]), but there are no RCTs. Similarly, no controlled studies using duloxetine have been reported for the treatment of youths with MDD. Finally, RCTs as well as a meta-analysis have shown that tricyclic antidepressants are no more efficacious than placebo for the treatment of child and adolescent depression (Hazell et al., 2006) and should not be used as a first-line medication. Moreover, they are associated with more side effects than the SSRIs and can be fatal after an overdose.

Side Effects. Overall, the SSRIs and other novel antidepressants have been well tolerated by both children and adolescents, with few short-term side effects. The side effects of the SSRIs and other serotonergic and/or adrenergic reuptake inhibitors novel antidepressants appear to be similar and dose dependent and may subside with time (Cheung et al., 2005; Emslie et al., 2006; Findling et al., 2002; Leonard et al., 1997; Safer and Zito, 2006). The most

common side effects include gastrointestinal symptoms, sleep changes (e.g., insomnia or somnolence, vivid dreams, nightmares, impaired sleep), restlessness, diaphoresis, headaches, akathisia, changes in appetite (increase or decrease), and sexual dysfunction. Approximately 3% to 8% of youths, particularly children, also may show increased impulsivity, agitation, irritability, silliness, and "behavioral activation" (Martin et al., 2004; Safer and Zito, 2006; Wilens et al., 1998). These symptoms should be differentiated from mania or hypomania that may appear in children and adolescents with, or predisposed to develop, bipolar disorder (Wilens et al., 1998). More rarely, the use of antidepressants has been associated with serotonin syndrome (Boyer and Shannon, 2005), increased predisposition to bleeding (e.g., easy bruising, epistaxis; Lake et al., 2000; Weinrieb et al., 2005), and increased suicidality (see below for details). Because of the risk for bleeding, patients treated with SSRIs and other antidepressants who are going to have surgery should inform their physicians because they may wish to discontinue treatment during the preoperative period. Venlafaxine and perhaps other noradrenergic reuptake inhibitors may elevate the blood pressure and cause tachycardia. Mirtazapine, a serotonin and adrenergic receptor blocker, may increase appetite, weight, and somnolence. Trazodone, a serotonin 2A receptor blocker and weak serotonin reuptake inhibitor, and mirtazapine are mainly used as adjunctive and transient treatments for insomnia. Trazodone should be used with caution in males because it can induce priapism. Nefazodone, a serotonin 2A receptor blocker and weak serotonin reuptake inhibitor, was taken off the market amid rare reports of hepatic failure being associated with its use. Although the rate of serious hepatic involvement is four times higher than in SSRIs, the absolute rate is still extremely low. The use of non–long-acting preparations of bupropion was associated with seizures, particularly if the doses were higher than 400 mg/day or were increased rapidly and possibly if subjects had bulimia. The long-term side effects of all antidepressants have not been systematically evaluated in children and adolescents.

Suicidal Ideation/Attempts. The FDA, in collaboration with Columbia University, evaluated the effects on suicidality of nine antidepressants used in 24 acute RCTs (16 MDD, 4 OCD, 2 generalized anxiety disorder, 1 SAD, and 1 ADHD; Hammad et al., 2006; Posner et al., 2007). The primary outcomes were spontaneously reported occurrences of suicidal ideation and behavior, "suicidal adverse events," and using the suicidal items of depressive ratings scales, representing emergence or worsening of suicidality. The suicide adverse events analyses showed an overall risk ratio (RR) for suicidality of 1.95 (95% CI 1.28–2.98). The overall RR for suicidal ideation was 1.74 (95% CI 1.06–2.86) and for suicidal attempts, it was 1.9 (1.0–2.86). When analyses were restricted to MDD trials for SSRIs, the overall RR was 1.66 (95% CI 1.02–2.68). Among the antidepressants, only the venlafaxine (and more recently fluoxetine in the TADS; Hammad et al., 2006) showed a statistically significant association with suicidality. Interestingly, however, the majority of the venlafaxine suicidal events involved ideation and not behavior. In general, these results translate to one to three spontaneously reported suicide adverse events for every 100 youths treated with one of the antidepressants included in the FDA meta-analyses. There were few suicidal attempts and no completions. In contrast to the analyses of the suicide adverse events, evaluation of the incidence of suicidal ideation and attempts ascertained through rating scales in 17 studies did not show significant onset or worsening of suicidality (RRs approximately 0.90; Hammad et al., 2006).

The above results need to be understood in the context of the limitations of the FDA study such as using the metric of relative risk, which is limited to trials with at least one event, inability to generalize the results to populations not included in RCTs, short-term data, not including all of the available RCTs, and multiple comparisons and the methodological limitations of spontaneously generated data (Hammad et al., 2006).

A more recent, thorough meta-analysis extended the FDA analyses by including more published and unpublished antidepressant RCTs (15 MDD, 6 OCD, and 6 anxiety disorders; Bridge et al., 2007). Using statistical methods similar to those used by the FDA study, this meta-analysis found a comparable overall small but significant increased relative risk for spontaneous reported suicidality (Bridge et al., 2007). When using pooled random effects analyses of risk differences instead of relative risk, both the new analyses of the FDA data and the recent meta-analyses yielded a small, but significant overall risk difference (drug minus placebo; FDA: 0.80, 95% CI 0.1–1.5 versus Bridge

et al.: 0.7, 95% CI 0.1–1.3). However, there were no longer significant differences for MDD (Bridge et al., 2007). Moreover, the overall number needed to harm (NNT to observe one adverse event that can be attributed to the active treatment) for MDD was 112 (Bridge et al., 2007). As stated above, the overall NNT for the antidepressants in pediatric depression is 10. Thus, taking into account the limitation of any meta-analysis, nearly 11 times more depressed patients may respond favorably to antidepressants than may spontaneously report suicidality.

As stated by the FDA (Hammad et al., 2006), the implications and clinical significance regarding the above-noted findings are uncertain because with the increase in use of SSRIs, there has been a dramatic decline in adolescent suicide (Olfson et al., 2003). Moreover, pharmacoepidemiological studies, while correlative rather than causal, support a positive relationship between SSRI use and the reduction in the adolescent and young adult suicide rate (Gibbons et al., 2005, 2006; Olfson et al., 2003; Valuck et al., 2004). Also, two recent studies showed increased suicide attempts only immediately before treatment with SSRIs or psychotherapy (Simon and Savarino, 2007), and, similar to the TADS, improved suicidal ideation after treatment was initiated.

How can we understand that there are increased rates of spontaneously reported serious adverse effects on drug versus placebo, but not any differences in suicidality on regularly assessed clinical measures? The clue may be in the term "spontaneous" and explanations of the association between drug and suicidality other than causality. One such alternative explanation is subjects on active drug have more side effects (e.g., headache), and, as a result, providers may have more opportunity/contact with subjects to hear about suicidal occurrences as opposed to these events being "caused" by antidepressants. Another alternative explanation is improvement from the antidepressant resulting in a subject talking about suicidal thoughts for the first time.

It is possible that, in a subgroup of patients treated with SSRIs, particularly those already agitated and/or suicidal, that treatment causes a disinhibition that leads to worsening of ideation and/or a greater tendency to make suicidal threats. Because this event usually leads to removal of the subject from the study and a change in treatment, analyses that look at the slope of suicidal ideation will not find an effect. In addition, suicidality as measured on rating scales is highly correlated with the severity of depression that is more likely to decline on drug than on placebo.

In conclusion, it appears that spontaneously reported events are more common in SSRI treatment. Nevertheless, given the greater number of patients who benefit from SSRIs than who experience these serious adverse effects, the lack of any completed suicides, and the decline in overall suicidality on rating scales, the risk/benefit ratio for SSRI use in pediatric depression appears to be favorable with careful monitoring.

Although the risk/benefit ratio favors the use of SSRIs, further work is required (Apter et al., 2006; Bridge et al., 2007; Emslie et al., 2006; March et al., 2006a,b). Also, it remains to be clarified whether certain factors such as sex; subject's history of suicidality; family history of suicidality; disorder (it appears that the effects are more obvious in depressed youths); severity of depressive symptoms at intake; doses, half-life, and type of antidepressants; time during treatment; withdrawal side effects (due to noncompliance or medication short half-life); induction of agitation, activation, or hypomania; and/or susceptibility to side effects (e.g., slow metabolizers or variations in genetic polymorphisms) are related to increased risk of suicidality (Apter et al., 2006; Brent, 2004; Bridge et al., 2007; Hammad et al., 2006; Safer and Zito, 2006).

Clinical Use. Except for lower initial doses to avoid unwanted effects, the doses of the antidepressants in children and adolescents are similar to those used for adult patients (Findling et al., 2002; Leonard et al., 1997). Some studies have reported that the half-lives of sertraline, citalopram, paroxetine, and bupropion SR are much shorter than reported in adults (Axelson et al., 2002, Daviss et al., 2005; Findling et al., 2006). Therefore, psychiatrists should be alert for the possibility of withdrawal side effects when these medications are prescribed once daily. Also, to avoid side effects and improve adherence to treatment, it is recommended to start with a low dose and increase it slowly until appropriate doses have been achieved. Patients should be treated with adequate and tolerable doses for at least 4 weeks. Clinical response should be assessed at 4-week intervals, and if the child has tolerated the antidepressant, the dose may be increased if a complete response has not been obtained

(Heiligenstein et al., 2006; Hughes et al., 2007). At each step, adequate time should be allowed for clinical response, and frequent, early dose adjustments should be avoided. However, patients who are showing minimal or no response after 8 weeks of treatment are likely to need alternative treatments. Furthermore, by about 12 weeks of treatment, the goal should be remission of symptoms, and in youths who are not remitted by that time, alternative treatment options may be warranted. Other strategies for nonresponders are described in Recommendation 15.

Given the small but statistically significant association between the antidepressants and suicidality, it is recommended that all of the patients receiving these medications be carefully monitored for suicidal thoughts and behavior as well as other side effects thought to be possibly associated with increased suicidality, such as akathisia, irritability, withdrawal effects, sleep disruption, increased agitation, and induction of mania or a mixed state, particularly during the first weeks of treatment. The FDA recommends that depressed youths should be seen every week for the first 4 weeks and biweekly thereafter, although it is not always possible to schedule weekly face-to-face appointments. In this case, evaluations should be briefly carried out by telephone, but it is important to emphasize that there are no data to suggest that the monitoring schedule proposed by the FDA or telephone calls have any impact on the risk of suicide. Monitoring is important for all patients, but patients at increased risk of suicide (e.g., those with current or prior suicidality, impulsivity, substance abuse, history of sexual abuse, family history of suicide) should be scrutinized particularly closely. Those with a family history of bipolar disorder should be carefully monitored for onset of mania or mixed state. After the continuation or maintenance phases are over, or when the antidepressants need to be discontinued, all antidepressants, except for fluoxetine, should be discontinued slowly. Fluoxetine, because of its long half-life, is the exception and can be stopped at once. Abrupt discontinuation of antidepressants may induce withdrawal symptoms, some of which may mimic a relapse or recurrence of a depressive episode (e.g., tiredness, irritability, severe somatic symptoms; Zajecka et al., 1997). Sometimes withdrawal symptoms can be accompanied by worsening or emergent suicidal symptoms. The withdrawal symptoms can appear after as soon as 6 to 8 weeks on the antidepressants and within 24 to 48 hours of discontinuation.

Careful attention to possible medication interactions is recommended because most antidepressants inhibit, to varying degrees, the metabolism of several medications that are metabolized by the diverse clusters of hepatic cytochrome P-450 isoenzymes. In addition, interactions of antidepressants with other serotonergic and/or noradrenergic medications, in particular, monoamine oxidase inhibitors, may induce the serotonergic syndrome, marked by agitation, confusion, and hyperthermia (Boyer and Shannon, 2005).

For further information regarding the management of medication, refer to the Practice Parameter for the Use of Psychotropic Medications in Children and Adolescents (American Academy of Child and Adolescent Psychiatry, submitted).

Recommendation 10. To Consolidate the Response to the Acute Treatment and Avoid Relapses, Treatment Should Always Be Continued for 6 to 12 Months [MS].

In naturalistic studies of depressed patients treated with either CBT or fluoxetine, the rate of relapse is high (Birmaher et al., 2000 [ut]; Emslie et al., 1998 [ut]; Kroll et al., 1996 [ut]), with the highest risk for relapse within 4 months of symptomatic improvement. After 12 weeks of open treatment with fluoxetine, a 6-month randomized, controlled fluoxetine discontinuation trial also showed that continued treatment with this SSRI was associated with a much lower rate of relapse (40%) compared to treatment with placebo (69%; Emslie et al., 2004 [ut]). The high relapse rate on fluoxetine was accounted for, at least in part, by the poor adherence to treatment. Residual depressive symptoms after the open trial were associated with higher rates of relapse during the discontinuation trial, indicating the need to seek remission and not only response to treatment. Monthly continuation therapy with CBT also resulted in a much lower relapse rate than that found in a historical control group that received acute treatment followed by no continuation treatment (Kroll et al., 1996 [ct]).

Until further research becomes available, continuation therapy for at least 6 to 12 months is recommended for all patients who have responded to the acute treatment. Often discontinuation can be tried during the summer, so that a relapse would be less disruptive to school function; however, it is important to

note that the treatment for depression can also be helping other disorders (e.g., anxiety) and discontinuation may accelerate the symptoms of these other conditions. During the continuation phase, patients typically are seen at least monthly, depending on clinical status, functioning, support systems, environmental stressors, motivation for treatment, and the presence of comorbid psychiatric or medical disorders. In this phase, psychotherapy consolidates the skills learned during the acute phase and helps patients cope with the psychosocial sequelae of the depression, but also addresses the antecedents, contextual factors, environmental stressors, and internal as well as external conflicts that may contribute to a relapse. Moreover, if the patient is taking antidepressants, follow-up sessions should continue to foster medication adherence, optimize the dose, and evaluate for the presence of side effects.

Recommendation 11. To Avoid Recurrences, Some Depressed Children and Adolescents Should Be Maintained in Treatment for Longer Periods of Time [CG].

As discussed in the Clinical Course section, MDD is a recurrent illness. Thus, once the child has been asymptomatic for approximately 6 to 12 months, the clinician must decide whether maintenance therapy is indicated and the type and duration of therapy. The main goal of the maintenance phase is to foster healthy growth and development and prevent recurrences. This phase may last 1 year or longer and is typically conducted with visits at a frequency of monthly to quarterly, depending on the patient's clinical status, functioning, support systems, environmental stressors, motivation for treatment, existence of comorbid psychiatric/medical disorders, and availability and skill of the clinician.

There are no treatment studies of youths to guide clinicians as to which patients require a longer period of continuation and maintenance treatment. In adults, those with at least three episodes of recurrent depression require longer periods of treatment (e.g., at least 3–5 years; Kupfer et al., 1992). One general rule of thumb is that the longer it takes for a patient to recover or the higher the number of recurrences, the longer the period of maintenance. Specifically, those patients with at least two episodes of depression or one severe episode or chronic episodes of depression should have maintenance treatment for longer than 1 year. Those with double depression (depression with comorbid DD) who have been depressed "as long as they can remember" may need treatment indefinitely, with an explanation to families that there is no hard-and-fast rule about this because of a lack of studies in this population. Moreover, other factors that are related to risk of a prolonged episode or recurrence should also make the clinician consider maintenance treatments. These factors include patient factors of comorbidity, psychosis, suicidality, number of prior episodes, environmental factors such as family disruption due to conditions external to the child (e.g., divorce, illness, job loss, homelessness), family psychopathology, and lack of community support.

Finally, it is important to treat the youths not only for a certain length of time but also to treat to achieve no or minimal residual symptoms because children and adolescents who have not recovered fully and still have subsyndromal depression are more vulnerable to recurrence (Brent et al., 2001; Lewinsohn et al., 1994; Pine et al., 1998).

Recommendation 12. Depressed Patients With Psychosis, Seasonal Depression, and Bipolar Disorder May Require Specific Somatic Treatments [CG].

Psychotic Depression. Although there are few studies in youths (Geller et al., 1985 [ct]), it appears that the combination of antidepressants with antipsychotics may be helpful for patients with psychotic depression. However, vague or mild psychotic symptoms in a depressed child may respond to antidepressants alone. Clinical consensus recommends the atypical antipsychotic medications combined with SSRIs as the treatment of choice for depressed psychotic youths. It is important to be aware of the short- and long-term side effects associated with the use of atypical antipsychotics and possible interactions with the antidepressants. How long these medications should be continued after the psychotic symptoms have improved is a question, but in general the recommendation is to slowly taper off these medications, with the eventual goal of keeping the child on monotherapy with an antidepressant.

In adults electroconvulsive therapy is particularly effective for this subtype of depression. Noncontrolled reports suggest that this treatment also may be useful for depressed psychotic adolescents (American Academy of Child and Adolescent Psychiatry, 2004).

SAD. A small RCT showed that bright light therapy is efficacious for youths with SAD (Swedo et al., 1997

[rct]). It appears that patients may respond better during the morning hours, but morning hours may be difficult on school days and for youths who refuse to wake up early in the morning. Bright light therapy has been associated with some side effects, such as headaches and eye strain. Some authors have recommended an ophthalmological evaluation before initiating light therapy, but this practice has been frequently questioned unless patients have a history of eye illness. Treatment with light may induce episodes of hypomania or mania in vulnerable patients.

Bipolar Disorder. The symptoms of unipolar and bipolar depression are similar; therefore, early in the course of illness, it is difficult to determine whether a patient needs only an antidepressant or would benefit from concomitant use of mood stabilizers. As noted under Differential Diagnosis, some specific symptoms may warn the clinician about the possibility that the child is at risk of the development of a manic or hypomanic episode. Sometimes the child experiences mild recurrent hypomanic symptoms that often are overlooked. If indicators of risk of bipolar disorder are present (see Differential Diagnosis section), then the clinician should discuss with the patient and family the pros and cons of initiating a prophylactic mood-stabilizing agent. Patients with a psychotic depression may be at greater risk of developing bipolar disorder (Geller et al., 1994; Strober and Carlson, 1982).

For mild to moderate unipolar depression in patients with a bipolar diathesis, it may be best to start with psychotherapy because the risk of manic conversion with the use of antidepressants is substantial (Martin et al., 2004). Also, if there is a strong suspicion that the child has bipolar disorder, a mood stabilizer, such as lithium carbonate, valproate, or lamotrigine may be indicated, particularly if the patient presents with a depressive disorder marked by mood lability (for further discussion of the treatment of bipolar depression, see Kowatch et al., 2005).

Recommendation 13. Treatment Should Include the Management of Comorbid Conditions [MS].

