Development of United States Guidelines for the Diagnosis and Treatment of Adults With ADHD

Lenard A. Adler, MD

In this issue of *Psychiatric Annals*, we will present four articles summarizing issues in the development of United States (US) guidelines for the diagnosis and treatment of adults with attention-deficit/hyperactivity disorder (ADHD). The American Professional Society of ADHD (APSARD) is currently in the process of developing such guidelines, which will be the first such recommendations for US clinicians treating adults with the disorder.[1] Of note, there are multiple US guidelines for childhood ADHD, including those from the American Academy of Child and Adolescent Psychiatry (AACAP)[2] and the American Academy of Pediatrics (AAP).[3] Multiple international organizations have developed guidelines for the diagnosis and treatment of ADHD, including adult ADHD, such as the National Institute for Health and Care Excellence (NICE; United Kingdom)[4] and the Australian ADHD Professionals Association (AADPA).[5] These guidelines outside the US particularly highlight the need for guidelines for adults in the US. Furthermore, such guidelines are important for both patients and clinicians as: (1) adult ADHD is often undiagnosed and untreated, at significant cost to the patient and to society; and (2) the guidelines will provide the latest evidence available to clinicians caring for patients with adult ADHD so that they and their patients can make the most informed decisions.[1]

This issue starts with an article by Dr. Deepti Anbarasan and colleagues that reviews the development of quality measures for adult ADHD as a step along the way toward creating guidelines.[6] Dr. David Goodman and Dr. Greg Mattingly then discuss the process of guideline development in the second article.[7] The third article, by Dr. Thomas J. Spencer and colleagues, describes the process of conflict-of-interest management in the development of adult ADHD guidelines.[8] The issue concludes with an article from Dr. Ann Childress and colleagues on the importance of the development of US guidelines for the diagnosis and treatment of adult ADHD.[9]

I hope that you find this issue both helpful and informative.

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From the Department of Psychiatry and Department of Child and Adolescent Psychiatry, New York University Grossman School of Medicine, New York, New York.

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Address correspondence to Lenard A. Adler, MD, Department of Psychiatry, NYU Grossman School of Medicine, One Park Avenue, 8th Floor, New York, NY 10016; email: lenard.adler@nyulangone.org.

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Update on Identifying and Evaluating Quality Measures for Adult Attention-Deficit/Hyperactivity Disorder

Deepti Anbarasan, MD; Stephen V. Faraone, PhD; Lenard A. Adler, MD

ABSTRACT

The limited recognition and treatment of attention-deficit/hyperactivity disorder (ADHD) in adults has been studied in the research setting and addressed in the clinical education setting during recent years. Despite these efforts, health care professionals continue to struggle with the management of adult ADHD in everyday practice. To better evaluate and measure meaningful practice metrics, a set of 10 key quality measures (QMs) that can help improve health care outcomes in adult ADHD was identified using a combination of evidence-based literature reviews and expert consensus. Subsequently, these QMs were field-tested in a sample of 71,310 adult ADHD patients in the primary care setting and behavioral health clinics over the course of a decade to assess whether these measures were attained. The results allowed us to understand how the clinician approach to diagnosing and treating ADHD has evolved in the past few years and highlighted the ongoing challenges in practice variation by clinicians caring for patients with adult ADHD. In turn, this information also guides our understanding of the next steps needed to improve the quality of care provided to adults with ADHD in different care settings. Accordingly, the American Professional Society of ADHD and Related Disorders (APSARD) assembled a guidelines committee to create a set of clinical practice guidelines to provide practitioners with a standardized, evidence-based approach to diagnosing and treating ADHD in adults.
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From the Department of Neurology and Psychiatry, New York University Grossman School of Medicine, New York, New York (DA), the Department of Psychiatry and Neuroscience and Physiology, SUNY Upstate Medical University, Syracuse, New York (SVF), and the Departments of Psychiatry and Child and Adolescent Psychiatry, New York University Grossman School of Medicine, New York, New York (LAA).

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Address correspondence to Deepti Anbarasan, MD, NYU Grossman School of Medicine, One Park Avenue, 8th Floor, Room 8-209, New York, New York 10016; email: deepti.anbarasan@nyulangone.org.

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Though attention-deficit/hyperactivity disorder (ADHD) is a childhood-onset neurobiological disorder seen in about 4.4% of adults, only a minority of adults with ADHD are recognized and engaged in treatment.[1] In fact, the treatment rate for adults with ADHD in 2005 was 18% of the treatment rate for children, well below the expected 33% to 66% range expected based on the prevalence estimates of the condition.[2] Significant functional impairments are associated with adult ADHD including those related to secondary comorbid mood and substance use disorders, accidents including associated injuries, academic and work impairments, and early mortality.[3] From the societal standpoint, the loss of workforce productivity associated with ADHD in the United States (US) is estimated to be between $67 billion and $116 billion annually.[4]

A major challenge contributing to the undertreatment of adult ADHD has been the limited recognition of and comfort level with the condition by health care professionals. Accordingly, significant efforts have been made to disseminate knowledge in the general medical community about the prevalence and symptoms of adult ADHD and to improve the accessibility of available brief, validated screening instruments for adult ADHD.[5] Despite these strides, significant barriers to treating ADHD have remained in the primary care setting, including the need for ongoing education, misconceptions and stigma, constraints with adult ADHD management and treatment, and the need for a multidisciplinary approach.[6] Primary care physicians (PCPs) were also noted to more frequently refer ADHD patients to specialists for treatment, to more frequently prescribe short-acting stimulants once daily than psychiatrists, and to screen for ADHD in patients less frequently than for mood or anxiety disorders.[7] The investigators of this study concluded that PCPs found it more challenging to implement optimal treatment interventions for ADHD than other diagnoses.

These observations led to the recent creation of quality measures (QMs) for adult ADHD. QMs allow for quantitative evaluations of health care procedures and patient outcomes with the goal of achieving high-quality health care delivery. QMs identify clinician behaviors that lead to improved health care outcomes. They standardize health care delivery with the goal of improving patient safety and treatment, and they can help guide clinicians in following the most essential practices that can be documented with objective measures. In this article, we will review the process in which key QMs for the screening, diagnosis, and treatment of adult ADHD were identified and subsequently evaluated in the primary care setting. The QM implementation process also highlighted the significant need for clinical guidelines in adult ADHD to improve understanding and standardize care by practitioners caring for these patients.

