

# 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

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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.<sup>1</sup> More individuals are seeking care,<sup>2</sup> and the Patient Protection and Affordable Care Act<sup>3</sup> has broadened eligibility for mental health services.<sup>3</sup> However, most youth with psychiatric conditions do not receive any intervention.<sup>4,5</sup> 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,<sup>6–9</sup> and insufficient funding to sustain a stable workforce for public mental health programs.<sup>10,11</sup> These access deficits disproportionately affect children and adolescents living outside major metropolitan areas and in inner-city communities.<sup>8,12–15</sup> 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.<sup>16,17</sup> 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<sup>18</sup> and responds to calls for further clinical guidance on this topic.<sup>19</sup> Because of the limited empirical evidence base, this update draws from child-specific telemental health research (Table 1),<sup>20–60</sup> guidelines for evidence-based psychotherapies,<sup>61</sup> the general telemental health evidence base,<sup>62</sup> and expertise of child and adolescent telepsychiatry providers.<sup>23,35,41,63–71</sup>

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.

## 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



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



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**TABLE 1** Evidence-Base Supporting Child and Adolescent Telepsychiatry

Citation	Sample	Assessment	Findings
<b>Randomized controlled trials</b>			
Nelson <i>et al.</i> , 2003 <sup>20</sup>	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 <i>et al.</i> , 2011 <sup>21</sup>	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 <i>et al.</i> , 2012 <sup>22</sup>	20 children (age 8–17 y) with Tourette's disorder or chronic motor tic disorder	YGTS, PTQ, CGI-S, CGH	youth in ITV and in-person service delivery modalities experienced significant tic decrease with no between-group differences
Myers <i>et al.</i> , 2015 <sup>23</sup>	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 <i>et al.</i> , 2013 <sup>24</sup>	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 <i>et al.</i> , 2015 <sup>25</sup>	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 <i>et al.</i> , 2017 <sup>26</sup>	children 3–5 y old with disruptive behaviors	K-DBDS, CGI-S CGH; CGAS, ECBI, CBCL, CSQ-8, TAI	children's behaviors improved comparably for PCIT and i-PCIT service models
<b>Pre-post or comparison studies</b>			
Glueckauf <i>et al.</i> , 2002 <sup>27</sup>	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 <i>et al.</i> , 2008 <sup>28</sup>	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 <i>et al.</i> , 2008 <sup>29</sup>	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 <i>et al.</i> , 2012 <sup>30</sup>	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 <i>et al.</i> , 2013 <sup>31</sup>	7 parents; youth age not reported	OASIS training program	parents increased their knowledge and self-reported implementation of behavioral strategies
<b>Satisfaction studies</b>			
Blackmon <i>et al.</i> , 1997 <sup>32</sup>	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 <i>et al.</i> , 2001 <sup>33</sup>	30 children (age 4–16 y; mean 13 y)	satisfaction questionnaire	showed high satisfaction of children, teens, parents, and psychiatrists with ITV
Kopel <i>et al.</i> , 2001 <sup>34</sup>	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 <i>et al.</i> , 2006 <sup>35</sup>	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 <i>et al.</i> , 2006 <sup>36</sup>	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 <i>et al.</i> , 2007 <sup>37</sup>	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 <i>et al.</i> , 2008 <sup>38</sup>	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 <i>et al.</i> , 2010 <sup>39</sup>	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 <i>et al.</i> , 2010 <sup>40</sup>	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 <i>et al.</i> , 2011 <sup>41</sup>	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 <i>et al.</i> , 2012 <sup>42</sup>	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
<b>Descriptive and service usage</b>			
Myers <i>et al.</i> , 2004 <sup>43</sup>	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 <i>et al.</i> , 2006 <sup>44</sup>	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 <i>et al.</i> , 2012 <sup>45</sup>	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 no factor inherent to the ITV delivery mechanism impeded adherence to national ADHD guidelines
Nelson <i>et al.</i> , 2012 <sup>46</sup>	22 youth (mean age 9.3 y)	chart review	
<b>Diagnostic validity</b>			
Elford <i>et al.</i> , 2000 <sup>47</sup>	25 children (age 4–16 y) with various diagnoses	diagnostic interviews	96% concordance between ITV and in-person evaluations; no differences in satisfaction
Stain <i>et al.</i> , 2011 <sup>48</sup>	11 adolescents and young adults (age 14–30 y)	Diagnostic Interview for Psychosis	strong correlation of assessments done in person vs. ITV
Reese <i>et al.</i> , 2013 <sup>49</sup>	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
<b>Chart review</b>			
Marcin <i>et al.</i> , 2005 <sup>50</sup>	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 <i>et al.</i> , 2007 <sup>51</sup>	100 children and adolescents (age 2–17 y; mean 11 y)	chart review and interviews with case managers	pros and cons of adherence
<b>Psychosomatic pediatrics interventions</b>			
Bensink <i>et al.</i> , 2007 <sup>52</sup>	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 <i>et al.</i> , 2008 <sup>53</sup>	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 <i>et al.</i> , 2008 <sup>54</sup>	99 youth (age 1–17 y)	retrospective review of patient medical records	ITV consultations resulted in substantial changes and additions to diagnoses; for a subset of patients, repeated ITV consultations led to improved health behaviors, weight maintenance, and/or weight loss
Witmans <i>et al.</i> , 2008 <sup>55</sup>	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 <i>et al.</i> , 2011 <sup>56</sup>	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 <i>et al.</i> , 2013 <sup>57</sup>	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 <i>et al.</i> , 2013 <sup>58</sup>	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 <i>et al.</i> , 2013 <sup>59</sup>	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 <i>et al.</i> , 2013 <sup>60</sup>	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; CGH = 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 Schedule 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<sup>18</sup> 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.