It is of prime importance to treat the comorbid conditions that frequently accompany MDD because these conditions may influence the initiation, maintenance, and recurrence of depression; reduce the probability of a complete treatment response; and increase the risk of suicide, other functional impairment in school, and problems with interpersonal relationships associated with MDD (Birmaher et al., 1996, 2002; Curry et al., 2006; Daviss et al., 2001 [ct]; Fombonne et al., 2001a,b; Hamilton and Bridge, 1999; Hughes et al., 1990, 2007). Likewise, depressive symptoms also may negatively influence the treatment of comorbid disorders. Although there are few studies (e.g., Daviss et al., 2001 [ct]) to guide the clinician in how to sequence the treatment of depression and other comorbid disorders, we suggest that the clinician make a determination of which condition is causing the greatest distress and functional impairment and begin treatment with that disorder. Also, if recovery from depression is unlikely until a comorbid condition is addressed (e.g., severe malnutrition in anorexia, severe substance dependence such as cocaine or intravenous drug dependence), then the comorbid condition must be addressed first.

Several psychosocial and pharmacological treatments used to treat depression also may be useful for the treatment of comorbid conditions, particularly anxiety disorders (Bridge et al., 2007). For depressed youths with comorbid substance abuse, it is important to treat both disorders because depressive symptomatology increases the risk of persistent substance abuse and vice versa; abuse worsens the prognosis of the depression, and depression comorbid with substance abuse is a potent set of risk factors for completed suicide (American Academy of Child and Adolescent Psychiatry, 2001; Gould et al., 1998). One RCT in adults as well as an open trial in adolescents with depression comorbid with alcohol abuse found that fluoxetine was superior to placebo in reduction of both depressive symptoms and alcohol use (Cornelius et al., 2001). However, additional studies regarding the use of psychosocial and pharmacological treatments for depressed youths with comorbid substance abuse are necessary.

There are few published studies examining the efficacy of psychopharmacological or psychotherapeutic treatments for depression in medically ill children and adolescents. Studies are necessary, however, because diagnosable depression may occur frequently in children and adolescents with medical diseases, and medical illness and its treatment may change the natural course of depression (Lewinsohn et al., 1996). Furthermore, the pharmacokinetics, pharmacodynamics, and side effects of the antidepressants may be affected by both the medical illnesses and medications used to treat these illnesses. Psychotherapy is useful not only for treating

depression in these children but also for helping these patients and their families cope with the medical illness (Kovacs et al., 1996; Szigethy et al., 2004 [ut]).

Recommendation 14. During All Treatment Phases, Clinicians Should Arrange Frequent Follow-up Contacts That Allow Sufficient Time to Monitor the Subject's Clinical Status, Environmental Conditions, and, If Appropriate, Medication Side Effects [MS].

Symptoms of depression, suicidal or homicidal ideation, mania or hypomania; development of new comorbid disorders; psychosocial and academic functioning; and environmental conditions should be reviewed frequently by interviewing the child, parents, and, if appropriate, other informants (e.g., teachers). Traditionally, treatment response has been determined by the absence of MDD criteria (e.g., no more than one *DSM* symptom; see Recommendation 6) or, more frequently, by a significant reduction (e.g., ≥50%) in symptom severity. However, using the latter criterion, patients deemed "responders" may still have considerable residual symptoms. Therefore, an absolute final score on the Beck Depression Inventory ≤9 (Beck and Steer, 1987) or Children's Depression Rating Scale (Poznanski and Mokros, 1995) ≤28 together with persistent improvement in patient's functioning for at least 2 weeks or longer may better reflect a satisfactory response. Overall improvement has also been measured using a score of 1 or 2 (very much or much improvement) in the Clinical Global Impression Scale, Improvement subscale (Guy, 1976).

Because the goal is to restore function and not just reduce symptoms, a lack of progress in functional status is an important clue that the depression is incompletely treated or that impaired functional status is due to a comorbid psychiatric or medical disorder or environmental factors. The functional improvement can be measured using several rating scales such as a score ≥70 on the Global Assessment of Functioning (*DSM-IV*; American Psychiatric Association, 2000b) or the Children's Global Assessment Scale (Shaffer et al., 1983).

If a patient is being treated with medications, then it is important to evaluate the adherence to medication treatment, presence of side effects, and youth and parent beliefs about the medication benefits and its side effects that may contribute to poor adherence or premature discontinuation of treatment. History of suicidality, homicidal ideation, and somatic symptoms should be evaluated before starting the pharmacological treatment, and during treatment they should be differentiated from symptoms of mood and other psychiatric or medical conditions.

Recommendation 15. During All Treatment Phases, for a Child or Adolescent Who Is Not Responding to Appropriate Pharmacological and/or Psychotherapeutic Treatments, Consider Factors Associated With Poor Response [MS].

When managing patients who are not responding to treatment, the following reasons for treatment failure should be considered: misdiagnosis, unrecognized or untreated comorbid psychiatric or medical disorders (e.g., anxiety, dysthymic, eating, substance use, personality, hypothyroidism), undetected bipolar disorder, inappropriate pharmacotherapy or psychotherapy, inadequate length of treatment or dose, lack of adherence to treatment, medication side effects, exposure to chronic or severe life events (e.g., sexual abuse, ongoing family conflicts), personal identity issues (e.g., concern about same-sex attraction), cultural/ethnic factors, and an inadequate fit with, or skill level of, the psychotherapist.

Preliminary results of the NIMH multicenter study, the Treatment of Resistant Depression in Adolescents (TORDIA), showed that in depressed adolescents who have failed to respond to an adequate trial with a SSRI, a switch to another antidepressant plus CBT resulted in a better response than a switch to another antidepressant without additional psychotherapy (Brent et al., 2007 [rct]).

Open small studies using lithium and MAOI augmentation have shown contradictory results (Ryan et al., 1988a [ut], b; Strober et al., 1992 [ut]). Adult studies suggest that augmentation with T3 is efficacious and well-tolerated, but such studies have not been conducted in younger populations (Cooper-Kazaz et al., 2007 [rct]). Sallee et al. (1997 [rct]) found that intravenous clomipramine was superior to placebo for adolescents with treatment-resistant depression. Finally, some reports have suggested that adolescents with treatment-resistant depression may respond to ECT (American Academy of Child and Adolescent Psychiatry, 2004), but further research in this area is needed.

Several psychopharmacological strategies have been recommended for adults with resistant depression that may be applicable to youths: optimization (extending the initial medication trial and/or adjusting the dose, addition of CBT or IPT), switching to another agent in the same or a different class of medications, augmentation, or

a combination (e.g., lithium, T_3; Hughes et al., 2007). Optimization and augmentation strategies are usually used when patients have shown a partial response to the current regimen, and switching is usually used when patients have not responded or cannot tolerate the medications, but no studies have validated these practices in children. In a landmark study of treatment-resistant depressed adults, after unsuccessful treatment with an SSRI, approximately one in four patients had a remission of symptoms after switching to another antidepressant (Rush et al., 2006 [rct], Trivedi et al., 2006 [rct]). In addition, a combination of medication plus CBT has been shown to be superior to medication management alone for the treatment of partial responders and for the prevention for relapse (Fava et al., 2004 [ut]; Keller et al., 2000 [rct]). A switch from one modality of treatment to another (medication to psychotherapy or vice versa) has been found to be helpful for some chronically depressed adults who have failed one monotherapy (Schatzberg et al., 2005 [ut]). Depressed adolescents and adults with a history of sexual abuse may show a lower likelihood for response to standard treatments and may need a psychotherapeutic approach that deals with interpersonal issues and the aftereffects of the trauma (Barbe et al., 2004b [rct]). Also, depressed adolescents randomized to CBT and fluoxetine showed the highest response when compared to those treated with monotherapy with CBT, fluoxetine, or placebo, although post hoc comparison between combination and fluoxetine alone was not significantly different, and, for more severe depressions, the combination was not superior to fluoxetine alone (Curry et al., 2006 [rct]). Finally, the use of somatic therapies that have not been well studied in children such as transcranial magnetic stimulation or more intensive somatic therapies for depressed teens such as electroconvulsive therapy should be considered.

Each of the above-noted strategies requires implementation in a systematic fashion, education of the patient and family, and support and education to reduce the potential for the patient to become hopeless.

PREVENTION

Recommendation 16. Children With Risk Factors Associated With Development of Depressive Disorders Should Have Access to Early Services Interventions [CG].

Several RCTs using psychoeducation, cognitive, coping and social skills, and family therapy have targeted children and adolescents deemed to be at risk of depression by virtue of having subsyndromal depressive symptoms, a previous episode of depression, and/or a family history of depression (Beardslee et al., 2003; Clarke et al., 1995, 2001, 2002 [rct]; Jaycox et al., 1994 [rct]; Weisz et al., 1997 [rct]).

A recent meta-analysis of the existing literature regarding the prevention of depressive symptoms in youth showed that programs that included populations at risk were more effective than those targeting general populations (universal studies), particularly for females and older subjects. However, the effects of these treatments were small to modest, both immediately post-intervention and at an average follow-up of 6 months (Horowitz and Garber, 2006).

Successful treatment of mothers with depression was associated with significantly fewer new psychiatric diagnoses and higher remission rates of existing disorders in their children (Weissman et al., 2006a). Maternal depression has also been associated with less response to CBT for depression (Brent et al., 1998). These findings support the importance of early identification and vigorous treatment for depressed mothers in primary care or psychiatric clinics.

Early-onset dysthymia is associated with an increased risk of MDD (Kovacs et al., 1994), indicating the need for early treatment. Also, there is evidence that anxiety disorder is a precursor of depression (Kovacs et al., 1989; Pine et al., 1998; Weissman et al., 2005), and treatment of this disorder may reduce the onset and recurrences of depression (Dadds et al., 1999; Hayward et al., 2000). Because SSRIs appear to have a much greater efficacy for anxiety than for depression, vigorous detection and treatment of anxiety disorders may reduce the risk of subsequent depression.

The strategies for the prevention of onset or of recurrence of depression should include the amelioration of risk factors associated with this disorder. In addition, prevention may also include lifestyle modifications: regular and adequate sleep, exercise, a coping plan for stress (e.g., meditation, yoga, exercise, social activities), pursuit of enjoyable and meaningful activities, and avoidance of situations that are predictably stressful and nonproductive. For those with recurrent depression, a proactive plan to avoid stressors and a plan for coping with anticipated difficulties may be helpful in relapse and recurrence prevention. Finally, it is

important to educate caregivers, school personnel, pediatricians, and youths about the warning signs of depressive disorder and appropriate sources of assessment and treatment.

PARAMETER LIMITATIONS

AACAP practice parameters are developed to assist clinicians in psychiatric decision making. These parameters are not intended to define the standard of care, nor should they be deemed inclusive of all of the proper methods of care or exclusive of other methods of care directed at obtaining the desired results. The ultimate judgment regarding the care of a particular patient must be made by the clinician in light of all of the circumstances presented by the patient and his or her family, the diagnostic and treatment options available, and available resources.

Disclosure: Dr. Birmaher participates or has participated in forums for Solvay Pharmaceuticals, Inc., and Abcomm, Inc., and receives royalties from Random House. Dr. Bukstein receives or has received research support, acted as a consultant to, and/or served on the speakers' bureaus of Cephalon, Forest, McNeil Pediatrics, Shire, Eli Lilly, and Novartis. Drs. Brent, Bernet and Walter have no financial relationships to disclose.

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Family-Centered Bedside Rounds: A New Approach to Patient Care and Teaching Stephen E. Muething, MD, Uma R. Kotagal, MBBS, MSc, Pamela J. Schoettker, MS, Javier Gonzalez del Rey, MD, Thomas G. DeWitt, MD

The importance of patient-centered care and the role of families in decision-making are becoming more recognized. Starting with a single acute care unit, a multidisciplinary improvement team at Cincinnati Children's Hospital developed and implemented a new process that allows families to decide if they want to be part of attending-physician rounds. Family involvement seems to improve communication, shares decision-making, and offers new learning for residents and students. Despite initial concerns of staff members, family-centered rounds has been widely accepted and spread throughout the institution. Here we report our experiences as a potential model to improve family-centered care and teaching. **Pediatrics** 2007;119:829–832.

AACAP OFFICIAL ACTION

Clinical Practice Guideline for the Assessment and Treatment of Children and Adolescents With Anxiety Disorders

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Anxiety disorders are among the most common psychiatric disorders in children and adolescents. As reviewed in this guideline, both cognitive-behavioral therapy (CBT) and selective serotonin reuptake inhibitor (SSRI) medication have considerable empirical support as safe and effective short-term treatments for anxiety in children and adolescents. Serotonin norepinephrine reuptake inhibitor (SNRI) medication has some empirical support as an additional treatment option. In the context of a protracted severe shortage of child and adolescent–trained behavioral health specialists, research demonstrating convenient, efficient, cost-effective, and user-friendly delivery mechanisms for safe and effective treatments for child and adolescent anxiety disorders is an urgent priority. The comparative effectiveness of anxiety treatments, delineation of mediators and moderators of effective anxiety treatments, long-term effects of SSRI and SNRI use in children and adolescents, and additional evaluation of the degree of suicide risk associated with SSRIs and SNRIs remain other key research needs.

Key Words: clinical practice guideline, anxiety, child psychiatry, assessment, treatment

J Am Acad Child Adolesc Psychiatry 2020;59(10):1107–1124.

The objective of this Clinical Practice Guideline is to enhance the quality of care and clinical outcomes for children and adolescents with anxiety disorders as defined by the *Diagnostic and Statistical Manual of Mental Disorders*.[1] The primary aim of the guideline is to summarize empirically based guidance about the psychosocial and psychopharmacologic treatment of anxiety. A secondary aim is to summarize expert-based guidance about the assessment of anxiety as an integral part of treatment and the implementation of empirically based treatments in clinical practice.

Anxiety disorders are among the most common psychiatric disorders in children and adolescents. At any given time, nearly 7% of youths worldwide have an anxiety disorder[2]; estimated lifetime prevalence in the United States approximates 20% to 30%.[3,4] For specific anxiety disorders among youths 13 to 18 years old, lifetime prevalence rates approximate 20% for specific phobia, 9% for social anxiety, 8% for separation anxiety, and 2% each for agoraphobia, panic, and generalized anxiety.[3]

The median age of onset of anxiety disorders approximates 11 years[5]; however, each anxiety disorder often (but not always) onsets during a specific developmental phase: separation anxiety during the preschool/early school-age years; specific phobias in the school-age years; social anxiety in the later school-age and early adolescent years; and generalized anxiety, panic, and agoraphobia in the later adolescent/young adult years.[6] The development of an anxiety disorder may be foreshadowed by behavioral inhibition,[7] autonomic hyperreactivity,[8] or negative affectivity.[9] Parent/parenting factors,[10] stressful/traumatic exposures,[11] and insecure attachment[12] also may play important etiologic roles. Anxiety disorders (especially generalized anxiety) are highly comorbid with each other and with other psychiatric disorders,[13,14] particularly depression[15] but also bipolar, attention-deficit/hyperactivity disorder (ADHD), learning/language, behavior, obsessive-compulsive, eating, and substance-related disorders. For comorbid occurrences, multifaceted treatment plans likely are necessary.[16]

Although onset can be acute, the course of anxiety tends to be chronic,[17] often with waxing and waning, and exhibits both homotypic (prediction of a disorder by the same disorder) and heterotypic (prediction of a disorder by a different disorder) continuity.[18] Likely reflecting a common underlying vulnerability (eg, "negative valence systems"),[19] examples of heterotypic continuity are the prediction of

panic and depressive disorders in adolescence and adulthood by separation anxiety in childhood, and the prediction of social anxiety in adolescence and adulthood by selective mutism in childhood.

The sequelae of untreated child and adolescent anxiety disorders are manifold, including impairments in social, educational, occupational, health, and mental health outcomes extending from childhood into adulthood.[20-22] Among adolescents with anxiety, 9% were reported to have had suicidal ideation, and 6% made suicide attempts[23]; panic disorder[24] and generalized anxiety disorder with comorbid depression[25] may convey the greatest risk.

Despite the availability of effective treatments for anxiety,[26] less than one-half of youths needing mental health treatment receive any care, and fewer still receive evidence-based care.[27-30] Better identification, assessment, and treatment of anxiety disorders by clinicians from multiple disciplines could have a substantial impact on the individual and public health burden of mental illness in children and adolescents.

OVERVIEW OF THE GUIDELINE DEVELOPMENT PROCESS

Authorship, Source, and Scientific Review

The authors of this guideline (the Guideline Writing Group) are co-chairs and members of the AACAP Committee on Quality Issues (CQI) (https://www.aacap.org/AACAP/Resources_for_Primary_Care/Practice_Parameters_and_Resource_Centers/Practice_Parameters.aspx).[31] The CQI is charged by AACAP with the development of Clinical Practice Guidelines in accordance with standards promulgated by the Institute of Medicine (IOM)[32] and the Appraisal of Guidelines Research & Evaluation (AGREE) Next Steps Consortium.[33] Both standard sets emphasize *rigor* (critically appraised empirical evidence) and *transparency* (minimization of conflicts of interest and well-delineated guideline development process). CQI chairs are nominated by the AACAP president based upon their expertise and experience in the synthesis of psychiatric knowledge and their lack of relevant conflicts of interest. CQI members are nominated by CQI co-chairs to broadly represent AACAP members in geographic, gender, and professional practice type, duration and setting domains, and to have no relevant conflicts of interest. Prospective CQI members are reviewed and approved by the AACAP president.

In this guideline, statements about the treatment of anxiety disorders are based upon empirical evidence derived from a critical systematic review of the scientific literature conducted by the Mayo Clinic Evidence-based Practice Center under contract with the Agency for Healthcare Research and Quality (AHRQ).[34-36] (Because selective mutism was not included as a primary disorder in studies included in the AHRQ/Mayo review, the treatment of this disorder is not addressed in this guideline). Insofar as available, evidence from meta-analyses published since the AHRQ/Mayo review are presented to support or refute the AHRQ/Mayo findings.[37-43]

Because of sparse or absent empirical evidence, clinical guidance about the assessment of anxiety disorders and about the implementation of empirically based treatments is based primarily upon expert opinion and consensus as presented in chapters in leading textbooks of child and adolescent psychiatry,[44-61] the *DSM-5,*[1] previously published clinical practice guidelines,[62-65] and government-affiliated prescription drug information websites (https://dailymed.nlm.nih.gov/dailymed/[66]; https://www.fda.gov/Drugs[67]).

The peer review and approval process for the draft guideline spanned the period February 1, 2019, to March 11, 2020, and included reviewers representing the following stakeholder groups (see end of this document for complete list): 1) topic experts; 2) other members of the AACAP CQI; 3) other relevant AACAP committees; 4) the AACAP Assembly of Regional Organizations; 5) relevant external organizations; and 6) AACAP members. All suggested edits were considered; however, the CQI Guideline Writing Group exercised editorial authority as to whether the suggested edits were included in the final document. Final approval of the guideline as an AACAP Official Action rested with the AACAP Council.