IDENTIFICATION OF QUALITY MEASURES FOR ADULT ADHD

Quality measures are ratios of objective measures that are typically generated using a combination of expert opinion and review of evidenced-based literature. These measures are used by entities like the US Agency for Healthcare Research and Quality (AHRQ), Medicare, and Medicaid to help with quality monitoring and even determining reimbursement rates for services.[8] Quality measures focus on the following four domains of health care delivery: (1) systems-level factors that influence care; (2) health care provider behaviors; (3) intermediate patient outcomes; (4) achievement of ultimate desired patient outcomes.[9] Of note, QMs are distinguished from practice guidelines, which are more detailed and comprehensive algorithms for the management of clinical disorders in a standardized manner. Quality measures evaluate the most important clinical practices that can be objectively measured. To identify QMs for the screening, diagnosis, and treatment of adult ADHD that met the standards of the AHRQ, a group of expert leaders in the field of ADHD launched the Adult ADHD Quality Measures Initiative (AAQMI).[10]

The AAQMI used a four-stage process to identify potential QMs for the evaluation of adult ADHD health care delivery practices.[10] The first stage was a comprehensive literature review to identify prior work on quality indicators or practice guidelines for the diagnosis and treatment of adult ADHD. The literature search identified 343 potentially useful articles. Though 18 articles that addressed QMs for ADHD in childhood were identified, there were no papers on QMs for ADHD in adults. As part of the second stage, a multidisciplinary group of experts from child and adolescent psychiatry, adult psychiatry, psychology, and adult primary care brainstormed QMs regarding adult ADHD for the areas of screening, diagnosis, treatment initiation, treatment follow-up, care coordination, and the patient experience. The group generated 15 potential QMs for treatment initiation, 11 for treatment follow-up, seven for diagnosis, six for care coordination, six for patient experience, and three for screening. During the third stage, the AAQMI compared the set of 46 QMs generated by the panel to existing clinical guidelines for adult ADHD to ensure that all potential QMs were generated. Seventeen articles were identified as addressing practice guidelines for ADHD in adults. The guidelines from these articles were closely evaluated by select committee members, though it was decided that the proposed QM list did not require updating. During the final stage, 28 ADHD experts completed an internet-based survey to rate the im-

Table 1

Top 10 Adult ADHD Quality Measures

Screening
1. % high-risk patients screened (eg, depressed patients, family history of ADHD)
Diagnosis
2. % patients treated for ADHD having documented *DSM-5* diagnosis of ADHD
3. % patients with ADHD with review of other psychiatric disorders
4. % patients with ADHD with documentation of impairment
Treatment initiation
5. % patients receiving ADHD medications for whom treatment alternatives, benefits, and risks have been discussed
6. % patients with ADHD assessed for vitals prior to medication treatment
7. % patients with ADHD for whom warnings and contraindications for medication have been reviewed
Treatment follow-up
8. % patients with ADHD where validated measure of symptom change has been used to assess treatment efficacy at least annually
9. % patients stabilized on an ADHD medication seen at least once per year
10. % patients prescribed medication for ADHD seen within 1 month of initial prescription

Note: Adapted with permission from Faraone et al., The Adult ADHD Quality Measures Initiative, J Atten Disord, 2019.[10]
ADHD = attention-deficit/hyperactivity disorder; DSM-5 = The Diagnostic and Statistical Manual of Mental Disorders, fifth edition

portance, reliability, validity, feasibility, and usability of the final proposed QMs based on the criteria determined by the National Quality Forum. Though all the QMs were highly rated, the aggregated responses led to the generation of a Top 10 QMs list **(Table 1)** based on the measures that were consistently highly rated across raters and domains. These 10 QMs were felt to be most useful in monitoring health care delivery in both primary care and specialty care settings.

The 10 QMs did not include any metrics that addressed the domains of patient experience or care coordination, though this aligned with the findings from the existing literature review, which did not identify guidelines for adult ADHD for these two domains. The Top 10 QMs list focuses on screening, diagnosis, and treatment of ADHD. The QMs that focus on diagnosis indicate that the AAQMI strongly considered how best to limit the possibility of false positive diagnoses of ADHD. The treatment initiation metrics focus on the assessment and management of potential adverse events that can occur with medication initiation for ADHD. The metrics on treatment follow-up focus on the clinicians ensuring that adequate follow-up is provided for serial monitoring and to evaluate treatment efficacy using a validated tool at least annually.

In their assessment of the Top 10 QMs, the AAQMI acknowledged that the nonpharmacological treatments for ADHD were only referenced in the QM when measuring the percentage of patients receiving ADHD medications for whom treatment alternatives were discussed.[10] The committee opined that this reflected concerns surrounding the limited accessibility of alternative treatments like cognitive-behavioral therapy, the limited evidence base for validated treatment effects of nonpharmacological treatments for adult ADHD, and the limited experience with these relatively newer treatment modalities.

EVALUATION OF QUALITY MEASURES FOR ADULT ADHD IN CLINICAL PRACTICE

After identifying the Top 10 QMs, the next phase involved field testing those QMs in clinical practice. As such, these 10 QMs were assessed in the electronic health records (EHR) of adult ADHD patients from primary care and behavioral health clinics in the US.[10,11] The investigators of this endeavor sought to answer three primary questions by evaluating the QM findings: (1) What is the level of care quality for ADHD in adults in the US?; (2) Has quality care for adults with ADHD improved during the past decade?; (3) Are there health care disparities by race, ethnicity, or sex?

Four million patient records from the DARTNet (Distributed Ambulatory Research in Therapeutics Network) Institute's Primary Care Practice Performance Registry that contained all coded, de-identified information including demographics, diagnosis codes, procedure codes, and medications for all historical data (up to 15 years prior) of the patients through December 2020 were obtained. Selected for inclusion in the evaluation were 71,310 adult patients diagnosed with ADHD in the medical record. Demographically, 57.0% of the adult ADHD patients were women, 92.2% were White, and 95.1% were

non-Hispanic/non-Latinx. The largest proportion of visits occurred in 2017 (13.5%), 2018 (14.8%), 2019 (15.6%), and 2020 (13.1%).

The authors noted that the first QM, which evaluates the percentage of high-risk patients screened, could not be assessed in the retrospective analysis due to the necessary data being unavailable for extraction. About 51.4% of cases of diagnosed adult ADHD were noted to not achieve any QMs in 2010, while nearly 95.5% of cases had achieved two or more QMs by 2020. Overall, the mean number of QMs achieved increased from 1.2 (± 1.5) QMs in 2010 to 2.4 (± 1.0) in 2020, which is a statistically significant increase ($P < 0.001$). Despite the observed increase of QM attainment over 10 years, no cases achieved more than six QMs annually during the study period. The study also identified that five of the 10 QMs were frequently overlooked, including two metrics that could lead to adverse medicolegal consequences when poorly documented, specifically whether vitals were evaluated prior to treatment initiation and whether warnings or contraindications of medications had been discussed. Even in 2020, the final year in the monitoring period, only 40% or less of records achieved even one the five identified QMs of treatment alternatives over the year. These observations indicat the need for increased efforts to improve the management of ADHD in adult patients, particularly in the primary care setting.

Small but statistically significant effects for sex, race, and ethnicity were identified when evaluating for the achievement of three or more QMs. Three or more QMs were achieved in the cases of 32% of 199,429 female patients versus 29.5% of 141,396 male patients, 32.2% of 248,272 White patients versus 31.3% of 18,689 non-White patients, and 32.3% of 237,027 non-Hispanic patients versus 30.5% of 11,204 Hispanic patients. The stratified analysis also indicated that the EHR documentation of female patients was less thorough than those of male patients. These findings, particularly when also considering prior studies that have shown that ADHD symptoms are underrecognized and undertreated in women and racial minorities, highlighted the need for more attention to be paid to improving quality initiatives for management of ADHD in these populations and to reducing health care disparities.

An interesting and somewhat surprising finding was that clinicians in behavioral health settings were not attaining more QMs in their documentation when compared to clinicians in primary care settings. In fact, the mean number of QMs attained in primary care settings was greater than the mean QMs attained in behavioral health settings from 2010 to 2012 and was not significantly different from 2013 to 2020. The investigators highlighted that efforts to improve high-quality care thus need to be focused universally and not just in primary care settings.