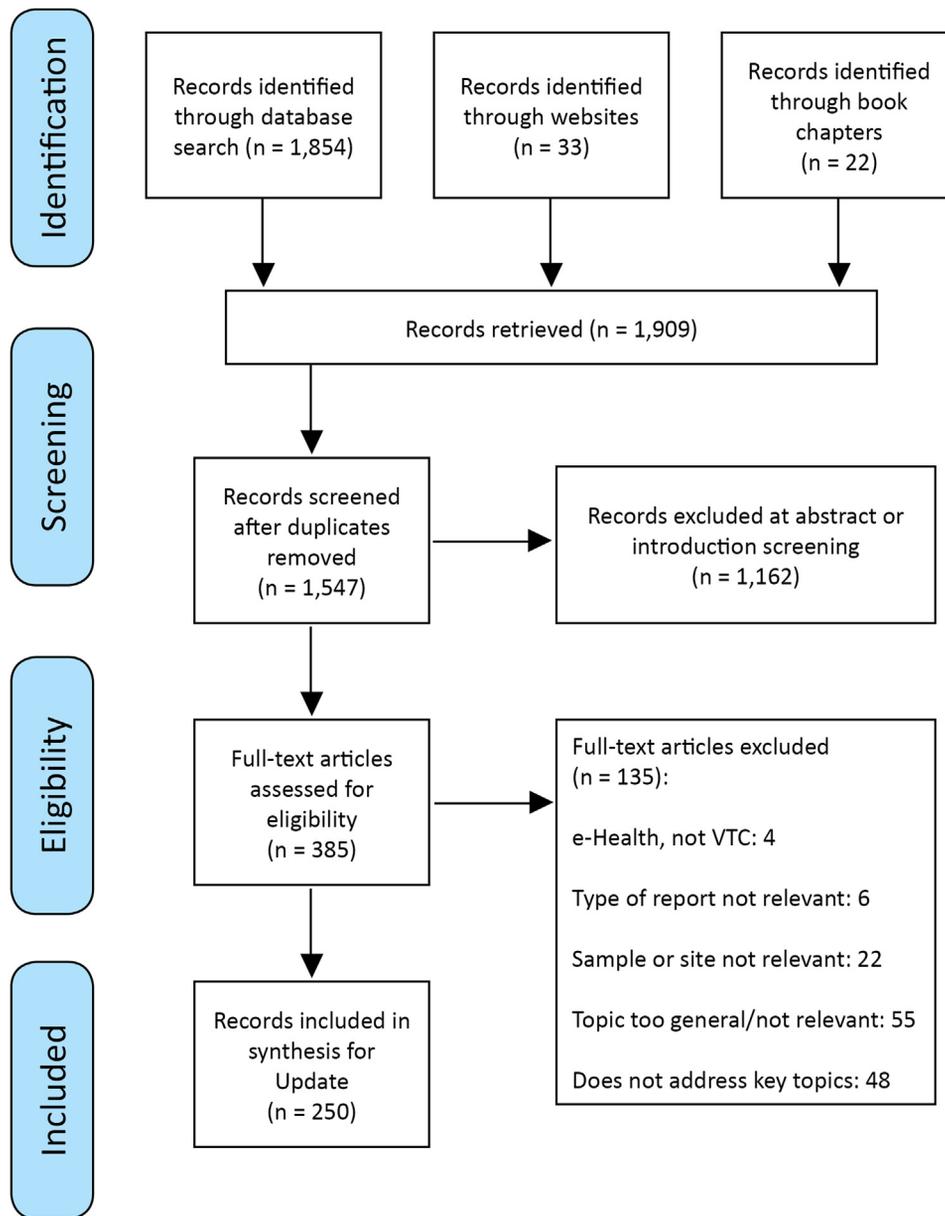
The evidence supporting telepsychiatry practice with adults greatly outweighs the evidence for practice with children and adolescents. Therefore, we included material gleaned from work with adults in diverse settings if deemed relevant to the feasibility, acceptability, sustainability, or effectiveness 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*.<sup>72-74</sup> 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.<sup>75</sup> 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.”<sup>76</sup> The CMS views telemedicine as a cost-effective alternative to the more traditional face-to-face method of care.<sup>77,78</sup>