ASSESSMENT OF ANXIETY

Diagnostic evaluation is an essential prerequisite for the treatment of an anxiety disorder. Specialized clinical education, training, and experience are necessary to conduct a diagnostic evaluation of a child or adolescent in accordance with current psychiatric nomenclature (*DSM-5*[1]). A diagnostic evaluation identifies the following: symptoms; syndromal symptom combinations; symptom frequency, severity, onset, and duration; degree of associated distress and functional impairment; developmental deviations; and physical signs. Clinical expertise is required to differentiate anxiety disorders from normal psychological processes common to human experience.

Identification

At present, there is no empirically based (eg, U.S. Preventive Services Task Force) recommendation for universal

screening for anxiety disorders in children and adolescents. However, in primary care, school, or other child-serving settings, freely available general social−emotional screening instruments (eg, Pediatric Symptom Checklist [https://www.massgeneral.org/psychiatry/treatments-and-services/pediatric-symptom-checklist/[68]]; Strengths and Difficulties Questionnaire [http://www.sdqinfo.com[69]]) can be deployed systematically to standardize identification of anxiety concerns. Early identification of an anxiety concern, if confirmed as a problem upon follow-up assessment, can facilitate early intervention, including guided self-management and focused intervention for subclinical and mild presentations.

In the context of a psychiatric evaluation, symptoms of anxiety typically are identified through spontaneous youth or parent report (the presenting problem or chief complaint), during the clinician's review of psychiatric symptoms, the conduct of the mental status examination, or through input from referral sources. However, because of the variability inherent in nonsystematic methods of identification, a more standardized approach may be useful. As one option, the American Psychiatric Association (APA) developed the freely available parent- and self-rated Level 1 Cross-Cutting Symptom Measures (https://www.psychiatry.org/psychiatrists/practice/dsm/educational-resources/assessment-measures[70]) to screen for multiple psychiatric disorders including anxiety. These instruments could be included in intake packets to systematically and efficiently gather information about presenting problems prior to the evaluation. The parent and self-rated versions of the Level 1 Cross-Cutting measure have demonstrated good reliability in the *DSM-5* field trials conducted in pediatric clinical samples across the United States.[71]

Evaluation

Clinically significant anxiety (ie, an anxiety disorder) must be distinguished from everyday worries and fears, which are common to the human experience and normative (even when exaggerated) in specific developmental stages (eg, being startled and exposure to strangers in infants, separation from caregiver in toddlers, supernatural creatures in preschoolers, physical well-being and natural disasters in school-aged children, and social and existential concerns in adolescents). In *DSM-5,*[1] mental disorders are defined as "a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning." By *DSM* convention, a mental disorder is diagnosed if all or a threshold of diagnostic criteria for the given disorder are met. Included in most diagnostic criteria sets is the requirement for a specific frequency and duration of symptoms as well as clinically significant distress and functional impairment, along with the caveat that alternative mental, medical, and substance-related explanations for the symptom presentation must have been ruled out before the diagnosis is applied.

In *DSM-5,*[1] diagnostic criteria are provided for 11 anxiety disorders (one with 8 subcategories).[a] Although the boundaries between psychiatric disorders are now recognized as porous, such that different disorders within and across categories may share similar symptoms, risk factors, and neural substrates, diagnostic precision nonetheless is key for understanding disorder course and prognosis and for guiding empirically based treatment recommendations.

According to *DSM-5,*[1] separation anxiety is characterized by developmentally inappropriate, excessive worry or distress associated with separation from a primary caregiver or major attachment figure. Selective mutism is characterized by absence of speech in certain social situations despite the presence of speech in other situations (usually at home). Specific phobia is characterized by excessive fear or worry about a specific object or situation. Social anxiety is characterized by excessive fear or worry about being negatively evaluated by others in social situations. Panic (ie, abrupt surge of intense fear or discomfort) is characterized by recurrent unexpected panic attacks with physical and cognitive manifestations. Agoraphobia is characterized by excessive fear or worry about being in situations (eg, crowds, enclosed spaces) in which the individual may be unable to escape or get help should panic-like or other overwhelming or embarrassing symptoms occur. Generalized anxiety is characterized by excessive, uncontrollable worries regarding numerous everyday situations or activities. Substance/medication-induced anxiety and anxiety due to another medical condition are characterized by anxiety occurring in the context of substance/medication use or a physical illness. When diagnostic criteria are not fully met for a given anxiety disorder or if a precise diagnosis is not possible due to limited information or other factors, *DSM-5* includes "other specified" and "unspecified" diagnoses to be applied in these circumstances. The "unspecified" diagnosis may be the best diagnostic choice for nonbehavioral health

[a]*DSM-5* Anxiety Disorders with *International Classification of Diseases–10* code: Separation Anxiety Disorder (ICD F93.0); Selective Mutism (ICD F94.0); Specific Phobia (Animal: ICD F40.218, Natural environment: ICD F40.228, Fear of blood: ICD F40.230, Fear of injections and transfusions: F40.231, Fear of other medical care: F40.232, Fear of injury: F40.233, Situational: F40.248, Other: F40.298); Social Anxiety Disorder (F40.10); Panic Disorder (F41.0); Agoraphobia (F40.00); Generalized Anxiety Disorder (F41.1); Substance/Medication-Induced Anxiety Disorder (see substance-specific codes), Anxiety Disorder Due to Another Medical Condition (F06.4); Other Specified Anxiety Disorder (F41.8); and Unspecified Anxiety Disorder (F41.9).

clinicians, who may not possess detailed knowledge of *DSM-5* criteria for specific anxiety disorders.

Evaluation Structure. A diagnostic interview for anxiety includes the parent/guardian and patient, either separately or together or both as developmentally and clinically indicated. Interview of the patient requires a developmentally sensitive approach that may use multiple age-appropriate assessment techniques (eg, direct and indirect questioning, interactive and projective techniques, symptom rating scales, behavioral approach tests). Family assessment can reveal environmental reinforcements for anxiety, and observations of parenting styles and behaviors can identify those that are potentially anxiogenic. Input from collateral sources (records, interviews, rating scales), including (as applicable and with parent/guardian−patient consent) other family members, teachers, primary care and behavioral health clinicians, and/or child agency workers, can add depth and breadth to diagnostic information. Because of the multiple sources of information, a diagnostic evaluation of a child or adolescent may involve more than one session as allowed by current diagnostic billing code (Current Procedural Codes [CPT] 90791, 90792) specifications.

As lack of appropriate linguistic ability or interpreter support has been associated with misdiagnosis as well as adverse clinical outcomes,[72] it is optimal to conduct the diagnostic evaluation in the language in which the child and parents/guardians are proficient. If live interpreter services are not available, telephonic or televideo interpreter services may be an alternative.

Differential Diagnosis. The primary goal of the history of present illness is to determine whether *DSM-5*[1] diagnostic criteria for a specific anxiety disorder are met, and to rule out alternative explanations ("masqueraders") for the symptom presentation. In addition, characterization of previous anxiety presentations and response to previous treatments will inform current treatment choice.

Medical conditions associated with anxiety include (but are not limited to) hyperthyroidism, caffeinism, migraine, asthma, diabetes, chronic pain/illness, lead intoxication, hypoglycemic episodes, hypoxia, pheochromocytoma, central nervous system disorders, cardiac arrhythmias, cardiac valvular disease, systemic lupus erythematosus, allergic reactions, and dysmenorrhea. Although laboratory testing is not routine in the evaluation of a suspected anxiety disorder, in collaboration with the child's primary care practitioner, testing (eg, glucose, thyroid function) can be completed if suggested by signs and symptoms of a medical condition. For anxious youths presenting with somatic symptoms, the nature and severity of those symptoms are noted at baseline so that the somatic symptoms are not falsely attributed to adverse effects of medication treatment.

Medications that can cause anxiety include (but are not limited to) bronchodilators, nasal decongestants and other sympathomimetics, antihistamines, steroids, dietary supplements, stimulants, antidepressants, antipsychotics, and withdrawal from benzodiazepines (particularly short-acting). Medication reconciliation is a routine part of an evaluation for a suspected anxiety disorder.

A wide array of licit and illicit substances can cause anxiety, including (but not limited to) marijuana, cocaine, anabolic steroids, hallucinogens, phencyclidine, and withdrawal from nicotine, alcohol, and caffeine. Environmental etiologies such as exposure to organophosphates and ingestion of metals (eg, lead, arsenic) can also be considered. Although drug and toxin testing are not routine in the evaluation of a suspected anxiety disorder, testing can be considered if exposure is reported.

Mental conditions that may include symptoms that are similar to those of anxiety disorders are ADHD (distractibility, restlessness), depression (distractibility, insomnia, somatic complaints), bipolar disorder (distractibility, restlessness, irritability, insomnia), obsessive-compulsive disorder (intrusive thoughts, avoidance, reassurance seeking), psychotic disorders (restlessness, agitation, social withdrawal, distractibility), autism spectrum disorder (social withdrawal, social skills deficits, distractibility), and learning disorders (worries about school performance).

Psychiatric Comorbidities. Anxiety disorders commonly co-occur with each other; other common comorbidities include (but are not limited to) depression, ADHD, and behavior, bipolar, obsessive-compulsive, eating, learning, language, and substance-related disorders. With selective mutism, developmental and communication disorders frequently co-occur. Comorbidities may heighten distress and functional impairment and may worsen treatment outcomes. Each comorbid disorder may require a separate treatment plan and may influence the selection of treatment for the anxiety disorder.

Use of the Parent- and Self-Rated Level 1 Cross-Cutting Symptom Measures[70] or screening questions embedded in structured interview guides can standardize and enhance the efficiency of the psychiatric review of symptoms to assess for psychiatric comorbidities. If screen questions on these instruments are positively endorsed, the ensuing interview can ascertain whether full diagnostic criteria are met for the given disorder. Each condition for which full diagnostic criteria are met are diagnosed as such, unless *DSM-5* hierarchical rules[1] apply.

Medical Comorbidities. Children and adolescents with anxiety disorders are more likely to present with a variety of health problems, including headaches, asthma, gastrointestinal disorders, and allergies. The anxiety and physical disorders variously can be coincidental, in which the anxiety that precedes or follows the physical disorder is related to factors other than the illness itself, or can be causal, in which the anxiety contributes to or results from the physical illness. Examples of the latter include physical/physiological pathology secondary to anxiety symptoms, anxiety symptoms secondary to physical pathology/physiology, and anxiety as a reaction to physical illness and/or treatment. Whatever the presumed type of association, each disorder, whether physical or psychological, is separately assessed and treated.

Structured Interview Guides. Although the use of completely structured interview guides is infrequent in nonresearch settings, such guides have been shown to substantially enhance the reliability of psychiatric diagnosis over unstructured clinician interviews, which are vulnerable to a number of information collection biases.[73] Structured interview guides for children and adolescents have generally similar, moderately acceptable psychometric properties; hence, the decision to use a structured interview as part of a diagnostic evaluation will depend upon consideration of the advantages (eg, enhanced diagnostic accuracy) and disadvantages (eg, time, cost, burden) specific to each situation and setting. The use of computerized versions of interview guides could enable a psychiatric symptom review before the first appointment (ideally at home through a secure portal) as a structured, comprehensive first step in elucidating the differential diagnosis.[74]

The proprietary Anxiety Disorders Interview Schedule (ADIS), considered in research settings to be a gold standard for assessing childhood anxiety, addresses all *DSM-IV* anxiety disorders; in addition, screening sections for other psychiatric disorders are included to allow assessment of comorbidities.[75] A freely available option for structured assessment is the K-SADS PL (Present and Lifetime) *DSM-5* interview guide (https://www.pediatricbipolar.pitt.edu/sites/default/files/KSADS_DSM_5_Supp3_AnxietyDO_Final.pdf[76]), which includes sections assessing panic, agoraphobia, separation anxiety, social anxiety, selective mutism, specific phobia, and generalized anxiety disorders. The K-SADS-PL *DSM-5* also includes screening and follow-up questions for other disorder categories, which can facilitate efficient identification of potential anxiety masqueraders and comorbidities.

Symptom Rating Scales. Although not diagnostic, standardized symptom rating scales can be useful to support an anxiety diagnosis, to characterize the nature and breadth of specific symptoms, and to quantify pretreatment symptom severity as a baseline for tracking response to treatment over time. Moreover, in some situations, individual or combinations of multi-informant symptom rating scales may predict anxiety diagnoses as well as the ADIS structured interview, thereby reducing assessment burden.[77] Several anxiety rating scales with acceptable psychometric properties are freely available, both for the general construct of anxiety as well as for specific anxiety disorders; for example:

- Screen for Child Anxiety Related Emotional Disorders (SCARED), parent and child versions https://www.pediatricbipolar.pitt.edu/resources/instruments[78]
- Spence Children's Anxiety Scale (SCAS), parent and child versions https://www.scaswebsite.com[79]
- Preschool Anxiety Scale, parent version https://www.scaswebsite.com[79]
- Generalized Anxiety Disorder−7 (GAD-7), teen/adult version https://www.phqscreeners.com[80]

In addition, the APA offers the field-tested[1] parent- and self-rated Level 2 Cross-Cutting Symptom Measures for Anxiety that explore anxiety endorsed on the Level 1 Measure ("mild" or greater on any anxiety item) in greater depth, and the self-rated Disorder-Specific Severity Measures for clinically diagnosed separation anxiety, specific phobia, social anxiety, agoraphobia, and generalized anxiety disorders to track response to treatment over time (https://www.psychiatry.org/psychiatrists/practice/dsm/educational-resources/assessment-measures[70]).

There is poor to moderate agreement between parent and youth reports on structured interview guides and symptom rating scales.[81,82] However, discrepancies between informants are to be expected, as they reveal each informant's unique view of the child's anxiety symptoms, which are internal and may not be readily or accurately discerned by others. Although the youth's report is generally considered to be paramount for internalizing disorders, [83,84] the simple rule of regarding a symptom as being present by any informant's report can be an acceptable resolution of discrepancies.

Mental Status Examination. In the mental status examination, signs of anxiety can include fastidious or disheveled appearance, poor eye contact, poor engagement/uncooperativeness, shy demeanor, clinginess, tremor, fidgetiness/restlessness, "nervous" habits, hypervigilance, poverty of or pressured speech, perseverative or ruminative thought processes, worry- or fear-laden thought content, distractibility, irritability/agitation, and poor insight and judgment.

Because these signs are nonspecific to anxiety (and may be absent), they are largely adjunctive to other diagnostic information.

Clinical Formulation. Beyond diagnosis, the contextual (eg, stressors, strengths, environmental supports, cultural/spiritual/gender/sexual orientation) and historical (eg, medical, developmental, educational, family, social) sections of the diagnostic evaluation guide the development of a clinical formulation, which summarizes hypotheses regarding the biological, psychological, and social factors that may have predisposed, precipitated, or perpetuated the symptom presentation.

Key biological vulnerabilities for anxiety include family history of an anxiety disorder signaling inherited vulnerabilities in brain structure and function; acquired insult to the developing brain; autonomic hyperreactivity; temperament characterized by negative affectivity, behavioral inhibition, or sleeping/eating irregularity; and chronic medical conditions. Hypothesized psychological vulnerabilities include those derived from attachment theory (insecure attachment), cognitive-behavioral theory (maladaptive cognitive schemas, information-processing errors, negative self-evaluations, disconnects between feelings and behaviors), psychodynamic theory (ego deficits, problems in internalized object relations, unconscious conflicts), and mindfulness theory (instability of affect management). Key social vulnerabilities include stressful/traumatic life events, anxiogenic parenting behaviors (overprotection/overcontrol, high rejection/criticism, modeling anxious thoughts), social skills deficits, peer rejection, inappropriate expectations for achievement, lack of support/opportunities for competency development, and sociodemographic/cultural discordance with prevailing norms (poor "fit" in a given environment).

The biopsychosocial formulation can be organized to reflect predisposing, precipitating, perpetuating, and protective (ameliorating) factors ("4 P's") influencing the development of psychopathology.[85] Predisposing factors are areas of vulnerability that increase the risk for psychopathology and encompass primarily the biological factors of the biopsychosocial formulation. Precipitating factors are stressors or other contextual events that have a chronologic association with symptom onset. Perpetuating factors are any aspects of the patient, family, or community that serve to perpetuate the symptoms. Protective (ameliorating) factors include the patient's own areas of strength as well as strengths in the family and community. The cross-organization of both biopsychosocial and 4P factors can optimize the comprehensiveness of the treatment plan.

Safety. Safety risks, including but not limited to suicidal thoughts and behaviors, self-harm, risk-taking behaviors, and impulsivity, are assessed both at the time of evaluation and during treatment of an anxiety disorder, as these risks have been associated both with anxiety and more rarely with its treatment with antidepressant medications. Anxiety disorders in general and separation anxiety in particular may suggest the need for exploration of exposure to traumatic events. In the case of abuse or neglect, reporting to the state child welfare authority is required. Gathering information from multiple sources and by varied culturally and developmentally sensitive techniques may be needed in evaluating safety risks. Assessment culminates in two basic questions: Is the patient at current risk? Are the patient and family able to adhere to recommendations regarding supervision, safeguarding, and follow-up care? The answers to these questions can lead to the appropriate level and intensity of care. Psychiatric hospitalization is likely indicated when the youth actively voices intent to harm and in the context of altered mental status (including severe anxiety/agitation), multiple previous self-harm attempts, previous unsuccessful treatment, and caregiver incapacity.

Treatment Planning. Treatment planning derives from the diagnoses and clinical formulation. High-quality treatment plans are safe, timely, effective, efficient, feasible, equitable, and child and family centered.[86] A range of potentially effective treatments and other interventions are explained in accordance with the cognitive/linguistic/cultural level of the parents/guardians and patient, prioritized according to the acuity, severity, distress, and impairment associated with each diagnosed disorder. Reviewing the patient and parent/guardian preferences regarding the treatment options presented can increase the likelihood of engagement and adherence to the plan. Level of care decisions are informed by diagnosis, the current severity of symptoms, the presence of comorbid medical or psychiatric disorders, the assessment of the child's risk to self or others, the child's prior illness course and complications, the child's potential supports, and the treatment alliance between the clinician and the child and family.