Attainment of the two QMs that focused on documentation, namely the QMs about discussing treatment alternatives and warnings and contraindications, did not show much improvement over the studied time period, while the other QMs that directly impacted assessment and treatment showed more improvement over that time. The authors postulated that this may be related to clinicians viewing the two QMs relating to documentation as less essential to complete, as this may not directly impact the clinical outcome, and may be burdensome. As such, even when they may have counseled the patients, clinicians may not document that they had these conversations. This finding indicated that future educational endeavors should focus on the importance of documenting all QMs to ensure high-quality care to patients with adult ADHD.

FUTURE DIRECTIONS

The identification of QMs for the assessment and treatment of adult ADHD was an important step taken towards standardizing metrics to assess the adequacy of health care delivery for managing this disorder in clinical practice. Evaluation of the QMs in primary care by retrospective implementation of the metrics revealed that quality care for patients with adult ADHD has been improving in the past 10 years, although significant gaps remain when it comes to the attainment of specific QMs. These identified variations in practice can guide future research on shaping clinician behaviors in terms of prioritizing information and making practice changes that ultimately enhance patient care, quality, and safety. Training efforts to inform PCPs about high-quality care for adult ADHD should be continued via both graduate medical education and continuing medical education avenues. These educational initiatives should also specifically address the presence of current health care disparities with the short-term goal of improving awareness and the long-term goal of eliminating these gaps.

The experience from field testing the QMs highlighted the need for clinical practice guidelines for diagnosing and managing adult ADHD, which would provide more comprehensive algorithms for the screening, diagnosis, and treatment of this neurobiological disorder. Accordingly, the American Professional Society of ADHD and Related Disorders (APSARD) has assembled a guidelines committee that includes about 30 experts in adult ADHD to create a set of practice guidelines to provide clinicians with a standardized, evidence-based approach to identifying and managing ADHD in adults.[12] These guidelines are projected to be completed and made available for use in 2023.

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Practice Guidelines Development: The APSARD United States Guidelines for the Diagnosis and Treatment of ADHD in Adults

David W. Goodman, MD; Greg Mattingly, MD

ABSTRACT

Attention-deficit/hyperactivity disorder (ADHD) is a common neuropsychiatric disorder arising in children that persists in many people for the remainder of their lives. While several diagnostic and treatment guidelines in the United States (US) have been developed for childhood ADHD, no guidelines have been published in the US for adults with ADHD. With the increase of care seeking by adults with ADHD accompanied by increasing ADHD medication prescriptions in the past few years, the American Professional Society for ADHD and Related Disorders Association (APSARD) has recognized the need for diagnostic and treatment guidelines for the US. The development of clinical practice guidelines follows a rigorous scientific process of literature review, conflict of interest management, levels of participation of the working group members, clinical recommendations based on published research, a ranking of the quality of data, and a Delphi process to evaluate the rank order of clinical recommendations with little published research available. The Institute of Medicine (now The National Academy of Medicine) and the American Psychiatric Association have established protocols for each of the aforementioned phases of the manuscript development. This article reviews this process in detail and conveys the complexity of the endeavor. **[*Psychiatr Ann*. 2023;53(10):449-454.]**

Attention-deficit/hyperactivity disorder (ADHD) is the most prevalent neurodevelopmental psychiatric disorder in children and the second most prevalent in adults.[1,2] It manifests as symptoms in childhood or early adolescence and continues with chronic symptoms and impairments over the lifespan of most patients. Several studies have demonstrated that the persistence of ADHD into adulthood ranges between 60% and 90%[3,4] Herita-

From the Department of Psychiatry and Behavioral Sciences, The Johns Hopkins University School of Medicine, Baltimore, Maryland (DWG), Department of Psychiatry, Norton College of Medicine, SUNY Upstate Medical University, Syracuse, New York (DWG), Washington University School of Medicine, St. Louis, Missouri (GM), and Midwest Research Group, St. Louis, Missouri (GM).

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Address correspondence to David W. Goodman, MD, Johns Hopkins at Green Spring Station, 2360 W. Joppa Road, Ste. 223, Baltimore, MD 21093; email: dgoodma4@jhmi.edu.

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bility accounts for 75% of the contribution, and environmental factors are also to be considered.[3] The economic burden of ADHD in the United States (US) is $143 to $266 billion, with adults accounting for the bulk of the costs ($105 to $194 billion).[5]

The *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition, text revision (*DSM 5-TR*) published in 2022 specifically updated the descriptors for adult symptoms. Although several international organizations have published diagnosis and treatment guidelines for adult ADHD[6-11] after decades of worldwide research, there have been no adult ADHD clinical practice guidelines (CPGs) published in the US. While most clinicians are familiar with ADHD in childhood and early adolescence, formal training on ADHD in adults is sorely lacking in many US clinical training programs for psychiatric residents, psychology graduate students, nurse practitioners, physician assistants, and clinical social workers. The absence of formal adult ADHD training has left clinicians often uneducated, misinformed, and unsure about the optimal medical and psychological services provision. This has led to patient frustration when looking for clinicians familiar with adult ADHD diagnosis and treatment.

The publication of CPGs for adult ADHD in the US would serve several benefits.

1. CPGs would establish the basic clinical standard of care for the clinical evaluation and treatment options. This standardization would help patients with ADHD receive a more uniform diagnostic and treatment approach across the US. It is important to understand that CPGs are guidelines that remain flexible to individual patient presentation and clinical judgement.
2. CPGs would provide guidance to clinicians in screening, diagnosing, and treating these patients. Because these CPGs cannot account for every variable in a patient presentation, clinical judgment remains paramount.
3. CPGs would elevate the validity of ADHD in adults for training programs. Hopefully, this would inspire the incorporation of adult ADHD topics into training curricula.
4. CPGs may provide structure for third-party payers regarding coverage of medical benefits for evaluation and treatment for adult ADHD. CPGs would likely lead to modification of coverage policies.
5. CPGs may impact medicolegal considerations regarding adult ADHD care. In the Wit v United Behavioral Health (UBH) 2019 court decision, the US District Court for the Northern District of California found that treatment guidelines developed by a medical society were reliable and reflected generally accepted standards of care.[12,13] (Therefore, "the standard of care" is a legal definition.) However, in March 2022, the US Ninth Circuit Court of Appeals reversed the District Court's order arguing that it is "not unreasonable" for the insurers to determine coverage inconsistently with generally accepted standards of care. In January 2023, the same Appeals Court corrected the previous ruling that despite UBH's breach of its fiduciary responsibility by establishing medical necessity criteria prioritizing its self-interest over plan members', as well as violating the laws of four states, over 50,000 individuals who were denied mental health or addiction coverage are not entitled to have their claims reevaluated. Yet in August 2023, the same court nullified the January 2023 ruling and affirmed that the plaintiffs in the case indeed have the legal standing to pursue their claims and rejects the district court's determination that UBH's care utilization review guidelines must align entirely with generally accepted standards of care.
6. The iterations of court decisions seem to convey the distinction between a medical standard of care established by CPGs and the legal interpretation of its enforceability upon commercial medical entities. Therefore, we as clinicians should be mindful that best clinical practice may not receive insurance coverage. Clinicians, patients, and policy makers can use CPGs as the parameters for delivering optimal clinical care. Guidelines are based on literature review and a consensus of experts in the associated field. CPGs make recommendations based on a population of patients while offering flexibility to the clinician to individualize care to each patient's circumstance.[14-16]

PROCESS FOR THE DEVELOPMENT OF CPGS

CPGs in any medical specialty are frequently developed within the parameters of the Institute of Medicine (IOM).[17] The IOM, as a health component of the US National Academy of Sciences, is an independent nonprofit nongovernmental organization. It aims to answer health and health care related questions posed by the government and the private sector in order to provide unbiased advice to health care decision makers and the general public. It is generally perceived as an unbiased and nonconflicted authoritative body of experts.