**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.<sup>79,80</sup> 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.<sup>81</sup>

- *Applications or Platforms*: Technology used to provide videoconferencing, classified as standards based or consumer grade.<sup>82,83</sup>
- 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 ( $\geq 1.5$  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."<sup>84</sup> 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.<sup>85</sup> 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.<sup>86</sup> 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.<sup>87</sup> 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.<sup>88</sup> 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.<sup>75,89,90</sup> 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).<sup>88</sup> 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.<sup>91</sup> The Patient Protection and Affordable Care Act has recommended telehealth technologies to improve access to and quality of care for underserved populations.<sup>3</sup> Innovative child and adolescent telepsychiatry programs are being integrated into the pediatric medical home model<sup>92,93</sup> and sited in diverse community settings, such as pediatric clinics,<sup>39,41,68</sup> community mental health centers,<sup>43,94</sup> urban daycare centers,<sup>95</sup> schools,<sup>96,97</sup> juvenile correctional settings,<sup>44,98</sup> and homes.<sup>26,99,100</sup> Telepsychiatry services have expanded beyond major medical and academic centers<sup>37,41,101</sup> to the private practice setting.<sup>66,94</sup> 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.<sup>66</sup>

## 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.<sup>102</sup> 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,<sup>102</sup> particularly the

Office of Diversion Control regarding illicit pharmaceutical activities online.<sup>103</sup> 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<sup>88</sup> and at the federal level for Medicare coverage.<sup>90,104,105</sup> Germane issues that vary by state relate to licensure, parameters constituting the practice of medicine, definition of the doctor–patient relationship, and prescribing.<sup>106</sup>

National licensure and/or portability of licensure for telemedicine practice have been widely discussed for several years.<sup>107</sup> The recent launch of the Interstate Medical Licensure Compact will streamline the medical licensure process across states and support the expanded use of telemedicine.<sup>108</sup> 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.<sup>88</sup> 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.<sup>109</sup> 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.<sup>110</sup> 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.<sup>111</sup> 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).<sup>112</sup> 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<sup>113</sup> 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,<sup>114</sup> the regional Telehealth Resource Centers,<sup>91</sup> and the Center for Telehealth and e-Health Law.<sup>115</sup> The CMS also provides guidelines regulating telehealth and telemedicine.<sup>116,117</sup>

*Ethical Issues.* Telepsychiatry practice should comply with the ethical guidelines for child and adolescent psychiatry provided in the AACAP Code of Ethics.<sup>118</sup> Guidelines specific to telepsychiatry with youth are evolving.<sup>118,119</sup> 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.<sup>120</sup> 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.<sup>66,121,122</sup> 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.<sup>88,90</sup>

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,<sup>92</sup> clinics within nonmedical facilities such as schools,<sup>97,123,124</sup> juvenile justice programs,<sup>98</sup> or nonclinical settings such as the home.<sup>26,99,100</sup> 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<sup>125,126</sup> are promising, particularly within the pediatric medical home.<sup>93</sup> 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.<sup>120</sup>

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.<sup>66,94</sup> 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.<sup>127</sup>

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.<sup>128</sup> 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.<sup>129-131</sup> 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.<sup>80</sup> 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.<sup>40,124</sup>

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.<sup>18</sup> 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.<sup>18</sup> 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.<sup>120,132</sup>

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.<sup>133</sup> 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.<sup>134,135</sup> 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.<sup>67,121</sup> 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<sup>80</sup> 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.<sup>82,83</sup>

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.<sup>66</sup> 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.<sup>136</sup> 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.<sup>104</sup> 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.<sup>104,105</sup> 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.<sup>137</sup>