In clinical practice, five components that generally are included in a discussion seeking to obtain informed consent for treatment are as follows[87]: 1) the diagnosis; 2) the nature and purpose of the proposed treatment; 3) the attendant risks and benefits of the proposed treatment; 4) alternative treatments and their risks and benefits; and 5) the risks and benefits of declining treatment. Strategies for improving parent/guardians' and patients' comprehension of risks and benefits can include providing written educational materials, multimedia presentations, decision-making worksheets, and standardized consent forms; asking for a "repeat back" of information provided; and engaging in back-and-

forth discussions until understanding is achieved. Documentation of the informed consent process provides evidence that the patient and parent/guardian were adequately prepared to provide assent/consent for treatment.

The incorporation of cultural and spiritual values, beliefs, and attitudes in treatment interventions can enhance the child's and family's participation in treatment and treatment effectiveness.[72] Treatment recommendations can draw from those proved to be effective in the minority population in question, and reflect ethnopharmacologic factors (eg, pharmacogenomic, dietary, herbal) that may influence the child's response to medications or experience of adverse effects.

Successful treatment is a collaborative effort among all involved parties with well-defined roles and responsibilities, including the clinician's role in generating motivation in the child and parents/guardians to adhere to the treatment plan. Inquiring about the parents' understanding of the outcomes of the assessment, addressing any questions or concerns, and discussing the logistics of treatment recommendations improves the chance that barriers to treatment are adequately addressed. If treatment will be elsewhere, assisting the family with the referral improves the likelihood of referral completion. Parents/guardians who themselves struggle with anxiety can benefit from additional psychoeducation and support in fostering their child's successful anxiety management; a referral for parental treatment may be appropriate.

Feedback to the patient's medical care team is generally permissible with basic consent for treatment, although definitions of care team and regulations vary by state. If parents/guardians specifically consent, feedback to child-serving systems with which the patient is involved (medical, educational, juvenile justice, child welfare) can facilitate coordination of care. Prompt, concise, and jargon-free feedback is most helpful; for example, feedback might include reiteration of the presenting problem/reason for referral, a brief description of the assessment process, the diagnoses given, and the treatments recommended.

TREATMENT OF ANXIETY

Development of Treatment Statements From the AHRQ/Mayo Systematic Review

The objective of the AHRQ/Mayo review[34-36] was to evaluate the effectiveness of psychotherapy and pharmacotherapy for the treatment of specific child and adolescent anxiety disorders and to evaluate the safety concerns associated with these treatments. In August 2017, the AHRQ/Mayo systematic review[34] was made available in its entirety on the Internet and as a synopsis in a pediatric journal.[35] Errata from the original review were published in July 2018.[36]

To be eligible for the AHRQ/Mayo review, studies must have met all of the following criteria: 1) included children and adolescents between 3 and 18 years old with a confirmed diagnosis of panic, social anxiety, specific phobia (including school phobia), generalized anxiety, or separation anxiety disorder who 2) received any psychotherapy or pharmacotherapy, alone or combined; and 3) reported specified outcomes. Specified outcomes included the following: 1) primary anxiety symptoms from measures completed by the patient, parent, or clinician; 2) secondary anxiety outcomes such as coping, avoidance, or anxious thoughts; 3) global function; 4) social function; 5) satisfaction with treatment; 6) response to treatment; and 7) remission of the disorder (see AHRQ/Mayo review for measures used for each outcome category[36]). Both randomized controlled trials (RCTs) and comparative observational studies were included for effectiveness outcomes; case reports or case series were also used to identify adverse events (AEs).

The key questions of the AHRQ/Mayo review were twofold: 1) what is the comparative effectiveness of the available treatments[b] for panic, social anxiety, specific phobia (including school phobia), generalized anxiety, and separation anxiety disorders? 2) What are the comparative potential harms regarding the available treatments for these disorders?

AHRQ/Mayo Systematic Review Rating Procedure. The strength of evidence (SOE) for each measured outcome (eg, parent-rated anxiety symptoms) within each comparison (eg, fluoxetine vs. CBT) across all studies included in the AHRQ/Mayo review was rated via a consensus process by the Mayo reviewers in accordance with the AHRQ Methods Guide for Effectiveness and Comparative Effectiveness Reviews.[88] Randomized controlled trials (RCTs) started with high SOE; observational studies started with low SOE. Initial SOE ratings based upon study type were then raised or lowered in accordance with the SOE assessed across five additional domains: 1) risk of bias (impact on inference); 2) precision (sample size, confidence intervals); 3) directness (relevance to patient); 4) consistency (degree of heterogeneity of findings); and 5) publication bias (nonpublication

[b]Psychotherapy treatments: cognitive-behavioral therapy, parent-child interaction therapy, problem-solving therapy, third-wave (mindfulness) therapy, psychodynamic psychotherapy, family therapy, attention modification, motivational interviewing, eye movement desensitization reprocessing therapy (EMDR); pharmacologic treatments: sertraline, citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, venlafaxine, atomoxetine, reboxetine, duloxetine, alprazolam, chlordiazepoxide, clonazepam, imipramine, clomipramine, mebicarum, buspirone, mirtazapine, and nefazodone.

of study results). For RCTs, risk of bias was assessed using the Cochrane Risk of Bias tool[89] (assessing random sequence generation; allocation concealment; blinding of participants, personnel, and outcome assessors; attrition bias; incomplete outcome data; selective reporting). For observational studies, risk of bias was assessed using the Newcastle−Ottawa Scale[90] (assessing representativeness of the study population; selection of cohorts; ascertainment of exposure and outcomes; adequacy of follow-up; possible conflicts of interest). If insufficient evidence was available to determine SOE, that finding was noted. The AHRQ/Mayo review process, including the flow chart, search strategy, study inclusion/exclusion criteria, and individual study characteristics are presented in detail in the published review.[36]

CQI Treatment Statement Rating/Grading Procedure. Based upon the findings from the AHRQ/Mayo review, the CQI Guideline Writing Group via a consensus process developed treatment statements for each comparison for which sufficient evidence was available. Each treatment statement was assigned a numerical rating for SOE and a letter grade for the balance of benefits and harms as described below. If insufficient evidence was available, no treatment statement was developed; instead, the comparison was noted as in need of additional research.

The treatment statement SOE ratings were determined by arraying the AHRQ/Mayo SOE ratings for each individual outcome across **six key outcomes** as available (ie, **child-rated anxiety symptoms; parent-rated anxiety symptoms; clinician-rated anxiety symptoms; response; remission; global function**).

- **If the preponderance of AHRQ/Mayo SOE ratings across the six key outcomes for a given comparison was high, the SOE rating for the corresponding treatment statement was high (denoted by the letter A).**
- **If the preponderance of AHRQ/Mayo SOE ratings across the six key outcomes was moderate, the SOE rating for the treatment statement was moderate (denoted by the letter B).**
- **If the preponderance of AHRQ/Mayo SOE ratings across the six key outcomes was low, the SOE rating for the treatment statement was low (denoted by the letter C).**

The treatment statement benefit/harm grades were determined by the CQI Guideline Writing Group via a consensus process in accordance with the Grading of Recommendations Assessment, Development, and Evaluation (GRADE)[91] convention by weighing the potential benefits and harms of each treatment statement action and the level of confidence in that determination based upon the underlying SOE.

- **A recommendation statement (denoted by the numeral 1) indicates confidence that the benefits of the action clearly outweigh the harms.**
- **A suggestion statement (denoted by the numeral 2) indicates greater uncertainty, in that the benefits of the action are considered likely to outweigh the harms, but the balance is more difficult to judge.**

The extent to which AHRQ/Mayo review−derived treatment statements were supported or refuted by more recent meta-analyses[37-43] was presented as additional evidence after each statement.

Treatment statements underwent iterative blind voting by the CQI Guideline Writing Group members until at least majority consensus was achieved. If a voting outcome had not been unanimous, a dissenting opinion could have been written to accompany the statement.

Applicability of Treatment Findings From the AHRQ/Mayo Review. The treatment findings from the AHRQ/Mayo review[36] were stated to be "likely widely applicable to a heterogeneous population of children and adolescents with separation anxiety, generalized anxiety, social anxiety, panic, and specific phobia disorders, with minimal psychiatric comorbidities, who are on average 8 to 18 years old and have ready access to mental health professionals who can provide CBT or have access to medical professionals who are willing to prescribe SSRIs or SNRIs."

Of the disorders named above, because specific phobia was not represented as the primary disorder in medication studies included in the AHRQ/Mayo review, this disorder was not included in the AACAP medication treatment statements. Although the AHRQ/Mayo findings were said to apply to children and adolescents who were "on average" 8 to 18 years old, both medication and therapy studies in the AHRQ/Mayo review included children as young as 6 years old. Accordingly, the treatment statements in this guideline extend downward to age 6. Although the majority of studies in the AHRQ/Mayo review were conducted with populations that were predominantly of White ethnicity, there is no compelling rationale for rendering the treatment statements inapplicable to minority populations.

Treatment Statements[c]

1. AACAP recommends (1C) that cognitive-behavioral therapy (CBT) be offered to patients 6 to 18 years old with social anxiety, generalized anxiety, separation anxiety, specific phobia, or panic disorder.

Benefits and Harms. Of the psychotherapy treatments eligible for the AHRQ/Mayo review, only CBT had sufficient outcome data for planned comparisons. A total of 60 RCTs and 3 nonrandomized comparative studies compared CBT to waitlist/no treatment, 29 RCTs and one nonrandomized comparative study compared CBT to attention control/treatment as usual, and 3 RCTs compared CBT to pill placebo (see AHRQ/Mayo review[36] for study details). Overall, 6,978 patients were included (47.9% male; mean age 11.2 years, range 6−18 years).

Compared to inactive controls (waitlist/no treatment), CBT improved primary anxiety symptoms (child, parent, and clinician report), global function, and response to treatment (all moderate SOE), and may have improved remission of disorder (low SOE). However, there was evidence of publication bias for studies using the waitlist/no treatment comparison, which lowered their SOE. CBT did not separate from waitlist/no treatment for satisfaction with care and secondary measures (both low SOE), and there was insufficient evidence for social function.

Compared to active controls (attention control/treatment as usual), CBT improved only primary anxiety (child report) (moderate SOE); CBT did not separate from attention control/treatment as usual for primary anxiety (parent and clinician report), satisfaction, secondary measures, or remission of disorder (all low SOE). There was insufficient evidence for global function, social function, and response to treatment.

CBT did not separate from pill placebo for primary anxiety (child report) or secondary measures (all low SOE). There was insufficient evidence for primary anxiety (clinician report), global function, or social function.

Except as noted, CBT did not separate from pill placebo, waitlist/no treatment, or attention control/treatment as usual with respect to any short-term AEs (all low SOE). Compared to pill placebo, CBT reduced dropouts (low SOE) and compared to waitlist/no treatment, CBT reduced dropouts due to AEs (low SOE).

[c]The treatment statements below are intended to apply to the named anxiety disorders for which all diagnostic criteria are met, including the requirements for duration, frequency/severity, and clinically significant distress and/or functional impairment. Although the AHRQ/Mayo review findings were insufficient to recommend or suggest the sequence in which treatments should be offered, prudent sequencing may prioritize CBT over SSRI for recent onset of milder, less distressing, and less functionally impairing anxiety presentations.

Additional Support. This recommendation was supported by the findings from four meta-analyses published since the AHRQ/Mayo review.[40-43] No meta-analyses or systematic reviews published since the AHRQ/Mayo review refuted this recommendation. One of the recent meta-analyses[43] suggested the possible superiority of group CBT over all other assessed psychotherapies and control conditions.

Differences of Opinion. There were no differences of opinion. The CQI Guideline Writing Group voted unanimously in favor of this recommendation.

Quality Measurement Considerations. CBT should be considered among treatments offered to patients 6 to 18 years old with social anxiety, generalized anxiety, separation anxiety, specific phobia, or panic disorders.

Implementation. CBT is a diverse group of interventions targeted at the three primary dimensions of anxiety: cognitive (eg, cognitive distortions about the likelihood of harm), behavioral (eg, avoidance of potentially harmful situations), and physiologic (eg, autonomic arousal and other somatic symptoms). Therapeutic interventions are individually tailored to illustrate connections among worries and fears, thoughts, and behaviors, and are strategically directed toward eliminating emotional and physical distress, changing maladaptive beliefs and attitudes, and alleviating avoidance behavior. CBT typically is organized according to an agenda that involves homework assignments for practice opportunities that reinforce skills and generalize them to the natural environment. Treatment is characterized by collaboration among the patient, family, and therapist, and, in some cases, school personnel. The goal of structured CBT is to achieve meaningful symptomatic and functional improvement within 12 to 20 sessions. Systematic assessment of treatment effectiveness using standardized symptom rating scales can supplement the clinical interview, as use of these scales has been shown to optimize therapists' ability to accurately assess treatment response and remission.[92]

Specialized education, training, and experience are necessary for the effective delivery of CBT. Specific CBT elements for anxiety disorders can include the following: education about anxiety; behavioral goal setting with contingent rewards; self-monitoring for connections between worries/fears, thoughts, and behaviors; relaxation techniques including deep breathing, progressive muscle relaxation, and guided imagery; cognitive restructuring that challenges distortions such as catastrophizing, overgeneralization, negative prediction, and all-or-nothing thinking; graduated exposure incorporating graded

exposure to a feared stimulus; and problem-solving and social skills training relevant to anxiogenic situations. The number and combination of these elements vary according to the specific anxiety disorder being treated and the patient's clinical presentation. Graduated exposure, in which the patient creates a fear hierarchy that is then mastered in a stepwise manner, is the cornerstone of treatment for anxiety generated by a specific situation, such as in separation anxiety, specific phobias, and social anxiety. Developmentally appropriate modifications of graduated exposure may include use of real-life desensitization (in vivo), emotive imagery (narrative stories), live modeling (demonstration of nonfearful response), and contingency management (positive reinforcement). Exposure is tailored to the individual and calibrated in intensity in a manner similar to dosage calibration in medication management.[93]

Although CBT emphasizes cognitive, behavioral, and physiologic processes that lead to and maintain anxiety symptoms, these processes are learned and function in a social context. As such, family-directed interventions that improve parent−child relationships, strengthen family problem-solving and communication skills, reduce parental anxiety, and foster anxiety-reducing parenting skills often supplement individual treatment. In addition, school-directed interventions that educate teachers about the student's anxiety and how to foster effective problem-solving, coping, and anxiety management strategies in the school setting can be part of the treatment plan. Specific plans for anxiety management at school can be written into the student's 504 plan or individualized education plan (eg, graduated school re-entry with contingent rewards for separation anxiety; graduated practice opportunities for social anxiety).

2. AACAP recommends (1B) that selective serotonergic reuptake inhibitors (SSRIs) be offered to patients 6 to 18 years old with social anxiety, generalized anxiety, separation anxiety, or panic disorder.

Benefits and Harms. In the AHRQ/Mayo review (see AHRQ/Mayo review[36] for study details), 13 RCTs compared SSRIs to pill placebo. Overall, 1,708 patients were included (54.1% male; mean age 11.6 years, range: 6−18 years).

Compared to pill placebo, SSRIs as a class improved primary anxiety symptoms (parent and clinician report), response to treatment, and remission of disorder (all moderate SOE), as well as global function (high SOE). SSRIs did not separate from pill placebo for primary anxiety symptoms (child report), secondary measures, or social function (all low SOE).

Except as noted, SSRIs as a class did not separate from pill placebo with respect to short-term AEs (all moderate to low SOE). Insufficient data precluded assessment of AEs related to suicidal ideation or behavior. Insufficient data also precluded assessment of AEs related to neurologic or oral (dry mouth) AEs.

Additional Support. This recommendation was supported by the findings from three meta-analyses published since the AHRQ/Mayo review.[37-39] No meta-analyses or systematic reviews published since the AHRQ/Mayo review refuted this recommendation.

Differences of Opinion. There were no differences of opinion. The CQI Guideline Writing Group voted unanimously in favor of this recommendation.

Quality Measurement Considerations. A medication from the SSRI class should be considered among treatments offered to patients 6 to 18 years old with social anxiety, generalized anxiety, separation anxiety, and panic disorders.

Implementation. Serotonergic function is believed to play a key role in the ability of the brain to modulate fear, worry, and stress as well as to facilitate cognitive processing of those emotions.[94] The SSRI medication class is a group of chemically and pharmacologically different compounds that inhibit the presynaptic reuptake of serotonin in the brain, thereby increasing availability of serotonin at the synaptic cleft. This blockade over time is believed to lead to a downregulation of inhibitory serotonin autoreceptors, which eventually heightens the serotonergic neuronal firing rate, which in turn leads to increased serotonin release. This multistep process is hypothesized to be related to the delay in onset of the SSRI treatment effect.

Medications from the SSRI class currently marketed in the United States are citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, sertraline, and vilazodone. In the AHRQ/Mayo review, the SSRIs for which sufficient data were available for comparisons were fluoxetine, fluvoxamine, paroxetine, and sertraline. Although mechanisms of action vary somewhat across SSRIs (eg, effects on other neurotransmitter receptors affecting degree of serotonin selectivity), the primary mechanism was deemed in the AHRQ/Mayo review to be sufficiently similar across individual medications to warrant extension of the findings to the medication class.

Although there is substantial empirical support for the effectiveness and safety of the SSRI class of medications for the treatment of anxiety, no specific SSRIs have U.S. Food and Drug Administration (FDA) approval for this indication. The choice of a specific SSRI is governed by considerations such as pharmacokinetics, pharmacodynamics,

tolerability, cost, insurance formularies, and unique risks leading to warnings or precautions.

At present, there is no clear role for pharmacogenomic testing in medication selection, although this may change as additional evidence accumulates.[95]

Limited data are available on drug pharmacokinetics and pharmacodynamics for SSRIs in young people. Most SSRIs (particularly fluoxetine because of its active metabolite) have sufficiently long elimination half-lives to permit single daily dosing. However, at low doses of sertraline[96] and at any dose of fluvoxamine, youths may require twice-daily dosing.

The best-fitting model for SSRI response may be a logarithmic model demonstrating statistically (but not clinically) significant improvement in anxiety symptoms within 2 weeks of treatment initiation, clinically significant improvement by week 6, and maximal improvement by week 12 or later.[38] This pharmacodynamic profile supports slow up-titration to avoid unintentionally exceeding the optimal medication dose.

As a group, the SSRIs are generally well tolerated by children and adolescents. Most adverse effects emerge within the first few weeks of treatment, and can include (but are not limited to) dry mouth, nausea, diarrhea, heartburn, headache, somnolence, insomnia, dizziness, vivid dreams, changes in appetite, weight loss or gain, fatigue, nervousness, tremor, bruxism, and diaphoresis. Potentially serious adverse effects include (but are not limited to) suicidal thinking and behavior, behavioral activation/agitation, hypomania, mania, sexual dysfunction, seizures, abnormal bleeding, and serotonin syndrome.