On July 1, 2023, the IOM changed its name to The National Academy of Medicine.[17] In their "Clinical practice guidelines we can trust" publication, "recommendations (are) intended to optimize patient care that are informed by systematic review of evidence and an assessment of the benefits and harms of alternative care options." They note that CPGs "need to be trustworthy."

Trustworthiness is operationally defined such that CPGs should:

1. Be based on a systematic review of the existing evidence

2. Be developed by a knowledgeable, multidisciplinary panel of experts and representatives from key affected groups
3. Consider important patient subgroups and patient preferences as appropriate
4. Be based on an explicit and transparent process that minimizes distortions, biases, and conflicts of interest
5. Provide a clear explanation of the logical relationships between alternative care options and health outcomes, and provide ratings of both the quality of evidence and the strength of the recommendations
6. Be reconsidered and revised as appropriate when important new evidence warrants modification of the recommendations.

Experts and representatives involved in this process need to have potential conflicts of interest reviewed. Such potential conflicts are not, in and of themselves, a disqualifying factor to participating in a guideline development group developing CPGs. The IOM stipulated "the most knowledgeable individuals regarding subject matter addressed by a CPG, are frequently conflicted. These experts often possess unique insight into the guideline relevant content domains." Experts "may be aware of relevant information about study design and conduct that is not easily identified." Therefore, the IOM attempted to find a balance between bias/influence and the insight of clinical and research experts.

CPGs recommendations will incorporate a broad range of knowledge sources. After the review of literature is complete, it is segmented by quality of data and then graded on the strengths of the research evidence.

Research evidence is segmented into five categories of evidence quality:

A. Well-designed RCTs or diagnostic studies on relevant population

B. RCTs or diagnostic studies with minor limitations; overwhelmingly consistent evidence for observational studies

C. Observational studies (case-control and cohort design)

D. Expert opinion, case reports, reasoning from first principles

X. Exceptional situations where validating studies cannot be performed and there is a clear preponderance of benefit or harm.

Each CPG recommendation is then graded as a strong recommendation, recommendation, or optional comment based on the preponderance of benefit or harm.[17]

GRADING RECOMMENDATION STRENGTHS

In the absence of adequate research, clinical recommendations by consensus are developed. These individual clinical items then undergo a Delphi method in order to prioritize the clinical recommendations and reach an expert consensus.[18] The consensus clinical recommendations are then graded on the strength of each recommendation.

The Delphi method is a research technique that involves using a series of questionnaires or surveys to gather opinions from a group of experts in a particular field of topic. This method is commonly used in situations where there is uncertainty or lack of agreement about a particular issue, and it aims to reach a consensus or forecast about the issue by collecting and analyzing the expert opinions.

The Delphi method typically involves the following steps.

1. Identifying the research question: The first step in the Delphi method is to identify the research question or problem that needs to be addressed.
2. Selecting the expert panel: A group of experts in the relevant field or topic is then selected to participate in the Delphi process. The experts may be identified through a literature search, referrals, or other means.
3. Conducting the first round of surveys: In the first round of surveys, the experts are asked to provide their opinions on the research question. This may involve open-ended questions, rating scales, or other types of questions.
4. Analyzing the results: The responses from the first round of surveys are analyzed to identify areas of agreement and disagreement among the experts.
5. Conducting subsequent rounds of surveys: Based on the analysis of the first round of surveys, additional rounds of surveys may be conducted to further refine the consensus or forecast. The experts are provided with feedback on their own and others' responses and are given the opportunity to revise their answers.
6. Reaching a consensus: The Delphi process continues until a consensus is reached among the expert panel.
7. The Delphi method has several advantages, including its ability to collect and analyze expert opinions on complex and uncertain issues, and its potential to generate more accurate forecasts than individual expert opinions. However, it also has limitations, such as the potential for bias in the selection of experts and the possibility of groupthink or conformity bias among the expert panel.

According to the IOM, each recommendation must provide:

1. A summary of relevant available evidence, and description of quality, quantity, and consistency of the aggregate available evidence
2. A clear description of potential benefits and harms
3. An explanation of the part played by the values, opinion, theory, and clinical experience in deriving the recommendation
4. A description of any differences of opinion regarding the recommendation

5. A rating of the level of confidence in the evidence
6. A rating of the strength of the recommendation.

Once the final draft is completed, the CPGs need an external review. The external reviewers will comprise a full spectrum of relevant stakeholders, including scientific and clinical experts, organizations, and agencies. The authorship of the external review will be kept confidential unless protection has been waived. The guideline development group should consider all external reviewer comments and keep a written record of the rationale for modifying or not modifying a CPG in response to the reviewers' comments. And lastly, a draft of the CPGs prior to final publication will be made available to the general public for comment.

The external reviewers may use the Appraisal of Guidelines for Research and Evaluation II (AGREE-II), which allows researchers to systematically review the quality of the CPGs. The instrument consists of 23 items covering six areas (scope and purpose, stakeholder involvement, rigor of development, clarity of presentation, applicability, ie, barriers to implementation, and editorial independence, including managing conflicts of interest) that are rated on a seven-point Likert scale.[13,19]

Given that a CPG is an evolving document, the CPG publication date, date of systematic evidence reviews, and proposed date for future review should be documented in the CPG. Literature should be monitored to identify the emergence of new, potentially relevant evidence, and to evaluate the continued validity of the clinical practice guidelines. CPGs should be updated when new evidence suggests the need.

APA DEVELOPMENT PROCESS FOR PRACTICE GUIDELINES

CPGs to address psychiatric illnesses are subject to the parameters recommended by the American Psychiatric Association (APA). (Development Process for Practice Guidelines of the American Psychiatric Association — revised November 2020.) The APA's development process recommends eight parameters.[20]

1. Guidelines are organized around clinical questions, which may be in PICO(TS) format (population, intervention, comparison, outcome, and, when applicable, timing and setting).
2. Subject matter experts from multiple disciplines and patient/family advocates provide input.
3. Guideline statements are separately rated according to strength of supporting research evidence and the strength of the recommendation.
4. Strength of the supporting research is determined through systematic review of the evidence, determinations of the risk of bias of individual studies, and assessment of overall quality of the body of research evidence.
5. In the absence of high-quality research evidence, the APA has chosen to use expert opinion as determined by formal survey of large panels of research and clinical experts (Delphi method).
6. Consensus about guideline statements and rating is determined by the modified Delphi method through blind iterative voting.
7. Guidelines are published as sets of recommendations or suggestions, each addressing a clinical question or related set of clinical questions.
8. Literature searches are conducted on a regular basis after publication of the guideline, updating guideline statements and text as needed to maintain all guidelines as current.