As of February 2017, all states and the District of Columbia have reported providing some form of Medicaid reimbursement for telemedicine services.<sup>88,89</sup> 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.<sup>76,88,91,104</sup>

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.<sup>88,89</sup> 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.<sup>88</sup> Psychiatrists can find assistance in identifying funding sources at various federal, national, and private websites.<sup>88,91,138,139</sup>

### 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.<sup>140</sup>

As mentioned earlier, cameras with pan, tilt, and zoom capabilities facilitate the development of a therapeutic alliance.<sup>67,121</sup> 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.<sup>68</sup>

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,<sup>106,141</sup> participants' perspectives,<sup>37,38,142</sup> and outcome variables (e.g., syndromal recovery, symptom reduction, academic progress) to assess patients' progress.<sup>23,51</sup> Patient portals can be an inexpensive and easy approach to collecting rating scales and for providing psychoeducation materials and records from referring providers.<sup>143</sup> 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.<sup>144</sup> Therefore, guidelines for pharmacotherapy with youth are extrapolated from systematic studies with adults<sup>145,146</sup> and youth<sup>23,147</sup> and descriptive reports with youth.<sup>43,63</sup>

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.<sup>79,80,148</sup> 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.<sup>63,67,149</sup> 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.<sup>63,67,94</sup> 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.<sup>109,150</sup> 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.<sup>140</sup> 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/ALMSDemo/player.html](http://www.rbha.net/presentations/ALMSDemo/player.html). Rating scales can be made available for the psychiatrist to use in assessing treatment response.<sup>62,143</sup> If the psychiatrist's schedule does not accommodate unanticipated or increased visits, for example, to assess youth after the initiation of antidepressant medications,<sup>151</sup> 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<sup>79,80</sup> 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.<sup>69,152-156</sup> Clinicians have shown high fidelity to manual-based interventions.<sup>157,158</sup> 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.<sup>152,155</sup>

Most teletherapy studies with young people are descriptive, indicating that teletherapy is feasible, acceptable, and well tolerated.<sup>69,159</sup> 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.<sup>20,46,65,69,160</sup> Several randomized trials are noteworthy. Nelson *et al*<sup>20</sup> found comparable decreases for childhood depressive symptoms treated with 8 sessions of cognitive-behavioral therapy delivered through ITV versus in person. Storch *et al*.<sup>21</sup> 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.<sup>22</sup> Two pre- to post-intervention outcome studies have suggested the benefit of treatment delivered through ITV including behavior management training<sup>24,25</sup> and consultation to PCPs in the psychiatric care of young patients.<sup>29</sup> Five small randomized trials have demonstrated potential effectiveness of providing family or parenting interventions through ITV.<sup>24,25,27,49,99</sup>

*Consultation and Psychosomatic Care.* Teleconsultation to PCPs concerning mental health care of patients with medical illness is well established for adults.<sup>36,62</sup> Teleconsultation regarding the behavioral and mental health care of children with medical conditions<sup>42,161</sup> developmental disorders<sup>42</sup> and special needs<sup>162</sup> is emerging. The preliminary evidence supports the feasibility and acceptability of providing behavioral interventions through ITV for conditions such as feeding disorders<sup>53</sup> diabetes,<sup>58,59</sup> and obesity.<sup>54,57,60</sup> Given the paucity of child mental health specialists<sup>4,12,13,163</sup> and the development of the pediatric medical home<sup>3,93,164</sup> 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.<sup>165,166</sup> 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 personnel.<sup>96,120</sup> School-based telepsychiatry services have demonstrated benefit for students and staff.<sup>96,97,123,167</sup>

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.<sup>97,168</sup> 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<sup>112</sup> 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.<sup>97</sup> 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.<sup>169</sup> Informed consent should consist of the legal guardian and the patient (if older than the age of

majority).<sup>96,105,148</sup> The consent process should be conducted by the psychiatrist with the patient and guardian in real time according to local, regional, and national laws<sup>79</sup> 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.<sup>170</sup> Correctional programs that lack access to psychiatric services are increasingly obtaining services through ITV.<sup>98,171</sup>

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.<sup>130</sup> Preliminary work suggests that home-based teletherapy with youth and families is feasible, acceptable, and effective<sup>99,100,149</sup> 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.<sup>26,100</sup>

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<sup>130</sup> 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.<sup>26</sup>

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.<sup>18,19,79</sup> 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<sup>172</sup> 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<sup>173</sup>: 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.<sup>174-176</sup> 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.<sup>101,177-182</sup> Godleski *et al.*<sup>183</sup> 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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