All of the SSRIs have a boxed warning for suicidal thinking and behavior through age 24 years. The pooled absolute rates for suicidal ideation across all antidepressant classes and all non-OCD anxiety indications have been reported to be 1% for youths treated with an antidepressant and 0.2% for youths treated with a placebo.[97] The pooled risk difference has been reported to be 0.7% (95% confidence interval −0.4% to 2%; $p = .21$), yielding a number needed to harm (NNH) of 143 (compared to a number needed to treat [to achieve response] of 3).[97] Despite the low apparent risk, close monitoring for suicidality is recommended by the FDA, especially in the first months of treatment and following dosage adjustments. Although the margin of safety of SSRIs in overdose is greater than for other antidepressants, deaths have been reported following very large ingestions.

Behavioral activation/agitation[98] (eg, motor or mental restlessness, insomnia, impulsiveness, talkativeness, disinhibited behavior, aggression), more common in younger children than adolescents and in anxiety disorders compared to depressive disorders, may occur early in SSRI treatment, with dose increases, or with concomitant administration of drugs that inhibit the metabolism of SSRIs. The potential for dose-related behavioral activation/agitation early in treatment supports slow up-titration and close monitoring (particularly in younger children), and underscores the importance of educating parents/guardians and patients in advance about this potential side effect.

As with other antidepressants, there have been rare reports of mania/hypomania that can be difficult to distinguish from behavioral activation. In general, behavioral activation may be more likely to occur early in treatment (first month) or with dose increases, whereas mania/hypomania may appear later. Moreover, behavioral activation usually improves quickly after SSRI dose decrease or discontinuation, whereas mania may persist and require more active pharmacological intervention. Sexual dysfunction (erectile dysfunction, delayed ejaculation, anorgasmia) can occur with SSRIs in adolescents. Because seizures have been observed in the context of SSRI use, SSRIs should be used cautiously in patients with a history of a seizure disorder. Abnormal bleeding, especially with concomitant administration of aspirin or nonsteroidal anti-inflammatory drugs, can occur with SSRIs; rare bleeding events include ecchymosis, hematoma, epistaxis, petechiae, and hemorrhage.

Serotonin syndrome, caused by elevated brain serotonin levels, can be triggered when serotonergic medications are combined.[99] Symptoms can arise within 24 to 48 hours after combining medications and are characterized by mental status changes (confusion, agitation, anxiety); neuromuscular hyperactivity (tremors, clonus, hyperreflexia, muscle rigidity); and autonomic hyperactivity (hypertension, tachycardia, arrhythmias, tachypnea, diaphoresis, shivering, vomiting, diarrhea). Advanced symptoms include fever, seizures, arrhythmias, and unconsciousness, which can lead to fatalities. Treatment is hospital based and includes discontinuation of all serotonergic agents and supportive care with continuous cardiac monitoring. Monoamine oxidase inhibitors (MAOIs), including phenelzine, isocarboxazid, moclobemide, isoniazid, and linezolid play a role in most cases of serotonin syndrome and should be avoided in combination with any other serotonergic drug, including another MAOI. Moreover, caution should be exercised when combining two or more non-MAOI serotonergic drugs, including antidepressants (eg, SSRIs, SNRIs, TCAs, atypical antidepressants); opioids and other pain medications (eg, tramadol, meperidine, methadone, fentanyl); stimulants (eg, amphetamine and possibly methylphenidate classes); cough/cold/allergy medications (eg, dextromethorphan, chlorpheniramine); other over-the-

counter products (eg, St. John's wort, L-tryptophan, diet pills); and illicit drugs (eg, ecstasy, methamphetamine, cocaine, LSD). Caution entails starting the second non-MAOI serotonergic drug at a low dose, increasing the dose slowly, and monitoring for symptoms, especially in the first 24 to 48 hours after dosage changes.

Each SSRI has special prescribing considerations. Paroxetine, fluvoxamine, and sertraline have been associated with discontinuation syndrome[100] (see below for syndrome description). As noted below, fluvoxamine may have greater potential for drug−drug interactions. Citalopram may cause QT prolongation associated with Torsade de Pointes, ventricular tachycardia, and sudden death at daily doses exceeding 40 mg/d and should be avoided in patients with long QT syndrome. Paroxetine has been associated with increased risk of suicidal thinking or behavior compared to other SSRIs.

SSRIs vary in their potential for drug−drug interactions.[101] Concomitant administration of any of the SSRIs with any of the monoamine oxidase inhibitors (MAOIs) is contraindicated because of increased risk of serotonin syndrome. SSRIs (especially citalopram) also may interact with drugs that prolong the QT interval; fluoxetine, paroxetine, and sertraline may interact with drugs metabolized by CYP2D6, and fluvoxamine may interact with drugs metabolized by CYP1A2, CYP2C19, CYP2C9, CYP3A4, and CYP2D6. Citalopram/escitalopram may have the least effect on CYP450 isoenzymes compared with other SSRIs and as such may have a lower propensity for drug interactions.

Medical education, training, and experience are necessary to safely and effectively prescribe antidepressant medications. A conservative medication trial for mild to moderate anxiety presentations may entail increasing the dose as tolerated (if adherence is confirmed) within the therapeutic dosage range in the smallest available increments at approximately 1- to 2-week intervals when prescribing shorter half-life SSRIs (eg, sertraline, citalopram, escitalopram) to approximately 3- to 4-week intervals when prescribing longer half-life SSRIs (eg, fluoxetine) until the benefit-to-harm ratio is optimized and remission is achieved. Faster up-titration may be indicated as tolerated for more severe anxiety presentations; however, it is not clear that dose of medication is related to magnitude of response, and higher doses or blood concentrations can be associated with more adverse effects.[38] Because an initial adverse effect of SSRIs can be anxiety or agitation, it may be advisable to start with a subtherapeutic dose as a "test" dose. Systematic assessment of treatment response using standardized symptom rating scales can be considered as a supplement to the clinical interview, along with reported and observed adverse events. If a concerning adverse effect is reported or observed that could reasonably be linked to the medication, in general the dose of medication would be reduced, and if the concerning adverse effect persists, the medication would be discontinued. For all SSRIs, medical monitoring can include height and weight; no specific laboratory tests are recommended. The optimal duration of pharmacologic treatment of anxiety disorders for continued symptom remission is unclear, but a generally accepted approach would be to continue an effective, tolerated dose for approximately 12 months after remission, monitoring for several months after discontinuation for re-emergence of symptoms. Discontinuation generally should occur during a relatively stress-free period. Some youths with severe and chronic anxiety presentations may require lengthier medication treatment.

Determinants of nonadherence to medication regimens are multidetermined, including social/economic, health system, illness, patient, and treatment factors.[102] Although evidence is mixed, some effective strategies include behavioral (motivational), educational (information pamphlets), integrated care (care coordination), self-management (illness management skills), risk communication (harm avoidance), and packaging/daily reminder (physical or technological) approaches.[102] In children and adolescents, parental oversight of medication regimens is of paramount importance.

A discontinuation syndrome characterized variously by dizziness, fatigue, lethargy, general malaise, myalgias, chills, headaches, nausea, vomiting, diarrhea, insomnia, imbalance, vertigo, sensory disturbances, paresthesias, anxiety, irritability, and agitation has been reported following missed doses or acute discontinuation of shorter-acting SSRIs, notably paroxetine but also (to a lesser extent) fluvoxamine and sertraline.[103] Accordingly, these medications warrant close adherence to the prescribed regimen and a slow discontinuation taper. In contrast, fluoxetine, likely because of the long half-life of its active metabolite, is unlikely to be associated with discontinuation syndrome and has not been associated with withdrawal symptoms when doses are missed.

There is no definitive empirical guidance for switching from one SSRI to another.[104] Although the most conservative approach would entail tapering and discontinuing the first SSRI before adding the second (with a washout interval if the first SSRI is fluoxetine), this approach entails the risk of exacerbation of the original symptoms, or discontinuation symptoms if the first SSRI (other than fluoxetine) is stopped abruptly. Cross-tapering may avoid these outcomes, but should be closely monitored.

3. AACAP suggests (2C) that combination treatment (CBT and an SSRI) could be offered preferentially over CBT alone or an SSRI alone to patients 6 to 18 years old with social anxiety, generalized anxiety, separation anxiety, or panic disorder.

Benefits and Harms. In the AHRQ/Mayo review, two RCTs compared combination treatment (CBT and an SSRI) to either treatment alone (see AHRQ/Mayo review[36] for study details). These 2 studies included 550 patients (52.6% male; mean age 12.2 years, range 7−17 years).

Compared to CBT alone and to sertraline alone, combination CBT plus sertraline improved primary anxiety (clinician report), global function, response to treatment, and remission of disorder (all moderate SOE).

Combination CBT plus fluoxetine did not separate from CBT alone for global function, secondary measures, or response to treatment (all low SOE) and may have reduced remission of disorder compared to CBT alone (low SOE).

Except as noted, combination CBT plus sertraline did not differ from CBT alone with respect to short-term AEs including suicidal ideation or behavior (all low SOE). Compared to CBT alone, combination CBT plus sertraline increased AEs related to behavior activation (moderate SOE) and increased any AEs and AEs related to sleep (both low SOE).

Except as noted, combination CBT plus sertraline did not differ from sertraline alone with respect to short-term AEs (all low SOE). Compared to sertraline alone, combination CBT plus sertraline increased AEs related to behavior activation and reduced AEs due to fatigue/somnolence (both moderate SOE). Insufficient evidence precluded assessment of AEs related to suicidal ideation or behavior.

Compared to CBT alone, combination CBT plus fluoxetine did not differ with respect to dropouts (low SOE).

Additional Support. This suggestion was not supported or refuted by the findings from any meta-analyses or systematic reviews published since the AHRQ/Mayo review.

Differences of Opinion. There were no differences of opinion. The CQI Guideline Writing Group voted unanimously in favor of this suggestion.

Quality Measurement Considerations. Combination treatment (CBT plus an SSRI) can be considered among treatments offered to patients 6 to 18 years old with social anxiety, generalized anxiety, separation anxiety, and panic disorders.

Implementation. Because there were only two studies with conflicting results, the AHRQ/Mayo review did not find definitive evidence for the superiority of combination treatment over monotreatment (therapy or medication alone). Largely derived from the findings from one of the studies (the Child-Adolescent Anxiety Multimodal Study [CAMS]),[105] expert consensus generally supports the prioritization of combination treatment over monotreatment. In CAMS,[106] youths who received combination treatment had significantly higher rates of remission compared to monotreatment with SSRI or CBT or with placebo treatment at week 12 and week 24. In clinical practice, combination treatment may be favored if there is a need for acute symptom reduction in a severe, functionally impairing disorder or a partial response to monotreatment.

Combination treatment typically involves concurrent administration of psychotherapy (CBT in the AHRQ/Mayo-included studies) and medication (an SSRI in the AHRQ/Mayo-included studies). Optimally, combination treatment would be delivered in the same facility to enhance convenience for the patient and family as well as communication between treatment providers.

Naturalistic follow-up of the CAMS study (Child/Adolescent Anxiety Multimodal Extended Long-term Study [CAMELS])[107] failed to demonstrate long-term maintenance of the initial superiority of combination over monotreatment. However, a strong predictor of long-term outcome was initial response to treatment, which, in the CAMS study, was significantly superior in the combination treatment compared to the monotreatment arms.[106] This finding may suggest the importance of delivering what may be the most potent treatment (combination) early in the treatment course.

4. AACAP suggests (2C) that serotonin norepinephrine reuptake inhibitors (SNRIs) could be offered to patients 6 to 18 years old with social anxiety, generalized anxiety, separation anxiety, or panic disorder.

Benefits and Harms. In the AHRQ/Mayo review, 4 RCTs compared SNRIs to pill placebo (see AHRQ/Mayo review[36] for study details). These studies included 911 patients (63.4% male; mean age 12.4 years, range 6−17 years).

Compared to pill placebo, SNRIs as a class improved primary anxiety symptoms (clinician report) (high SOE). SNRIs did not separate from pill placebo for primary anxiety (parent report) or global function (both low SOE). Insufficient data precluded assessment of primary anxiety (child report).

Except as noted, SNRIs as a class did not separate from pill placebo with respect to short-term AEs including suicidal ideation or behavior (all moderate to low SOE). Compared to pill placebo, SNRIs were associated with

increased fatigue/somnolence (moderate SOE). Insufficient data precluded assessment of AEs related to infections.

Additional Support. This suggestion was supported by the findings from three meta-analyses published since the AHRQ/Mayo review.[37-39] There were no meta-analyses or systematic reviews published since the AHRQ/Mayo review that refuted this suggestion.

Differences of Opinion. There were no differences of opinion. The CQI Guideline Writing Group voted unanimously in favor of this suggestion.

Quality Measurement Considerations. A medication from the SNRI class can be considered among treatments offered to patients 6 to 18 years old with social anxiety, generalized anxiety, separation anxiety, and panic disorders.

Implementation. The SNRI medication class is a group of chemically and pharmacologically different compounds that inhibit the presynaptic reuptake of both norepinephrine and serotonin in the brain.[94] Stress responses including alertness, arousal, attentiveness, and vigilance are believed to be modulated by noradrenergic neurons. Although associated with the stress response ("fight or flight") and the generation of fear and anxiety, paradoxically noradrenergic medications have been shown empirically to be effective in the treatment of anxiety disorders, likely because of complex interactions with other neurotransmitters including serotonin.

Medications from the SNRI class currently marketed in the United States are venlafaxine, desvenlafaxine, duloxetine, and levomilnacipran. In the AHRQ/Mayo review, the SNRIs for which sufficient data were available for comparisons were venlafaxine and duloxetine. Atomoxetine (a selective norepinephrine reuptake inhibitor) also was included in the AHRQ/Mayo review under the SNRI class; however, at present, the effectiveness of atomoxetine for the treatment of anxiety as the primary disorder has not been established, and as such atomoxetine is not further addressed in this guideline.

Although mechanisms of action vary somewhat across SNRIs (eg, effects on other neurotransmitter receptors affecting degree of serotonin and norepinephrine selectivity), the primary mechanism was deemed in the AHRQ/Mayo review to be sufficiently similar across individual medications to warrant extension of the findings to the medication class.

Duloxetine is the only SNRI to have an FDA indication for the treatment of any anxiety disorder (specifically, generalized anxiety disorder in children and adolescents 7−17 years old). However, the choice of medication for anxiety within the SNRI class may also be governed by other considerations such as pharmacokinetics, pharmacodynamics, tolerability, cost, insurance formularies, and unique risks leading to warnings or precautions. At present, there is no clear role for pharmacogenomic testing in medication choice, although this may change as evidence accumulates.

Limited data are available on drug pharmacokinetics and pharmacodynamics of SNRIs for young people. Venlafaxine extended release, desvenlafaxine, and duloxetine have sufficiently long elimination half-lives to permit single daily dosing. Because of its short elimination half-life, venlafaxine immediate release may require twice- or thrice-daily dosing.

Adverse effects of SNRIs can include (but are not limited to) diaphoresis, dry mouth, abdominal discomfort, nausea, vomiting, diarrhea, dizziness, headache, tremor, insomnia, somnolence, decreased appetite, and weight loss. The SNRIs also have been associated with sustained clinical hypertension, increased blood pressure, and increased pulse.

As described above for SSRIs, uncommon but potentially serious adverse effects across the SNRI class include suicidal thinking and behavior (through age 24 years), behavioral activation/agitation, hypomania, mania, sexual dysfunction, seizures, abnormal bleeding, and serotonin syndrome. In addition, individual SNRI medications have also been associated with distinctive, potentially serious (albeit rare) adverse effects.

Venlafaxine may be associated with greater suicide risk than the other SNRIs,[108,109] and both venlafaxine and desvenlafaxine have been associated with overdose fatalities. Venlafaxine also has been associated with discontinuation symptoms.

Duloxetine has been associated with hepatic failure presenting as abdominal pain, hepatomegaly, and elevation of transaminase levels. Cholestatic jaundice also has been reported. Duloxetine should be discontinued and not restarted in patients who develop jaundice or other evidence of clinically significant liver dysfunction. Severe skin reactions, including erythema multiforme and Stevens−Johnson syndrome, can occur with duloxetine; accordingly, duloxetine should be discontinued and not restarted at the first appearance of blisters, peeling rash, mucosal erosions, or other signs of hypersensitivity.

SNRIs vary in their potential for drug−drug interactions. Concomitant administration of any of the SNRIs and any of the MAOIs is contraindicated because of increased risk of serotonin syndrome. Duloxetine may interact with drugs metabolized by CYP1A2 and CYP2D6. Compared to SSRIs, venlafaxine may have the least effect on the CYP450 system.[110]

Medical education, training, and experience are necessary to safely and effectively prescribe antidepressant

medications. The recommendations for an adequate SNRI trial are the same as those delineated above for SSRIs. For all SNRIs, medical monitoring should include height, weight, pulse, and blood pressure; no specific laboratory tests are recommended.

As with SSRIs, a discontinuation syndrome has been reported[103] following missed doses or acute discontinuation of SNRIs. Accordingly, SNRIs also warrant a slow discontinuation taper.

Areas for Additional Treatment Research

For many important domains of treatment for anxiety (listed below), the AHRQ/Mayo review yielded insufficient information to draw conclusions about the benefits or harms of the treatment. As such, treatment statements for these domains are not offered. Research is urgently needed to support additional treatment statements in these domains for future guidelines.

- Circumstances suggesting preferential use of SSRIs or CBT[d]
- Preferential sequencing of SSRIs and CBT[e]
- Treatment effect modifiers (eg, child/family characteristics, treatment setting, disorder severity, comorbidities)[f]
- Use of non-CBT psychotherapies[g]
- Use of benzodiazepines[h]
- Long-term safety risks of pharmacologic treatment[i]
- Effectiveness of psychosocial and pharmacologic treatments in underserved populations and minorities[j]

LIMITATIONS

The limitations of the Treatment section of this guideline reflect the derivation of the treatment statements from the findings of a single, time-limited, critical systematic review of the literature by the AHRQ-contracted Mayo Clinic Evidence-based Practice Center in which reviewers' judgment played a role in rating the strength of the empirical evidence. Despite the rigor and transparency of the systematic review process as delineated in the AHRQ/Mayo review,[36] differences in professional judgment are possible. However, any differences are deemed unlikely to affect the overall conclusions of the guideline. Other limitations of the AHRQ/Mayo review are as follows:

- Relatively small body of evidence, especially for medication studies
- Brief follow-up of most studies
- Use of different symptom rating scales across studies to assess improvement
- Lacking, sparse, or unstratified descriptions of potentially mediating and moderating variables (eg, intervention components, participant demographics, comorbidities, symptom severity)
- Poor representation across studies of both very young children and young adults
- Poor representation across studies of multiracial youths
- Paucity or lack of medication studies addressing selective mutism, specific phobias, panic, or agoraphobia as the primary disorder
- Variable methods for reporting treatment-emergent adverse events and serious adverse events
- Insufficient data to assess risk of suicidal behavior

The limitations of the Assessment and Implementation sections of this guideline reflect the derivation of the narrative from a single time-limited review by the CQI Guideline Writing Group of published expert opinion and consensus. When expert opinions differed, judgment was exercised by the CQI Guideline Writing Group to select among equally supported opinions. Although differences in professional judgment are possible, any differences are deemed unlikely to affect the overall conclusions of the guideline.