While the above parameters are clear, there are operational and logistical issues in assembling the constituents of a guideline development group. The appointment of the guideline development group should be well balanced with respect to expertise, geographical location, and demographic background. An ongoing review of disclosure of potential financial conflicts of interest by members occurs on appointment, during development, and upon publication. Limits are set on the participation of individuals with potential conflicts of interest, which may be, eg, significant financial relationship with a company in the disease state. Upon completion of the CPGs, the guidelines development group along with its professional organization may request a review by the APA for the consideration of endorsement and adoption. The APA's review process involves several committees, the APA Assembly, and the APA's Board of Trustees.

QUALITY MEASURES FOR CLINICAL PRACTICE

Quality measures are a precursor to the development of CPGs, which are then an amalgam of evidence-based medicine. Quality measures cover specific key aspects of clinical practice that can be documented for the basis of quality care and tracking the most essential features of health care delivery. A good quality measure also has the element of clinical employability. Ideally, the clinician will see the clinical utility of the quality measure and employ it in patient care; no undue administrative burden for clinicians will diminish the measure's employability; and the quality measure will be incorporated into electronic medical records.

While some quality measures may be desirable for patient care, they may not be employed because the clinician sees little utility in its contribution in patient care or the administrative burden is too cumbersome to institute. An example of high clinical utility with low administrative burden is vital signs monitoring. An example of low clinical utility with high administrative burden would be documentation for medicolegal or data collection reasons that contributes little to direct patient care.

Quality measures can be evaluated on five domains: [3]

1. Importance: the degree to which measures are evidence-based and would yield substantial gains in healthcare quality
2. Reliability and validity: the degree to which quality measures are consistently applied and credibly associated with quality healthcare
3. Validity: the degree to which the quality measure is specified in a manner that captures the target population and clinical behaviors supported by the evidence base
4. Feasibility: the degree to which the quality measures can be captured without undue burden
5. Usability: the degree to which the quality measures would be used.

Faraone and colleagues discussed the process of selecting 10 quality measures that were extracted from an initial group of 46 quality measures developed by 28 ADHD experts in a brainstorming session.[3] Those 10 quality measures were then used to investigate the change in clinical practice over the course of 11 years (2010 to 2020) using electronic health records from primary care and behavioral health clinics that included 71,310 patients diagnosed with ADHD **(Table 1)**.

Table 1

Top 10 Adult ADHD Quality Measures

Screening
1. % high-risk patients screened (eg, depressed patients, family history of ADHD
Diagnosis
2. % patients treated for ADHD having documented DSM-5 diagnosis of ADHD
3. % patients with ADHD with review of other psychiatric disorders
4. % patients with ADHD with documentation of impairment
Treatment initiation
5. % patients receiving ADHD medications for whom treatment alternatives, benefits and risks have been discusses
6. % patients with ADHD assessed for vitals prior to medication treatment
7. % patients with ADHD for whom warnings and contraindications for medication were reviewed
Treatment follow-up
8. % patients with ADHD where validated measure of symptom change used to assess treatment efficacy at least annually
9. % patients stabilized on an ADHD medication seen at least once per year
10. % patients prescribed medication for ADHD seen within 1 month of initial prescription

Note: Adapted with permission from Faraone et al., The Adult ADHD Quality Measures Initiative, J Atten Disord, 2019.[3]
ADHD = attention-deficit/hyperactivity disorder; DSM-5 = The Diagnostic and Statistical Manual of Mental Disorders, fifth edition

Of the 10 quality measures for clinician care over 11 years, eight increased in use, one showed no change in use (% patients with ADHD for whom warnings and contraindications for medication were reviewed), and one showed a mild decline in usage (% patients with ADHD where a validated measure of symptom change was used to assess treatment efficacy at least annually).[21] The increase, decrease, or no change in frequency of each quality measure provides insight into the clinical utility and employability of CPGs. This study demonstrates that, while CGPs may be recommended, clinicians will ultimately decide whether they are implemented in their practice. Presumably, they are considering the five domains of importance, reliability, validity, feasibility, and usability.

APSARD CLINICAL PRACTICE ADULT ADHD GUIDELINE DEVELOPMENT

The American Professional Society for ADHD and Related Disorders (APSARD) has taken the initiative to develop and publish *US Guidelines for the Diagnosis and Treatment of ADHD in Adults*. A task force has been constituted to include national and international clinical and research experts in ADHD. In addition, representatives from major medical and professional associations will participate. The Task Force, adhering to the APA and IOM guidelines, is composed of professionals with broad educational training and professional degrees, patient and advocate representatives, and stakeholders in the ADHD ecosystem. A conflict-of-interest process management policy has been developed in accordance with APA and IOM guidelines. All participating task force members will submit disclosure statements that will be reviewed by a Steering Committee composed of five senior researchers and clinicians.

The publication of *US Guidelines for the Diagnosis and Treatment of ADHD in Adults* will promote enhanced validity in the diagnosis and treatment of adult ADHD. For clinical purposes, guidelines will establish a foundation

for the standard of care and encourage clinicians to integrate these parameters into their patient care. For educational purposes, these guidelines will encourage more training about adult ADHD in formal professional training programs.

Public awareness will also be enhanced through educational programs and heightened media coverage. For policy purposes, it is hoped that this publication will become the impetus for policies that increase access and health care participation for patients with ADHD and their families. Policy changes will be enhanced in several areas: college student health services, insurance policy coverage, human resources, funding sources for mental health, and legislative policies.

The development and publication of the APSARD adult ADHD CPGs will significantly contribute to training, education, and clinical skills. Most importantly, these CPGs will enhance the consistent diagnosis and treatment of adults with ADHD across the US to help overcome disparities in access and care across the country.

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Conflict of Interest Management in Adult Attention-Deficit/ Hyperactivity Disorder Clinical Practice Guidelines

Thomas J. Spencer, MD; Olivia Descorbeth, BA; Frances R. Levin, MD

ABSTRACT

Clinical practice guidelines (CPGs) require skilled contributors who may have conflicts of interest (COI) that need to be assessed and managed to minimize possible biased influence. Different organizations have unique COI management policies depending on their available expertise, circumstances, and judgment. To inform the development of the American Professional Society of ADHD and Related Disorders (APSARD) COI management procedures, we reviewed the literature. Because there are no CPGs for adult attention-deficit/hyperactivity disorder (ADHD) in the United States, we reviewed COI management policies of related CPGs with a focus on ADHD. There were many common elements, including matching levels of permitted involvement with type of COI. Examples included withdrawals from industry activities and limitations on participation in discussions, deliberations, and/or voting on specific matters. Due to the complexities of COIs, it is impossible to fully operationalize COI management. Ultimately, management of COIs is determined after review by the co-chairs and steering committee in discussion with the task force member. **[*Psychiatr Ann*. 2023;53(10):455-460.]**

Clinical practice guidelines (CPGs) require skilled contributors. However, the most knowledgeable individuals are frequently conflicted. Conflicts of interest (COI) may bias their opinions. COI management policies address the assessment and management of COIs to minimize possible biased influence. A variety of COI management solutions exist depending on the available expertise, circumstances, and judgement for each topic and organization. We reviewed differing COI management policies and procedures employed for CPG development across diverse organizations, with a primary focus on attention-deficit/

From the Department of Psychiatry, Pediatric Psychopharmacology, Massachusetts General Hospital (MGH), Boston, Massachusetts (TJS), Harvard Medical School, Boston, Massachusetts (TJS), NYU Grossman School of Medicine, New York, New York (OD), the Division on Substance Use Disorders, New York State Psychiatric Institute, College of Physicians and Surgeons, Columbia University, New York, New York (FRL), and the Department of Psychiatry, College of Physicians and Surgeons, Columbia University, New York, New York (FRL).