CONCLUSIONS

Congruent with previous national and international guidelines,[62-65] in this guideline both cognitive-behavioral therapy (CBT) and selective serotonin reuptake inhibitor (SSRI) medication have considerable empirical support as safe and effective short-term treatments for anxiety in children and adolescents. Serotonin norepinephrine reuptake inhibitor (SNRI) medication has some empirical support as an additional treatment option. CBT may be considered to be the first-line treatment for anxiety in children and adolescents, particularly for mild to moderate presentations, with SSRI (and possibly SNRI) medication an alternative treatment consideration, particularly for more severe presentations or when quality CBT is unavailable. Combination treatment (CBT and SSRI) may be a more effective short-term treatment for anxiety in children and adolescents than either treatment alone. Because effective treatment outcomes are predicated in part upon accuracy of the diagnosis, depth of the clinical formulation, and breadth of the treatment plan, comprehensive, evidence-based assessment may enhance evidence-based treatment.

[d]AHRQ/Mayo review: equivocal head-to-head comparisons of SSRI vs CBT
[e]AHRQ/Mayo review: no data
[f]AHRQ/Mayo review: equivocal subgroup analyses
[g]AHRQ/Mayo review: excluded from analyses due to heterogeneity of therapies
[h]AHRQ/Mayo review: one poor quality trial of BZP versus placebo
[i]AHRQ/Mayo review: no data
[j]AHRQ/Mayo review: no data

In the context of a protracted severe shortage of child and adolescent–trained behavioral health specialists, research demonstrating convenient, efficient, cost-effective, and user-friendly delivery mechanisms for safe and effective treatments for child and adolescent anxiety disorders is an urgent priority. Pharmacotherapeutic task-sharing with pediatric practitioners, particularly for moderate anxiety presentations, can greatly expand access to safe and effective care while conserving child and adolescent psychiatrists for the management of more severe and complex presentations. The comparative effectiveness of anxiety treatments, delineation of mediators and moderators of effective anxiety treatments, long-term effects of SSRI and SNRI use in children and adolescents, and additional evaluation of the degree of suicide risk associated with SSRIs and SNRIs, remain other key research needs.

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The authors acknowledge the following topic experts for their contributions to this guideline: Boris Birmaher, MD, John Piacentini, PhD, Moira Rynn, MD, Jeffrey Strawn, MD, John Walkup, MD, V. Robin Weersing, PhD.

The guideline underwent peer review from February 1, 2019, to March 11, 2020; peer reviewers were as follows: Christopher Bellonci, MD, John Diamond, MD, Laurence Greenhill, MD, Roma Vasa, MD (AACAP Committee on Quality Issues); Debra Koss, MD, Karen Pierce, MD, Laura Willing, MD (AACAP Advocacy Committee); Cathryn A. Galanter, MD, Alice Mao, MD (AACAP Consumer Issues Committee); Andrew Harper, MD, Lindsay Moskowitz, MD (AACAP Continuing Medical Education Committee); Adelaide Robb, MD, Tim Wilens, MD, Mina Dulcan, MD (AACAP Psychopharmacology Committee); Daniel Dickstein, MD, Manpreet Singh, MD (AACAP Research Committee); Debra Koss, MD, Marian Swope, MD (Executive Committee, AACAP Assembly of Regional Organizations); Victor Fornari, MD, Richard Martini, MD (Presidents, American Association of Directors of Child and Adolescent Psychiatry); AACAP Members; AACAP Council.

This Clinical Practice Guideline was approved by AACAP Council on March 11, 2020.

This Clinical Practice Guideline is available at www.aacap.org.

During the preparation of this guideline, none of the authors had any financial conflicts of interest to disclose.

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0890-8567/$36.00/©2020 Published by Elsevier Inc. on behalf of the American Academy of Child and Adolescent Psychiatry.

https://doi.org/10.1016/j.jaac.2020.05.005

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Practice Parameter for the Assessment and Treatment of Children and Adolescents With Posttraumatic Stress Disorder

This Practice Parameter reviews the evidence from research and clinical experience and highlights significant advances in the assessment and treatment of posttraumatic stress disorder since the previous Parameter was published in 1998. It highlights the importance of early identification of posttraumatic stress disorder, the importance of gathering information from parents and children, and the assessment and treatment of comorbid disorders. It presents evidence to support trauma-focused psychotherapy, medications, and a combination of interventions in a multimodal approach. J. Am. Acad. Child Adolesc. Psychiatry, 2010;49(4):414–430. **Key Words:** child, adolescent, posttraumatic stress disorder, treatment, Practice Parameter

More than one of four children experiences a significant traumatic event before reaching adulthood.[1] These traumas may include events such as child abuse; domestic, community, or school violence; disasters, vehicular or other accidents, medical traumas, war, terrorism, refugee trauma, the traumatic death of significant others; or other shocking, unexpected or terrifying experiences. Although most children are resilient after trauma exposure, some develop significant and potentially long-lasting mental health problems. This Practice Parameter was written to help child and adolescent psychiatrists and other medical and mental health professionals assess and treat one such condition, posttraumatic stress disorder (PTSD). An earlier Practice Parameter on this same subject was first published in the *Journal of the American Academy of Child and Adolescent Psychiatry* in October 1998.[2] Because the diagnosis of PTSD requires the passage of at least 1 month after exposure to an index trauma, this Practice Parameter does not address the immediate psychological needs of children after disasters or other acute traumatic events, i.e., within the first month.

These guidelines are applicable to the evaluation and treatment of child and adolescent patients 17 years and younger. This document presumes familiarity with normal child development and the principles of child psychiatric diagnosis and treatment. In this Parameter the word *child* refers to adolescents and younger children unless explicitly noted. Unless otherwise noted, *parents* refers to the child's primary caretakers, regardless of whether they are the biological or adoptive parents or legal guardians.

METHODOLOGY

A literature search was conducted on MEDLINE accessed at www.pubmed.gov using the following Medical Subject Heading terms: *stress disorders, posttraumatic* AND *randomized controlled trials;* limits all child: 0–18 years, only items with abstracts, English, randomized controlled trials. This resulted in 70 abstracts. A search of PsycINFO was conducted using the following thesaurus terms: *posttraumatic stress disorder;* limit 1 to *treatment outcome/randomized clinical trial;* limit 2 to *(childhood or adolescence),* resulting in 24 abstracts. A search of the PILOTS database was conducted using the terms *clinical trials* AND *child* AND *adolescent,* resulting in 20 abstracts. The search covered the period from 1996 to 2006 and was conducted on May 7, 2007. Only abstracts that included randomized controlled trials, instruments measuring childhood PTSD symptoms, and significant results with regard to PTSD symptoms were included. This search was augmented by programs listed on the National Child Traumatic Stress Network Web site (www.NCTSN.org), those nominated by expert reviewers, and manuscripts that have recently been accepted for publication in peer-reviewed journals.

CLINICAL PRESENTATION

Posttraumatic stress disorder is the one of the few psychiatric diagnoses in *DSM-IV-TR* that requires the presence of a known etiologic factor, i.e., a traumatic event that precedes the development of the disorder. For PTSD to be present, the child must report (or there must be other compelling evidence of) a qualifying index traumatic event and specific symptoms in relation to that traumatic experience. Compelling evidence might include sexually transmitted infection in a young child, a reliable eyewitness report (e.g., a police report that a child was rescued from the scene of an accident), or a forensic evaluation confirming the likelihood that the child experienced a traumatic event. An inherent contradiction exists in that avoidance of describing traumatic experiences is a core feature of PTSD, as indicated below; yet diagnosing PTSD requires that the child describe the traumatic event.

In the absence of child report or other compelling evidence of a qualifying index trauma, a PTSD diagnosis should not be made. There may be situations where children or adolescents present with symptoms suggestive of PTSD (e.g., general anxiety symptoms, nightmares and impairment; or in an older youth, self-injurious behavior such as repeated cutting, substance abuse, and indiscriminant sexualized behavior) in the absence of a disclosure of trauma exposure. In this situation the clinician should not presume that trauma has occurred. Clinicians are wise to ask in nearly all routine evaluations whether traumatic events (e.g., maltreatment, acute injuries, disasters, and witnessed violence to loved ones) have occurred. However, if children and caregivers cannot confirm that a traumatic event has occurred, then clinicians ought not to imply that symptomatology is a consequence of forgotten trauma. Conversely, some children may be afraid, ashamed, embarrassed, or avoidant of disclosing traumatic experiences, particularly in an initial clinical interview. Avoidance may take the form of denial of trauma exposure and as such may be an indication of the severity of the child's avoidance symptoms rather than lack of trauma exposure. Parental denial of the child's exposure to trauma may occur because the parent is unaware of the child's trauma exposure, because the parent is a perpetrator or for a variety of other reasons. An error in either direction, i.e., mistakenly attributing symptoms to trauma that did not occur or disregarding the possibility of a real trauma history, has potential risks. Children should be referred for a forensic evaluation if the clinician has suspicion of trauma exposure but no confirmed reports. There are many differences between forensic and clinical evaluations; clinicians should not attempt to conduct forensic assessments in the context of a clinical evaluation.

Most individuals who experience truly life-threatening events manifest posttraumatic symptomatology immediately.[3,4] However, only about 30% on average tend to manifest enduring symptomatology beyond the first month.[5] Therefore, PTSD is not diagnosed until at least 1 month has passed since the index traumatic event occurred. After large-scale disasters, vehicular accidents, or medical trauma, children may be seen very soon after traumatic exposure by medical personnel, mental health professionals, or paraprofessionals. Acute stress disorder, adjustment disorder, or another disorder may be diagnosed within the first month of exposure. Transient moderate psychological distress may be a normative reaction to traumatic exposure. Recent data have suggested that panic symptoms in the immediate aftermath of trauma exposure are predictive of subsequent PTSD in children and this may be an important symptom to evaluate in this acute period.[6,7] Little is known about the efficacy of early interventions that are typically provided in the immediate aftermath of disasters, and whether they may cause harm to children as they have been found to do in some adult studies.[8] One randomized controlled study demonstrated that providing an early mental health intervention, psychological debriefing, was neither better nor worse than a control group in improving PTSD symptoms for children in road-traffic accidents.[9]

Acute PTSD is diagnosed if the symptoms are present after the first month and for less than 3 months after the index trauma; chronic PTSD is diagnosed if the symptoms persist beyond 3 months. Debate is ongoing a to whether or not an alternative condition alternatively referred to as "complex PTSD" (also known as disorders of extreme stress not otherwise specified or developmental trauma disorder) exists in severely, early, or interpersonally traumatized children or adolescents.[10] An alternative view with substantial support is that complex PTSD is chronic PTSD occurring with or without other comorbid *DSM-IV-TR* conditions.[11] In either perspective, there is clinical consensus that children with severe

PTSD may present with extreme dysregulation of physical, affective, behavioral, cognition, and/or interpersonal functioning that is not adequately captured in current descriptions of PTSD diagnostic criteria. Some of these children may be misdiagnosed with bipolar disorder because of severe affective dysregulation related to PTSD; others may have true bipolar disorder but also need attention to their trauma symptoms. It is also important for clinicians to be aware that children can have a trauma history yet have psychiatric symptoms that are unrelated to the trauma; discerning the role that the trauma plays in the child's current symptoms requires knowledge of the complexity with which PTSD and other trauma symptoms may present and general child psychopathology. Child and adolescent psychiatrists can fulfill a critical need in this regard.

PTSD Symptom Clusters

In addition to the presence of a known trauma, diagnosing PTSD requires the presence of symptoms in three distinct clusters.

Reexperiencing of the trauma must be present as evidenced by at least one of the following symptoms: recurrent and intrusive recollections, nightmares, or other senses of reliving the traumatic experience. In young children this can take the form of repetitive play in which aspects or themes of the trauma are expressed, or trauma-specific reenactment may occur. Frightening dreams without trauma-specific content may also occur. Trauma reminders (people, places, situations, or other stimuli that remind the child of the original traumatic event) may lead to intense psychological or physiologic distress.

Persistent avoidance of trauma reminders and emotional numbing must be present as evidenced by at least three of the following symptoms: efforts to avoid trauma reminders including talking about the traumatic event or other trauma reminders; inability to recall an important aspect of the trauma; decreased interest or participation in previously enjoyed activities; detachment or estrangement from others; restricted affect; and a sense of a foreshortened future.

Persistent symptoms of hyperarousal must also be present as evidenced by at least two of the following symptoms: difficulty falling or staying asleep; irritability or angry outbursts; difficulty concentrating; hypervigilance; and increased startle reaction.

Young children also manifest new aggression, oppositional behavior, regression in developmental skills (toileting and speech), new separation anxiety, and new fears not obviously related to the traumatic event (usually fear of the dark or fear of going to the bathroom alone) as associated symptoms.[12]

There is ongoing debate about the validity of the *DSM-IV-TR* diagnostic criteria for children, particularly the requirement of three avoidance/numbing symptoms in preadolescent children, because these symptoms require children to report on complex internal states that are too difficult for young children to comprehend and for parents to observe. Empirical studies have also raised serious questions about the appropriateness of this threshold for prepubertal children.[13-15]

Childhood PTSD confers increased risk for a number of problems in later childhood, adolescence, and adulthood. PTSD related to child abuse or domestic violence is associated with smaller cerebral volume and smaller corpora colossa,[16] with the severity of these changes being proportional to the duration of the children's trauma exposure. Some studies have shown that childhood PTSD is associated with lower academic achievement compared with children who have been exposed to trauma but have not developed PTSD,[17] whereas a more recent study has found that only reexperiencing symptoms are associated with cognitive impairment in adults with child maltreatment-related PTSD.[18] Certain types of traumatic events seem to be particularly associated with poor outcomes, whether or not children develop full-blown PTSD. For example, childhood sexual abuse alone is a strong predictor of a number of adverse outcomes in adolescence and adulthood, including substance abuse, conduct disorder, and depression.[19] The relation of child sexual abuse to suicidality is particularly serious, with up to 20% of all adolescent suicide attempts being attributable to this trauma and childhood sexual-abuse victims being eight times more likely than their nonsexually abused counterparts to attempt suicide repeatedly during adolescence.[19-21] Adolescents with sexual-abuse–related PTSD also have high-risk sexual behaviors.[22] Adults with PTSD related to childhood trauma have been found to have significantly higher rates of depression, suicide attempts, substance abuse, psychiatric hospitalizations, and relationship difficulties

compared with anxiety-disordered adults who have a trauma history without PTSD or no trauma history.[23]

EPIDEMIOLOGY

One sample of adolescents and young adults indicated that the overall lifetime prevalence of PTSD in the general youth population was 9.2%.[24] A recent national sample of adolescents (12–17 years old) indicated that 3.7% of male and 6.3% of female adolescents met full diagnostic criteria for PTSD.[25] A survey of 1,035 German adolescents found a lifetime prevalence rate of 1.6%.[26] Many more trauma-exposed children develop clinically significant PTSD symptoms without meeting full diagnostic criteria; research has indicated that these children have comparable functional impairments to those with a diagnosis of PTSD.[27] The few studies that have examined the natural course of PTSD in children have sometimes concurred with the general trend of adult studies that PTSD rates per sample decrease, albeit gradually, with time.[13,28-31] Despite these group averages that show overall "natural recovery" (i.e., remission without treatment), within these samples are always those who experience chronic PTSD over the course of many years. In other words, cohorts of children exposed to sexual abuse, natural disasters, war, accidents, and school violence have been documented to have decreases in rates of PTSD over the course of time, but significant proportions of these cohorts continued to meet criteria for chronic PTSD. More ominous are two prospective studies that have shown no group average decrease in PTSD symptomatology. McFarlane[32] showed that Australian school-age children (mean age, 8.2 years) did not decrease their PTSD symptomatology over 18 months after a bushfire.[32] Scheeringa et al.[33] showed that preschool-age children did not decrease PTSD symptomatology over 2 years. An important question is whether younger children are more vulnerable to permanent effects of trauma. Another important question is whether earlier treatment would result in better outcomes than delayed or no treatment, even if rates of PTSD diagnosis decline over time for all age groups during childhood and adolescence. A new study has indicated that this is the case for adults.[34]

RISK AND PROTECTIVE FACTORS

Female gender, previous trauma exposure, multiple traumas, greater exposure to the index trauma, presence of a preexisting psychiatric disorder (particularly an anxiety disorder), parental psychopathology, and lack of social support are risk factors for a child developing PTSD after trauma exposure.[35] Conversely, parental support, lower levels of parental PTSD, and resolution of other parental trauma-related symptoms have been found to predict lower levels of PTSD symptoms in children.[36,37] In the context of a disaster, increased television viewing of disaster-related events, delayed evacuation, extreme panic symptoms, or having felt that one's own or one's family member's life was in danger have each been found to be independently and significantly associated with developing PTSD symptoms in children.[38-40] Recent research has suggested that children's psychological reactions to trauma exposure are to some degree influenced by genetic factors.[41]

EVIDENCE BASE FOR PRACTICE PARAMETERS

In this Parameter, recommendations for best treatment practices are stated in accordance with the strength of the underlying empirical and/or clinical support, as follows:

- Minimal standard (MS) is applied to recommendations that are based on rigorous empirical evidence (e.g., randomized, controlled trials) and/or overwhelming clinical consensus. Minimal standards apply more than 95% of the time (i.e., in almost all cases).
- Clinical guideline (CG) is applied to recommendations that are based on strong empirical evidence (e.g., nonrandomized controlled trials) and/or strong clinical consensus. Clinical guidelines apply approximately 75% of the time (i.e., in most cases).
- Option (OP) is applied to recommendations that are acceptable based on emerging empirical evidence (e.g., uncontrolled trials or case series/reports) or clinical opinion, but lack strong empirical evidence and/or strong clinical consensus.
- Not endorsed (NE) is applied to practices that are known to be ineffective or contraindicated.

The strength of the empirical evidence is rated in descending order as follows:

- Randomized, controlled trial (rct) is applied to studies in which subjects are randomly assigned to two or more treatment conditions.
- Controlled trial (ct) is applied to studies in which subjects are nonrandomly assigned to two or more treatment conditions.
- Uncontrolled trial (ut) is applied to studies in which subjects are assigned to one treatment condition.
- Case series/report (cs) is applied to a case series or a case report.

SCREENING

Recommendation 1. The Psychiatric Assessment of Children and Adolescents Should Routinely Include Questions About Traumatic Experiences and PTSD Symptoms (MS).

Given the high rate of trauma exposure in children and the potentially long-lasting course of PTSD, it is important to detect this condition early. Routine screening for PTSD during an initial mental health assessment is therefore recommended. Even if trauma is not the reason for referral, clinicians should routinely ask children about exposure to commonly experienced traumatic events (e.g., child abuse, domestic or community violence, or serious accidents), and if such exposure is endorsed, the child should be screened for the presence of PTSD symptoms. Screening questions should use developmentally appropriate language and be based on *DSM-IV-TR* criteria. Obtaining information about PTSD symptoms from multiple informants including children and parents or other caretakers is essential for prepubertal children because the addition of caretaker information significantly improves diagnostic accuracy.[14]

To screen for PTSD symptoms, clinicians must first determine whether children have been exposed to qualifying traumatic experiences. One of the most comprehensive tools in this regard is the Juvenile Victimization Questionnaire, which has been validated for ethnically diverse samples of children 2 to 17 years of age.[42] Optimal screening strategies will depend on children's ages. For children 7 years and older, children can self-report trauma exposure and symptoms. Self-report measurements for PTSD such as the University of California at Los Angeles (UCLA) Posttraumatic Stress Disorder Reaction Index[43] or the Child PTSD Symptom Scale[44] can assist with screening and monitoring response to treatment. An abbreviated version of the UCLA PTSD Reaction Index is shown in Table 1.

When screening children younger than 7 years, instruments must be administered to caregivers because young children do not yet possess the developmental capacities for accurate self-report of psychiatric symptomatology. The PTSD for Preschool-Age Children is an 18-item checklist that covers most PTSD items plus several items appropriate for young children.[45] A subset of 15-items in the Child Behavior Checklist has shown promising sensitivity and specificity compared to a gold-standard interview for PTSD.[46] The Trauma Symptom Checklist for Children[47] is a checklist for a wide range of trauma-related difficulties such as PTSD, depressive, anxiety, and dissociative and anger symptoms. The companion instrument for younger children, the Trauma Symptom Checklist for Young Children, has also been found to have good psychometric properties and its PTSD subscale has correlated well with PTSD scores on the UCLA PTSD Reaction Index in young children.[48]

EVALUATION

Recommendation 2. If Screening Indicates Significant PTSD Symptoms, the Clinician Should Conduct a Formal Evaluation To Determine Whether PTSD Is Present, the Severity of Those Symptoms, and the Degree of Functional Impairment. Parents or Other Caregivers Should Be Included in This Evaluation Wherever Possible (MS).

The proper assessment of PTSD requires relatively more diligence and educational interviewing than perhaps for any other disorder. Respondents need to be educated about complicated PTSD symptoms so that they understand what is being asked so that they do not over- or under-endorse symptoms based on misunderstandings of what is being asked. For instance, most people intuitively know what symptoms from other disorders such as sadness or hyperactivity look like, but few have experienced an overgeneralized fear reaction in the presence of a reminder of a life-threatening traumatic event in the past, or dissociative staring, or a sense of a foreshortened future. This would be especially true for nontraumatized parents responding about their children. This style of interviewing runs counter to the way most clinicians were trained in that inter-

TABLE 1 Abbreviated University of California at Los Angeles PTSD Reaction Index.[43] © 2001 Robert S. Pynoos and Alan M. Steinberg. Reprinted with permission from Alan M. Steinberg.

Here is a list of nine problems people sometimes have after very bad things happen. Think about your traumatic experience and circle one of the numbers (0, 1, 2, 3, or 4) that tells how often the problem happened to you DURING THE PAST MONTH. For example, 0 means not at all and 4 means almost every day.					
1. I get upset, afraid or sad when something makes me think about what happened.	None ☐ 0	Little ☐ 1	Some ☐ 2	Much ☐ 3	Most ☐ 4
2. I have upsetting thoughts or pictures of what happened come into my mind when I do not want them to.	None ☐ 0	Little ☐ 1	Some ☐ 2	Much ☐ 3	Most ☐ 4
3. I feel grouchy, or I am easily angered.	None ☐ 0	Little ☐ 1	Some ☐ 2	Much ☐ 3	Most ☐ 4
4. I try not to talk about, think about, or have feelings about what happened.	None ☐ 0	Little ☐ 1	Some ☐ 2	Much ☐ 3	Most ☐ 4
5. I have trouble going to sleep, or wake up often during the night.	None ☐ 0	Little ☐ 1	Some ☐ 2	Much ☐ 3	Most ☐ 4
6. I have trouble concentrating or paying attention.	None ☐ 0	Little ☐ 1	Some ☐ 2	Much ☐ 3	Most ☐ 4
7. I try to stay away from people, places, or things that make me remember what happened.	None ☐ 0	Little ☐ 1	Some ☐ 2	Much ☐ 3	Most ☐ 4
8. I have bad dreams, including dreams about what happened.	None ☐ 0	Little ☐ 1	Some ☐ 2	Much ☐ 3	Most ☐ 4
9. I feel alone inside and not close to other people.	None ☐ 0	Little ☐ 1	Some ☐ 2	Much ☐ 3	Most ☐ 4

viewers do not want to "lead" children during interviews. To prevent this, clinicians can ask children to provide adequate details about onset, frequency, and duration to be convincing. In one study, 88% of PTSD symptomatology was not observable from clinical examination of young children.[12] The reexperiencing and avoidance items in particular require an individual to recognize that their emotions and behaviors are yoked to memories of previous events that, almost by the definition of PTSD, they are trying to avoid remembering. In particular, it is insufficient to ask about reexperiencing and avoidance items generically, such as, "Do you have distress at reminders of your past event?" Interviewers must tailor these probes to the individualized experiences of each patient with specific examples, such as, "When you went past the house where the event occurred, did you get upset?" Many individuals will respond in the negative to the generic question, but in the affirmative to the specific probe once they have been properly educated on what the interviewer is asking about.

The clinician should ask the child and parent about symptom severity and functional impairment in addition to the presence of PTSD symptoms during the assessment. The Child PTSD Symptom Scale includes a rating of functional impairment that can be followed during the course of treatment to monitor improvement. Younger children may use more developmentally appropriate visual analogs such as gradated depictions of fearful to happy faces or a "fear thermometer" to rate symptom severity and interference with functioning.

Although formal psychological testing or questionnaires are not required to diagnose PTSD, several instruments may be helpful in supplementing the clinical interview in youth 4 to 17 years old. Clinicians may find the Clinician's Assessment of PTSD Symptoms—Child and Adolescent Version[49] or the Schedule for Affective Disorders and Schizophrenia for School Aged Children—Present and Lifetime Version PTSD section[50] helpful in this regard. Both entail child and parent consensus ratings of PTSD symptoms that are rated in relation to an index trauma selected at the beginning of the interview.

For preschool children, the Posttraumatic Stress Disorder Semi-Structured Interview and Observational Record for Infants and Young Children is an interview for caregivers that contains appropriate developmental modifications.[51]

Recommendation 3. The Psychiatric Assessment Should Consider Differential Diagnoses of Other Psychiatric Disorders and Physical Conditions That May Mimic PTSD (MS).

Psychiatric conditions may present with symptoms similar to those seen in PTSD. Avoidance and reexperiencing symptoms of PTSD such as restless, hyperactive, disorganized, and/or agitated activity or play can be confused with attention-deficit/hyperactivity disorder (ADHD). Hyperarousal symptoms in children such as difficulty sleeping, poor concentration, and hypervigilant motor activity also overlap significantly with typical ADHD symptoms, and unless a careful history of trauma exposure is taken in relation to the timing of the onset or worsening of symptoms, these conditions may be difficult to distinguish. PTSD may also present with features more characteristic of oppositional defiant disorder due to a predominance of angry outbursts and irritability; this may be particularly true if the child is being exposed to ongoing trauma reminders (such as the presence of the perpetrator of violence). PTSD may mimic panic disorder if the child has striking anxiety and psychological and physiologic distress upon exposure to trauma reminders and avoidance of talking about the trauma. PTSD may be misdiagnosed as another anxiety disorder including social anxiety disorder, obsessive-compulsive disorder, general anxiety disorder, or phobia due to avoidance of feared stimuli, physiologic and psychological hyperarousal upon exposure to feared stimuli, sleep problems, hypervigilance, and increased startle reaction. PTSD may also mimic major depressive disorder due to the presence of self-injurious behaviors as avoidant coping with trauma reminders, social withdrawal, affective numbing, and/or sleep difficulties. PTSD may be misdiagnosed as bipolar disorder, as discussed above, due to children's hyperarousal symptoms and other anxiety symptoms mimicking hypomania; traumatic reenactment mimicking aggressive or hypersexual behavior; and maladaptive attempts at cognitive coping mimicking pseudo-manic statements. An examination of the revised criteria for juvenile mania and child PTSD symptoms reveals significant overlap.[52] PTSD may be misdiagnosed as a primary substance-use disorder because drugs and/or alcohol may be used to numb or avoid trauma reminders. Conversely, it is important to remember that there are many youths with a history of trauma who have primary substance-use disorders with few trauma symptoms; these youths will typically benefit more from receiving treatment for substance use than for PTSD.

Some children with PTSD may be severely agitated. The severity of their hypervigilance, flashbacks, sleep disturbance, numbing, and/or social withdrawal may mimic a psychotic disorder. Other children with PTSD may have unusual perceptions that should be differentiated from the hallucinations of a psychotic illness. The likelihood of a delirium should also be considered in the presence of impairment of sensorium and fluctuating levels of consciousness. Any underlying physical illness associated with trauma requires immediate medical care.

Physical conditions that may present with PTSD-like symptoms include hyperthyroidism, caffeinism, migraine, asthma, seizure disorder, and catecholamine- or serotonin-secreting tumors. Prescription drugs with side effects that may mimic aspects of PTSD include antiasthmatics, sympathomimetics, steroids, selective serotonin reuptake inhibitors (SSRIs), antipsychotics (akathisia), and atypical antipsychotics. Nonprescription drugs with side effects that may mimic PTSD include diet pills, antihistamines, and cold medicines.

Posttraumatic stress disorder is often associated with somatic symptoms such as headaches and abdominal complaints. A mental health assessment should be considered early in the medical evaluation of youths with somatic complaints, particularly those with a known history of trauma exposure. There is some preliminary evidence to suggest that trauma exposure adversely affects immunologic functioning in children.[53]

TREATMENT

Recommendation 4. Treatment Planning Should Consider a Comprehensive Treatment Approach Which Includes Consideration of the Severity and Degree of Impairment of the Child's PTSD Symptoms (MS).

Treatment of children with PTSD symptoms should include education of the child and par-

ents about PTSD, consultation with school personnel, and primary care physicians once informed consent/assent has been obtained, and trauma-focused psychotherapy including cognitive-behavioral therapy, psychodynamic psychotherapy, and/or family therapy. Pharmacotherapy may also be considered in the multimodal approach to children with PTSD. School-based screening and treatments should be considered after community-level traumatic events because this is an efficient way of identifying and treating affected children. Selection and timing of the specific treatment modalities for an individual child and family in clinical practice involves consideration of psychosocial stressors, risk factors, severity and impairment of PTSD, age, cognitive and developmental functioning of the child and family functioning, and other comorbid conditions. In addition, child and family factors such as attitudes or acceptance of a particular intervention and clinician factors such as training, access to and attitudes about evidence-based interventions, and affordability of such interventions need to be considered.

Children with significant PTSD symptoms who do not meet full criteria for a PTSD diagnosis often have comparable functional impairment to those with a PTSD diagnosis.[27,33] Treatment decisions for children should take into account symptom severity and functional impairment, regardless of whether or not they have an actual PTSD diagnosis. Until evidence from comparative studies can inform clinical practice, treatment of mild PTSD should begin with psychotherapy. Valid reasons for combining medication and psychotherapy include the need for acute symptom reduction in a child with severe PTSD, a comorbid disorder that requires concurrent treatment, or unsatisfactory or partial response to psychotherapy and potential for improved outcome with combined treatment.[54]

There is evidence that including parents in treatment is helpful for resolution of children's trauma-related symptoms. Deblinger et al.[55[rct]] provided trauma-focused cognitive behavioral therapy (CBT) to parents alone, children alone, or to parents and children and compared these three conditions with community treatment as usual. Parental inclusion in treatment resulted in significantly greater improvement in child-reported depression and parent-reported behavior problems. Studies have demonstrated that lower levels of parental emotional distress[39[rct],56[rct]] and stronger parental support[57[rct]] predict more positive treatment response, including in PTSD symptoms, during children's participation in trauma-focused CBT (TF-CBT) treatment.

Recommendation 5. Treatment Planning Should Incorporate Appropriate Interventions for Comorbid Psychiatric Disorders (MS).

Children with PTSD often have comorbid psychiatric conditions. Appropriate diagnosis and treatment should be provided in a timely manner according to established treatment guidelines for the comorbid condition. PTSD commonly occurs in the presence of depressive disorders,[58] ADHD,[59] substance abuse,[60] and other anxiety disorders.[58] Ideally, treatment of comorbid conditions should be provided in an integrated fashion. One evidence-supported model for treating adolescents with PTSD and comorbid substance abuse has been described.[61,62] This model, Seeking Safety, integrates evidence-based interventions for PTSD and substance-use disorders and focuses on assuring safety in the present moment.

Recommendation 6. Trauma-Focused Psychotherapies Should Be Considered First-Line Treatments for Children and Adolescents With PTSD (MS).

Among psychotherapies there is convincing evidence that trauma-focused therapies, that is, those that specifically address the child's traumatic experiences, are superior to nonspecific or nondirective therapies in resolving PTSD symptoms. This has been true across the developmental spectrum from preschoolers through adolescents, and encompassing diverse theoretical therapies such as psychoanalytic, attachment, and cognitive-behavioral treatment models.[63[rct],64[rct],65[rct]] The importance of directly addressing the child's traumatic experiences in therapy makes sense when considering PTSD symptoms: avoidance of talking about trauma-related topics would be an expected occurrence when children are given a choice of focus during treatment, as is the case in nondirective treatment models. This outcome was observed in a study comparing child-centered therapy sessions with trauma-focused treatment, i.e., children in child-centered therapy rarely spontaneously mentioned their personal traumatic experiences.[63[rct]] Timing and pacing of trauma-focused therapies are guided

in part by children's responses that therapists and parents monitor during the course of treatment. Clinical worsening may suggest the need to strengthen mastery of previous treatment components through a variety of interventions, rather than abandoning a trauma-focused approach.

Among the trauma-focused psychotherapies, TF-CBT[66] has received the most empirical support for the treatment of childhood PTSD. TF-CBT and a similar group format, Cognitive Behavioral Intervention for Trauma in Schools (CBITS),[67] have been supported by numerous randomized controlled trials for children with PTSD comparing these treatments with wait-list control conditions or active alternative treatments. Child-parent psychotherapy[68] combines elements of TF-CBT with attachment theory and has been tested in one randomized controlled trial. A trauma-focused psychoanalytic model[65] for sexually abused children has been tested in one randomized study. Many other models are in development and at various stages of testing.

Based on the evidence presented below, there is growing support for the use of trauma-focused psychotherapies that (1) directly address children's traumatic experiences, (2) include parents in treatment in some manner as important agents of change, and (3) focus not only on symptom improvement but also on enhancing functioning, resiliency, and/or developmental trajectory.

COGNITIVE-BEHAVIORAL THERAPIES

In TF-CBTs the clinician typically provides stress-management skills in preparation for the exposure-based interventions that are aimed at providing mastery over trauma reminders. Cohen et al.[66] described commonly provided TF-CBT components using the PRACTICE acronym: *psychoeducation* (e.g., educating children and parents about the type of traumatic event the child experienced, e.g., how many children this happens to, what causes it to happen, etc.; common trauma reactions including PTSD and about the TF-CBT treatment approach); *parenting skills* (use of effective parenting interventions such as praise, positive attention, selective attention, time out, and contingency reinforcement procedures); *relaxation skills* (focused breathing, progressive muscle relaxation, and other personalized relaxation activities to reverse the physiologic manifestations of traumatic stress); *affective modulation skills* (feeling identification; use of positive self-talk, thought interruption, and positive imagery; enhancing safety, problem solving, and social skills; recognizing and self-regulating negative affective states); *cognitive coping and processing* (recognizing relations among thoughts, feelings, and behaviors; changing inaccurate and unhelpful thoughts for affective regulation); *trauma narrative* (creating a narrative of the child's traumatic experiences, correcting cognitive distortions about these experiences, and placing these experiences in the context of the child's whole life); *in vivo mastery of trauma reminders* (graduated exposure to feared stimuli); *conjoint child-parent sessions* (joint sessions in which the child shares the trauma narrative with parents and other family issues are addressed); and *enhancing future safety and development* (addressing safety concerns related to prevention of future trauma, return to normal developmental trajectory). Different forms of TF-CBT interventions use different combinations and dosages of these PRACTICE components, depending on their target populations and types of trauma.

The most widely used and best researched manual-based CBT protocol for PTSD is TF-CBT.[66,69] TF-CBT has been designated "supported and efficacious" based on standards of empirical support.[70] TF-CBT was designed for children with PTSD in addition to depression, anxiety, and other trauma-related difficulties such as shame and self-blame. TF-CBT is typically delivered individually to children and their nonperpetrator parents, although it has also been provided in group formats. TF-CBT has been tested in several randomized controlled trials involving more than 500 children and shown clinically significant improvement compared with usual community treatment,[55[rct]] nondirective supportive therapy,[56[rct],71[rct]] child-centered therapy,[63] and wait-list control[72[rct]] conditions for children 3 to 17 years old. Treatment gains were maintained at 1-year follow-up in several of these studies.[73-76] TF-CBT has been adapted for Hispanic youth[77] and Native American families.[78] TF-CBT was provided in Spanish and English after the terrorist attacks of September 11, 2001, and was effective in decreasing PTSD symptoms.[79[ct]] TF-CBT has also been adapted for childhood traumatic grief, an emerging condition in which children lose loved ones in traumatic circumstances. Two trials of this adapted treatment model have shown significant improve-

ment in PTSD and childhood traumatic grief symptoms.[80[ut],81[ut]]

The best-researched group CBT protocol for childhood PTSD is CBITS. CBITS includes all of the PRACTICE components described above, with the exception of the parental component, which is limited and optional in the CBITS model. CBITS also provides a teacher component to educate teachers about the potential impact of trauma on students' classroom behavior and learning. CBITS is provided in a group format in the school setting (i.e., group therapy sessions are held in school, but not within children's regular classroom periods). The trauma narrative component is typically conducted during individual "breakout" sessions during which each child meets one on one with their usual group therapist. CBITS has been tested in two studies of children exposed to community violence. Stein et al.[67[rct]] documented that CBITS was superior to a wait-list condition in decreasing PTSD and depression. Kataoka et al.[82[ct]] also found that children assigned to CBITS improved more than children assigned to a wait-list control; this study cohort consisted of immigrant Latino children.