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Address correspondence to Thomas J. Spencer, MD, MGH Yawkey Outpatient Care Center, 55 Fruit Street, Suite 6A, Boston, MA 02114; email: tspencer@mgh.harvard.edu.

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hyperactivity disorder (ADHD). Finally, we present the American Professional Society of ADHD and Related Disorders (APSARD) COI management procedures, informed by the updated review, for the APSARD Adult ADHD CPG initiative.

The Institute of Medicine (IOM), now the National Academy of Medicine (NAM) as of 2023, produced the foundational reference document for CPGs,[1] called IOM (2011), with CPGs defined therein as:

> …statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options.

Further:

> The new definition provides a clear distinction between the term "CPG" and other forms of clinical guidance derived from widely disparate development processes (e.g., consensus statements, expert advice, and appropriate use criteria).
> Clinicians can no longer stay abreast of the rapidly expanding knowledge bases related to health ... At the same time… clinician experiential knowledge and skill (the "art of medicine") and patient values and preferences remain essential contributors to quality healthcare practice… Clinical practice guidelines (CPGs) embody and support the interrelationships among these critical contributors to clinical decision making. … CPGs can enhance clinician and patient decision making by clearly describing and appraising the scientific evidence and reasoning (the likely benefits and harms) behind clinical recommendations.

Because expert and specialized clinicians and researchers are important contributors to the CPGs, COI that may bias their opinions must be assessed and managed to minimize bias. A COI has been defined as "a financial or intellectual relationship that may impact an individual's ability to approach a scientific question with an open mind."[1,2] The IOM states:

> However, the most knowledgeable individuals regarding the subject matter addressed by a CPG are frequently conflicted. These "experts" often possess unique insight into guideline-relevant content domains. More specifically, through their research or clinical involvement, they may be aware of relevant information about study design and conduct that is not easily identified.[1]

Although the goals and principles of COI management espoused by most developers of CPGs are in close agreement, the policies employed by CPG developers to achieve those goals vary depending on the available expertise, circumstances, and judgement for each topic and organization. The main purpose of this article is an updated, qualitative review of COI management policies and procedures across a variety of organizations with a primary focus on ADHD.

Most guidelines produced after 2011 state that their development follows the principles of the IOM (2011) document.[1] While the IOM (2011) details definitions, goals, and principles, it does not provide a prescriptive COI management policy. Instead, the IOM (2011) itself reviews a wide range of COI management solutions used by different organizations to achieve an optimal balance. The IOM (2011) document refers to the American Thoracic Society policies. The American Thoracic Society describes in detail their own COI management process and go on to review the differing COI management procedures for six other organizations, including the American Medical Association and the World Health Organization.[2] Based on the review of COI management policies of different organizations, the IOM produced some overarching COI management guidelines, paraphrased and summarized as follows (following the numbering in the IOM document).

- COI: COI consists of commercial, noncommercial, intellectual, institutional, and patient-public activities pertinent to the scope of the CPG. Applicant guideline development group (GDG) members should declare all such activities.
- Disclosure: COIs are disclosed within the GDG to determine potential impact and inform management.
- Divestment: Members of the GDG should divest themselves of financial investments and not participate in marketing activities or advisory boards of entities that could be affected by CPG recommendations.
- Exclusions: The chair or co-chairs should not have any COI. While it is best if other GDG members have no COI, it may not be then possible to have the correct expertise. Members with COIs should be a minority of the GDG. Funders should have no role in CPG development.

IOM STRATEGIES FOR MANAGING COI

The IOM does not endorse a unique policy for management of COI, but references a range of solutions employed by different organizations. Strategies for managing potential COI range from exclusion of conflicted members from direct panel participation or restriction of roles to formal or informal consultation, to participation in certain exclusive recommendations, to simple disclosure of COI to other members and publicly.

METHODS

Because there are no CPGs for adult ADHD in the United States (US), we reviewed US COI management policies for related CPGs including pediatric ADHD CPGs, pediatric psychiatric (not ADHD) CPGs, international lifes-

pan ADHD CPGs, psychiatry/psychology (not ADHD) CPGs, and general medical CPGs. Finally, we present the APSARD COI CPG management procedures (in process) informed by the IOM (2011) and the updated review.

RESULTS

Review of the Literature on COI Management in Relevant CPGs

American Pediatric ADHD CPGs. The American Academy of Child and Adolescent Psychiatry (AACAP) published practice parameters for pediatric ADHD in 2000 and 2007.[3,4] For both years, there was no published COI management policy. There were no COI restrictions evident and no funding for practice parameters was cited. In 2007, COI disclosures in the publication included research support, consulting, and speakers' bureaus of various industries.[4] The AACAP website has further COIs of additional contributors not listed in the publications. AACAP practice parameters are now discontinued. AACAP has a newer guideline process entitled *AACAP Clinical Practice Guidelines*. (See *American Pediatric Psychiatry General CPGs (not ADHD)* section below.)

The American Academy of Pediatrics (AAP) published CPGs for pediatric ADHD in 2000, 2011, and 2019.[5-7] In both 2011 and 2019,[6,7] they stated that any conflicts had been resolved through a process approved by the AAP Board of Directors. There are no other details of COI management. In the 2011 publication, there were disclosures of consulting to industry.[6] The 2019 publication stated "The authors have indicated they have no financial relationships relevant to this article to disclose" and "No conflicts prevented subcommittee member participation..."[7] The 2019 publication reported associations with health care platforms and publishing houses. The AAP funded the development of both guidelines.

The Society for Developmental and Behavioral Pediatrics (SDBP) published CPGs for complex pediatric ADHD in 2020.[8] The manuscript provides disclosures but does not otherwise address COI management. A separate document, *SDBP Conflict of Interest Policy*, was provided by the authors. The SDBP COI policy states "All COIs are not necessarily prohibited or harmful to SDBP … a determination by the SDBP Executive Committee [will determine possible]… recusal from participating in the group; discussions; and/or voting on the matter." The sole disclosure in the March 2020 publication was royalties from a rating scale.

American Pediatric Psychiatry General CPGs (not ADHD). As mentioned above, AACAP practice parameters are now discontinued. AACAP has a newer guideline process entitled *AACAP Clinical Practice Guidelines*. The most recent AACAP clinical practice guideline is for pediatric depression (October 2022).[9,10] It appears they manage the balance of expertise and COI by separating the writing group and topic experts. The seven authors of this guideline report no relevant COIs. However, COIs are not listed for the topic experts. The writing group exercised editorial authority as to whether the suggested edits were included in the final document.

International Lifespan ADHD CPGs. We reviewed three of multiple available international guidelines for ADHD across the lifespan. The Canadian ADHD Resource Alliance (CADDRA) has published four editions of practice guidelines for ADHD across the lifespan.[11] In the latest CADDRA guidelines (2020), COI-related restrictions were not discussed. COI declarations were provided over the past 2 years. COI author declarations included advisory board, speaker, and consultation relationships. The guidelines were fully funded by CADDRA.

The National Institute for Health and Care Excellence (NICE; United Kingdom) published guidelines for ADHD across the lifespan in 2008 and 2019.[12,13] COI was managed with partial involvement permitted. Declarations of COIs were disclosed separately for the previous 12 months and current. NICE published an update in 2017 to their COI policy that details subtypes of COI and prescribed management.[14] In addition, for each participant, each declared COI is listed and paired with an action taken.[15] Consequences listed were mostly categorical: *action not needed* or *action needed*. However, several distinct COI consequences were mentioned. A direct payment for advisory board membership was managed by a 1-year recusal from participation. A member involved in media about medication was restricted from discussions about pharmacology. A director of an education and health care company receiving industry payments was withdrawn from participation.[15] Talks and advisory committees with either no payment or payment to the college were permitted with no restrictions. NICE guidelines were funded by the UK government.

The Australian ADHD Professionals Association (AADPA) published guidelines for ADHD across the lifespan in 2023.[16] AADPA published a detailed discussion of COI management principles and procedures developed to align with the Australian National Health and Medical Research Council guideline standards[17] as well as UK (NICE)[13] guideline policies.[18,19] After individual disclosure, a COI management group established a level of COI severity and determined the level of permitted participation. Disclosures covered the previous 3 years and the next 12 months. When a potential COI was identified, the COI management group considered whether it could be managed, for example, by exclusion from certain discussions or decisions, divest-

ment of financial interests, resignation from other entities, peer review or public consultation, or by other measures. Past and current were weighed separately, because resignation and divestment are COI management options. Disclosures are updated and made to other members before discussions. Funding was provided by the Australian government's Department of Health.[18,19]

American Adult Psychiatry/Psychology CPGs; General (not ADHD). The American Psychological Association has produced CPGs on numerous topics including depression (2019), obesity (2018), and posttraumatic stress disorder (PTSD) (2017), but not ADHD.[20] They have a clinical practice guideline initiative COI policy.[21,22] COIs are managed and partial involvement is permitted. COI is disclosed during the past and future 12-month periods and during the term of appointment. COIs are reviewed by Association staff and appropriate action determined. "Examples of such actions may include limitations on the individual's participation in discussions, deliberations, or voting on specific matters and not being counted in determining a quorum for all or portions of a particular committee/panel meeting. Such actions would not prevent the individual from briefly stating their position or answering questions on relevant matters."[21,22]

The American Psychiatric Association produces CPGs on multiple topics, five recent and 12 legacy, but not ADHD.[23] Their COI policy provides instructions on disclosing and managing COI of different types. It includes levels of participation such as contributing a position summary only, and deliberations but not voting or deliberations with voting. "All parts of APA's governance structure are encouraged to develop their own guidelines for avoiding such potential conflicts to ensure maximum participation by members in deliberations and voting."[24] The period for COI management is separate for past and current. Their most recent (April 2023)[25] disclosure guidance recommends flexibility with regards to active (a current interest) or inactive (not current but within the past 3 years) for category Tier #1B. The majority (51% or more) of a group in Tier #1 must comprise individuals who have no financial or nonfinancial interest in industry sources. If a potential appointee fails to meet a board of trustees' (BOT) guideline for service on the committees in Tier #1, the BOT may approve the appointment notwithstanding if there are compelling reasons for it, eg, the inability to locate critical expertise elsewhere.[25] The American Psychiatric Association funds its guidelines.

There are nine discrete groups that participate in approval, development, and review of American Psychiatric Association CPGs. Individuals in each group are subject to different participation rules that "are intended to minimize potential bias from conflicts of interest."[26] Four of these groups are the guideline writing group (GWG), systematic review advisors (SRAs), stakeholders, and expert survey panels. Members of the GWG who have a COI are asked to recuse themselves from discussion of and voting on relevant recommendations/statements. Members of the SRA cannot have a COI. Stakeholders and expert survey panels need only disclose COIs.

American Adult Medical CPGs, General. The American College of Physicians (ACP) has funded and produced 18 guidelines in internal medicine, including a range of topics such as diabetes, hypertension, and osteoporosis.[27] As with many of the other guidelines, they are based on systemic evidence-based reviews consisting of network meta-analyses of randomized trials. A disclosure of interests/COI review and management panel reviews the disclosures, flags potential conflicts, grades the COI as low, moderate, or high level, described below, and manages the person's participation accordingly.[27]

- Low-level COI: Any inactive (not current) conflict. The participant is not restricted from discussion, voting, or authorship.
- Moderate-level COI: Active relationships with entities that may seek to profit by association with guidelines but are not vested in clinical conclusions of guidelines. The person participates in all discussions but is restricted from voting and authorship.
- High-level COI: Any active relationship (financial or otherwise) with a high-risk entity (eg, currently serving on advisory board for pharmaceutical company). If the participant is able and willing to "release interest," COI becomes low level. If unable or unwilling, the participant is recused from all work (discussion, voting, and authorship).

COIs are reported and disclosed to other members over the last 3 years. However, only active (current) COI results in restricted activities.[27]

APSARD COI CPG management procedures (In Process)

For oversight, co-chairs and a steering committee were appointed by the APSARD President and Executive Council. Following IOM recommendations, they convened a diverse, multidisciplinary task force of professionals, nonclinical methodologists, members with lived experience, and advocates. COIs are disclosed and reviewed by the co-chairs and steering committee to determine the level of permitted participation of task force members. Provisional guidelines are generated based on systematic reviews of evidence-based research, other guidelines where available, and nominations from the task force. As recommended by the IOM, a Delphi approach will be used as an inclusive group process to produce guidelines. The task force will be divided into subcommittees devoted to domain/

topics, for example, there will be separate subcommittee discussions for screening/diagnosis, treatment, education, etc. The Delphi approach employs group interaction with successive rounds of deliberation, voting, and ensuing refinement of provisional guidelines. Final guidelines will include ratings on the quality of the supporting evidence and the strength of the task force's clinical recommendations.

Some members of the task force will have conflicts, but the majority will not. Most COIs in the past were permitted and disclosed to other task force members prior to deliberations. COIs for the period of guideline development are selectively permitted. COIs are reviewed by the co-chairs and steering committee, after discussion with the task force member, to determine the level and domain of permitted involvement of each individual. The levels of involvement range from (1) giving a general opinion only (not involved in deliberations or voting), to (2) involvement in deliberations but not voting, to (3) full involvement in deliberations and voting. Further, individual involvement level can vary by domain/topic; for example, there can be separate levels of involvement permitted for subcommittee discussions of screening/diagnosis, treatment, education, etc., depending on the nature of the COI. COIs are disclosed to other task force members prior to discussions and voting.

Due to the complexities of every possible COI, it is impossible to fully operationalize COI management. Ultimately, management of COIs is determined by individual review by the co-chairs and steering committee after discussion with the task force member. This is followed by disclosure and discussion with the GDG members of the task force before deliberations and voting.