Seeking Safety[61] is a manualized individual or group CBT protocol for PTSD and comorbid substance-use disorders that includes sequential interventions for affective modulation, substance-abuse risk reduction, and trauma-specific cognitive processing. Seeking Safety was superior to treatment as usual in a small randomized controlled pilot group study for adolescent girls with PTSD and substance-abuse disorder.[62[rct]]

Several other manualized CBT protocols for child and adolescent PTSD are currently being used and/or evaluated. UCLA Trauma and Grief Component Therapy is an individual or group-based, adolescent-focused intervention that uses CBT in addition to other evidence-based components to alleviate PTSD and traumatic grief and to restore developmental progression. It was found to decrease PTSD, traumatic grief, and depressive symptoms in a study of Bosnian adolescents.[83[ct]] In a second study using this model, adolescents exposed to community violence experienced relief from PTSD symptoms.[84[ut]] This model was also found to be effective for reducing children's PTSD symptoms related to terrorism.[79[ct]] Individual child TF-CBT has shown superiority over a wait-list control condition in decreasing PTSD symptoms after single-episode traumas.[85[rct]] A cognitive and family therapy-based treatment model, Surviving Cancer Competently Intervention Program, which is provided in four group and family sessions over a single day, was superior to a wait-list control condition in decreasing hyperarousal symptoms in adolescent cancer survivors.[86[rct]]

Eye Movement Desensitization and Reprocessing (EMDR) is an effective treatment for adult PTSD but most randomized controlled trials for child EMDR have had serious methodologic shortcomings. One randomized controlled trial showed that a child-modified EMDR protocol was superior to a wait-list control in alleviating reexperiencing symptoms for Swedish children.[87[rct]] The researchers noted that "several deviations" existed between the child and adult EMDR components and techniques. The investigators stated that "the similarity of the structured EMDR technique and its components to the principles of cognitive psychotherapy is striking . . . the cognitive character of the EMDR makes it suitable for child applications." Because of this description, EMDR is included under CBT interventions.

PSYCHODYNAMIC TRAUMA-FOCUSED PSYCHOTHERAPIES

Psychodynamic trauma-focused psychotherapies aim to promote personality coherence, healthy development, and the achievement of traumatic symptom resolution.[88] In younger children, these treatments have focused on the parent-child relationship to address traumatic situations in which the parent (typically the mother) was the victim of the trauma (e.g., domestic violence) or was so personally traumatized or emotionally compromised by the experience that she was unable to sustain the child's development. For older children psychodynamic trauma-focused therapies provide an opportunity to mobilize more mature cognitive capacities, objectify and explain symptoms, identify trauma reminders, identify environmental factors that may complicate recovery—especially interactions that heighten regressive experience and make more explicit ways in which overwhelming fear and helplessness of the traumatic situation run counter to age-appropriate strivings for agency, competence, and self-efficacy. The relatively unstructured nature of the sessions may contribute to adolescents regaining a more internal locus of control that was lost during exposure to uncontrollable traumatic events.[88]

Child-parent psychotherapy is a relationship-based treatment model for young children (infants to age 7 years) who have experienced family trauma such as domestic violence.[68] It includes the following components: modeling appropriate protective behavior; assisting the parent in accurately interpreting the child's feelings and actions; providing emotional support to the child and parent; providing empathic communication, crisis intervention, and concrete assistance with problems of living; developing a joint parent-child narrative about the family trauma and correcting cognitive distortions in this regard; and interventions for addressing traumatic grief. As is clear from this description, this treatment model is not easily characterized as one specific type of therapy; rather it includes elements of psychodynamic, cognitive behavioral, social learning, and attachment treatments.

Child-parent psychotherapy is provided in conjoint parent-child treatment sessions. Child-parent psychotherapy has been tested in one randomized controlled trial for 3- to 5-year-old children exposed to marital violence and shown to be superior to case management plus individual psychotherapy in decreasing child PTSD and behavior problems.[64[rct]] Improvement in behavior problems was maintained at 6-month follow-up; child PTSD symptoms were not assessed at follow-up due to financial constraints.[89[rct]] Child-parent psychotherapy has been adapted for young children with traumatic grief[90] and is currently being tested in an open study for this population.

Trowell et al.[65[rct]] found that individual psychoanalytic psychotherapy that addressed sexual abuse-related issues was superior to group psychoeducation in decreasing PTSD symptoms in sexually abused children and adolescents. Although the total number of hours spent in treatment between the two conditions was equivalent (psychoeducation groups lasted 1.5 hours, whereas individual psychotherapy sessions lasted 1 hour), the investigators did not state whether duration of treatment was equivalent across the two conditions (the mean number of individual psychoanalytic sessions was 30 and the mean number of psychoeducation sessions was 18).

Recommendation 7. SSRIs Can Be Considered for the Treatment of Children and Adolescents With PTSD (OP).

Selective serotonin reuptake inhibitors are approved for use in adult PTSD and are the only medications shown to effectively decrease symptoms in all three adult PTSD clusters.[91-93] There are important differences between adults and children with regard to the physiology and manifestations of PTSD[94] that may have ramifications for the efficacy and use of medications in this age group. The history of antidepressant use in children[95] (i.e., early preliminary results were later found to be largely attributable to placebo effects) provides an illustration of why child clinicians should be cautious about basing treatment decisions on the adult literature, and why more medication trials are needed for children with PTSD. A recent acute PTSD treatment study involving more than 6,000 adult participants illustrated that those who agreed to take medication had significantly worse PTSD symptoms than those who agreed to receive psychotherapy.[34]

Preliminary evidence has suggested that SSRIs may be beneficial in reducing child PTSD symptoms. Seedat et al.[96[ut]] compared the rate of improvement in 24 child and adolescent subjects with 14 adult subjects provided with citalopram 20 to 40 mg/day and demonstrated equivalent improvements between groups. A Turkish open trial of fluoxetine showed effectiveness in improving earthquake-related PTSD symptoms in 26 participants 7 to 17 years old.[97]

Two recent randomized trials have evaluated the efficacy of SSRI medication for treating PTSD in children and adolescents. The first failed to find any superiority of sertraline over placebo in 67 children with initial PTSD diagnoses, although both groups experienced significant improvement, suggesting a strong placebo effect.[98[rct]] The second compared TF-CBT plus sertraline to TF-CBT plus placebo in 24 10 to 17 year olds with sexual abuse-related PTSD symptoms.[99[rct]] All children significantly improved with no group-by-time differences found except on Children's Global Assessment Scale scores. This study concluded that, although starting treatment with combined sertraline and TF-CBT might be beneficial for some children, it is generally preferable to begin with TF-CBT alone and add an SSRI only if the child's symptom severity or lack of response suggests a need for additional interventions.

Children with comorbid major depressive disorder, general anxiety disorder, obsessive-compulsive disorder, or other disorders known to respond to an SSRI may benefit from the addition of an SSRI earlier in treatment. More than 60% of the participants in the TF-CBT plus sertraline

study[99] had comorbid major depressive disorder, yet the results did not indicate a clear benefit of adding sertraline with regard to improvement in PTSD or depression scores.

Recent findings have suggested that some risks may be associated with SSRI medications.[100,101] In addition, SSRIs may be overly activating in some children and lead to irritability, poor sleep, or inattention; because these are symptoms of PTSD hyperarousal, SSRIs may not be optimal medications for these children. In these situations alternative psychotropic medication options may need to be considered. On the basis of the above information, there are insufficient data to support the use of SSRI medication alone (i.e., in the absence of psychotherapy) for the treatment of childhood PTSD.

Recommendation 8. Medications Other Than SSRIs May Be Considered for Children and Adolescents With PTSD (OP).

Algorithms and guidelines for treatment of adults with PTSD suggest that SSRIs can be recommended for the treatment of adult PTSD as a medication monotherapy, antiadrenergic agents such as clonidine and propranalol may be useful in decreasing hyperarousal and reexperiencing symptoms, anticonvulsants may show promise for treating PTSD symptoms other than avoidance, and benzodiazepines have not been found to be beneficial in treating PTSD-specific symptoms.[102,103]

Some evidence from open clinical trials has suggested that medications other than SSRIs may be helpful for youth with PTSD symptoms. These include α- and β-adrenergic blocking agents, novel antipsychotic agents, non-SSRI antidepressants, mood-stabilizing agents, and opiates. Robert et al.[104[rct]] randomly assigned hospitalized children with ASD secondary to burns to receive imipramine or chloral hydrate. This study demonstrated that at 6 months children receiving imipramine were significantly less likely to have developed PTSD than those receiving chloral hydrate. However, due to concern about rare but serious cardiac side effects, tricyclic antidepressants are not recommended as a first-line preventive intervention for PTSD in children. Saxe et al.[105[ut]] conducted a naturalistic study of the relation between morphine dosage and subsequent development of PTSD in acutely burned hospitalized children and found that, controlling for subjective experience of pain, there was a significant linear association between mean morphine dosage (milligrams per kilogram per day) and 6-month reduction in PTSD symptoms.

There is some evidence of increased dopamine presence in children and adults with PTSD,[16] which is believed to contribute to the persistent and overgeneralized fear characteristic of PTSD. Dopamine blocking agents such as neuroleptics may therefore decrease some PTSD symptoms. One open study of risperidone resulted in 13 of 18 boys experiencing remission from severe PTSD symptoms.[106[ut]] These children had high rates of comorbid symptoms that could be expected to respond positively to risperidone; for example, 85% had coexisting ADHD and 35% had bipolar disorder.

There is also evidence of increased adrenergic tone and responsiveness in children with PTSD.[15] Both α- and β-adrenergic blocking agents have been used with some success in children with PTSD symptoms. Clonidine has been found in two open studies to decrease basal heart rate, anxiety, impulsivity, and PTSD hyperarousal symptoms in children with PTSD.[107[ut]],[108[ut]] In a case study, clonidine treatment resulted in improved sleep and increased neural integrity of the anterior cingulate.[109[cs]] Propranalol was found in an open study to decrease reexperiencing and hyperarousal symptoms in children with PTSD symptoms.[110[ut]]

The hypothalamic-pituitary-adrenal axis is also dysregulated in children with PTSD, in ways that are complex. This suggests a potential mechanism for future pharmacologic intervention, for example, through the use of corticotrophin release factor antagonists.[103(p97)] However, no trials of these medications have been conducted in children to date.

Recommendation 9. Treatment Planning May Consider School-Based Accommodations (CG).

Children with significant PTSD symptoms may have impaired academic functioning. This is often due to hypervigilance to real or perceived threats in the environment and may be a particular issue if trauma reminders are present in the school setting. One example of a school-based trauma reminder would be a sexual assault or bullying occurring at school, particularly if the perpetrator still attended the same school. Another example of a school-based trauma reminder was demonstrated by a school in New Orleans overlooking a levee that

was breached and houses destroyed by the flooding after Hurricane Katrina. Children attending this school were faced with unavoidable daily reminders of the original trauma.

Although every reasonable effort should be made to assist children in overcoming avoidance of innocuous trauma reminders (i.e., people, places, or situations that are inherently innocuous or safe, which only seem frightening to the child because of generalized fear), children should also be protected from realistic ongoing threats or danger whenever possible. Children who are experiencing significant functional impairment related to trauma reminders may benefit from school accommodations up to and including placement at an alternative school where reminders are not present. This is especially true if safety is an issue, for example, if the perpetrators of interpersonal violence and/or their peers are harassing the victimized child on an ongoing basis.

Recommendation 10. Use of Restrictive "Rebirthing" Therapies and Other Techniques That Bind, Restrict, Withhold Food or Water, or Are Otherwise Coercive Are Not Endorsed (NE).

Restrictive "rebirthing" or "holding" therapies that forcibly bind, restrict, withhold food or water, or are otherwise coercive have been used for children who have experienced severe early childhood trauma or losses. Often these children have been diagnosed with a more severe disorder, reactive attachment disorder, rather than PTSD. There is no empirical evidence to support the efficacy of these treatments, and in some cases these interventions have led to severe injury or death.[111] These interventions are therefore not endorsed.

PREVENTION AND EARLY SCREENING

Recommendation 11. School- or Other Community-Based Screening for PTSD Symptoms and Risk Factors Should Be Conducted After Traumatic Events That Affect Significant Numbers of Children (CG).

After community-level events that have the potential to traumatize large numbers of children, conducting screening for PTSD in schools or other settings where children commonly gather is important for secondary prevention and early identification. Typically such screening efforts do not occur in the immediate aftermath (i.e., first 4 weeks) after a community-level trauma due to a variety of factors including that usual services are often disrupted after such events; adults (including teachers and school administrators) have also been displaced, bereaved, and/or traumatized; and schools are usually not proactively prepared for such screening efforts.[112] Screening ideally ought to begin after approximately 1 month based on consensus from empirical findings that the vast majority of enduring PTSD symptoms begin immediately, and those who will experience natural recovery will do so within about 1 month. Models exist for successful universal school-based screening after community-level disasters[39] and for providing school-based treatment.[113] Because symptoms may not develop immediately and PTSD is not the only disorder that children develop after trauma exposure, it makes sense to also screen children for known risk factors for developing subsequent mental health difficulties and to provide follow-up for children at greatest risk for developing negative mental health sequelae.

Group interventions in school or other community settings can provide effective early treatment for children with PTSD symptoms. Adaptation of protocol-based CBT interventions to fit diverse populations and taking into account the limitations of community resources, including those of inner-city minority youth, can make evidence-supported treatments feasible. This was accomplished after the September 11 terrorist attacks through Project Liberty. TF-CBT and the UCLA Trauma and Grief Component Therapy were provided to more than 500 mostly multiply traumatized children from highly diverse ethnic backgrounds, provided in English and Spanish in a variety of community, school, and university-affiliated settings in group and in family and individual formats. Results indicated that this approach was effective in decreasing children's PTSD symptoms, and that clinicians were able to use evidence-supported treatments with fidelity. Programs that foster resiliency in youth are being tested internationally to proactively "immunize" children against the potentially adverse affects of traumatic events.[114]

PARAMETER LIMITATIONS

American Academy of Child and Adolescent Psychiatry Practice Parameters are developed to assist clinicians in psychiatric decision making. These Parameters are not intended to define the

standard of care and should not be deemed inclusive of all proper methods of care or exclusive of other methods of care directed at obtaining the desired results. The ultimate judgment regarding the care of a particular patient must be made by the clinician in light of all the circumstances presented by the patient and his/her family, the diagnostic and treatment options available, and available resources. &

Accepted December 22, 2009.

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American Academy of Child and Adolescent Psychiatry (AACAP) Practice Parameters are developed by the AACAP Work Group on Quality Issues (WGQI) in accordance with American Medical Association policy. Parameter development is an iterative process among the primary author(s), the WGQI, topic experts, and representatives from multiple constituent groups, including the AACAP membership, relevant AACAP components, the AACAP Assembly of Regional Organizations, and the AACAP Council. Responsibility for Parameter content and review rests with the author(s), the WGQI, the WGQI Consensus Group, and the AACAP Council.

The AACAP develops patient-oriented and clinician-oriented Practice Parameters. Patient-oriented Parameters provide recommendations to guide clinicians toward best treatment practices. Recommendations are based on empirical evidence (when available) and clinical consensus (when not) and are graded according to the strength of the empirical and clinical support. Clinician-oriented Parameters provide clinicians with the information (stated as principles) needed to develop practice-based skills. Although empirical evidence may be available to support certain principles, principles are primarily based on expert opinion derived from clinical experience. This Parameter is a patient-oriented Parameter.

The primary intended audience for the AACAP Practice Parameters is child and adolescent psychiatrists; however, the information contained therein may also be useful for other mental health clinicians.

The authors wish to acknowledge the following experts for their contributions to this Parameter: Lisa Amaya-Jackson, M.D., M.P.H., Michael Debellis, M.D., M.P.H., Anthony Mannarino, Ph.D., Frank Putnam, M.D., Robert Pynoos, M.D., M.P.H., and Michael Scheeringa, M.D., M.P.H.

This Parameter was reviewed at the Member Forum at the AACAP Annual Meeting in October 2007.

From February 2009 to September 2009, this Parameter was reviewed by a Consensus Group convened by the WGQI. Consensus group members and their constituent groups were Heather Walter, M.D., M.P.H., Scott Benson, M.D., Saundra Stock, M.D., and Allan Chrisman, M.D. (WGQI); Anthony Mannarino, Ph.D., and Michael Scheeringa, M.D., M.P.H (topic experts); Nancy Black, M.D. (AACAP Disaster and Trauma Issues Committee), and Efrain Bleiberg, M.D. (AACAP Psychotherapy Committee); Jeanne Bereiter, M.D., Gail Edelsohn, M.D., and Susan Scherer, M.D. (AACAP Assembly of Regional Organizations); and Kenneth Rogers, M.D., Yiu Kee Warren Ng, M.D., and Paramjit Joshi, M.D. (AACAP Council).

Disclosures of potential conflicts of interest for authors, WGQI chairs, and expert reviewers are provided below. Disclosures of potential conflicts of interest for all other individuals named above are provided on the AACAP Web site on the Practice Information page.

This Practice Parameter was approved by the AACAP Council on October 7, 2009. This practice parameter is available on the Internet (www.aacap.org).

Disclosures: Dr. Cohen receives funding from the National Institute of Mental Health, the Substance Abuse and Mental Health Services Administration, and book royalties from Guilford Press. Dr. Bukstein, co-chair, receives or has received research support, acted as a consultant, and/or served on a speaker's bureau for McNeil Pediatrics and Novartis Pharmaceuticals Corporation. Dr. Walter, co-chair, has no financial relationships to disclose. Dr. Amaya-Jackson receives or has received research support from the Substance Abuse and Mental Health Services Administration. Dr. De Bellis receives or has received research support from the National Institutes of Health. Dr. Mannarino receives or has received research support from the National Institutes of Health and the Substance Abuse and Mental Health Services Administration. He has a book published with Guilford Press. He is a section president of the American Psychological Association. Dr. Putnam serves as a trustee of the Ohio Children's Trust Fund. He has no financial relationships to disclose. Robert Pynoos has no financial relationships to disclose. Dr. Scheeringa has no financial relationships to disclose.

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DOI: 10.1016/j.jaac.2009.12.020

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