DISCUSSION

Although the IOM (2011) is the foundational reference document for CPGs, the COI management process for guidelines is not operationalized in a prescriptive manner.[1] IOM recommendations are mostly principles, and not detailed COI guideline procedures. The IOM 2011 based its guidance on a wide range of COI management solutions employed by different organizations. Though informative, those reviews are now dated. To inform the development of APSARD COI management procedures, we updated the review. Because there are no US CPGs for adult ADHD, we reviewed COI management policies for related CPGs including American pediatric ADHD CPGs, pediatric psychiatric (not ADHD) CPGs, psychiatry/psychology (not ADHD) CPGs, medical CPGs, and international lifespan ADHD CPGs. Although each organization produced unique COI management policies depending on the available expertise, circumstances, and judgement for each topic, there were many common elements.

APSARD used the American Psychiatric Association's interpretation of the IOM as a general guide.[25] To briefly summarize: Some members of the task force will have conflicts, but the majority will not. The management process determines the allowed level of involvement of each individual based on position in the task force and type of conflict. Chairs and task force members with supervisory roles have stricter restrictions. The levels of involvement range from (1) being able to give an opinion only (not involved in discussions or voting), to (2) being involved in group discussions but not voting, to (3) full involvement in discussion and voting. Further, individual involvement level can vary by topic; for example, there may be separate levels of involvement permitted for discussions of screening/diagnosis, treatment, education, etc., depending on the type of COI. COIs are disclosed to other task force members before discussions. However, due to the complexities of every possible COI, it is impossible to fully operationalize COI management. Ultimately, management of COIs is determined after review by the co-chairs and steering committee and discussion with the task force member. This is followed by disclosure and discussion with GDG members before deliberations and voting.

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Guidelines in the United States for the Diagnosis and Treatment of Attention-Deficit/Hyperactivity Disorder in Adults: Why They Are Needed

Ann Childress, MD, DLFAPA; Maggie Sibley, PhD; Mary V. Solanto, PhD; Max Wiznitzer, MD; Jeffrey H. Newcorn, MD

ABSTRACT

Attention-deficit/hyperactivity disorder (ADHD) is a common neurobehavioral disorder that begins in childhood and frequently persists into adulthood. During the past two decades, impairment from persisting ADHD symptoms has increasingly been recognized, and along with it, an increase in the number of adults being diagnosed and treated. Medication treatment of adults with ADHD can decrease the long-term negative impact of ADHD symptoms and behavioral interventions can improve executive function. Educational interventions designed to improve clinician knowledge and practice toward ADHD have been shown to be effective. However, although there are professional guidelines for the assessment and treatment of ADHD in children and adolescents in the United States (US), there are no guidelines for adults. This is increasingly problematic given the large number of adults being diagnosed and treated, and the range of professionals offering this treatment. The development of US guidelines for ADHD offers the potential to improve healthcare outcomes by standardizing care among clinicians with differing levels of expertise. **[*Psychiatr Ann*. 2023;53(10):461-469.]**

Attention-deficit/hyperactivity disorder (ADHD) is a common neurobehavior disorder consisting of levels of inattention and/or hyperactivity and impulsivity that are excessive for an individual's developmental level, and cause functional impairment.[1] ADHD begins during childhood and often persists through the lifespan. The prevalence of ADHD in adults in the United States (US) is estimated to be 4.4%.[2] Data indicate that impairing symptoms may continue to be present in 4% to 90% of adults who were diagnosed with ADHD in childhood, depending on the method of evaluation.[3-5] However, for many adults with ADHD, symptoms were not recognized during their youth.[6] Psychiatrists and primary physicians report lack of confidence in diagnosis and treatment of adult ADHD.[7]

WHAT ARE GUIDELINES?

The American Psychiatric Association states that "practice guidelines provide evidence-based recommendations for the assessment and treatment of psychiatric disorders and are intended to assist in clinical decision-making by presenting systematically developed patient care strategies in a standardized format."[8] The Institute of Medicine Committee on Standards for Developing Trustworthy Clinical Practice Guidelines stated "Trustworthy CPGs (clinical practice guidelines) have the potential to reduce inappropriate practice variation, enhance translation of research into practice, and improve healthcare quality and safety."[9]

Data are particularly strong in other disciplines. For example, hospitals following the American Heart Association guidelines for the treatment of patients with acute myocardial infarction had significantly lower overall in hospital mortality rates than hospitals which provided care that was less consistent with the acute myocardial infarction guidelines.[10]

WHAT IS DIFFICULT ABOUT DIAGNOSING ADHD IN ADULTS?

ADHD is difficult to diagnose in individuals of all ages, because it involves collecting information about the patient's function in the absence of an objective litmus test.[11] However, diagnosing ADHD in adults can be especially difficult. Adults often have fewer symptoms of ADHD, but they may have high impairment; this is why the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-5), now requires fewer symptoms in adults for diagnosis.[1] Core symptoms of ADHD are present in all individuals to some extent, and it can be difficult to determine whether a behavior that is reported should count as a symptom. Hyperactive-impulsive symptoms are less often present in adults with ADHD, and when they are, they are often more subtle. Consequently, the "in your face" behavior that quickly leads to diagnosis in some children is not as characteristic of adults with the disorder. An additional problem is that most adults are not in school, and many clinicians think of ADHD as a disorder that affects school behavior and performance. Guidance is therefore needed as to which behaviors in adults to investigate in which settings they occur, and how to best assess for diagnosis. Experts recommend that the focus should be on impairment, but many clinicians are not familiar with the full range of impairments present in ADHD in adults, and the various settings that they affect. It is difficult to assess impairment in high-functioning individuals – because impairment is relative to their capacities, not to any objective standard. Clearly, guidance is needed.

The process of collecting information is also different. Clinicians who assess adults do not routinely collect information from multiple informants. And even if they wanted to, this is not always possible for a variety of reasons. Additionally, it is extremely difficult to obtain information about work performance in adults except from the patient. While it sometimes is possible to query coworkers or a boss, it is extremely difficult to do this given the high potential for stigma. Contrast this with the frequency with which information regarding school function is obtained for children; teacher reports are one of the mainstays of ADHD assessment in children.

Problems with retrospective recall also plague assessment of the longitudinal course of ADHD symptoms – a key feature of the diagnostic process.[12] Research has found that adults with ADHD, and their parents, have limited ability to accurately recall childhood symptoms, with reporting of past symptoms influenced by reports of severity of current symptoms. (This may be one reason why many adults with ADHD think their condition began in adulthood rather than childhood). The question about adult onset of ADHD has recently been raised but remains controversial.[13]

An additional problem in diagnosing ADHD in adults is that mood, anxiety, and personality disorders are more common in adults than children, so accurate differential diagnosis requires that ADHD be distinguished from these

From the American Professional Society of ADHD and Related Disorders (APSARD), Brentwood, Tennessee (AC), Center for Psychiatry and Behavioral Medicine, Las Vegas, Nevada (AC), Department of Psychiatry and Behavioral Sciences, University of Washington School of Medicine, Seattle, Washington (MS), Seattle Children's Research Institute, Center for Child Health, Behavior, and Development, Seattle, Washington (MS), Department of Pediatrics and Psychiatry, Zucker School of Medicine at Hofstra-Northwell, Hempstead, New York (MVS), Department of Pediatrics, Division of Developmental and Behavioral Pediatrics, Cohen Children's Medical Center of New York, New Hyde Park, New York (MVS), Division of Pediatric Neurology, Case Western Reserve University School of Medicine, Cleveland, Ohio (MW), University Hospitals Rainbow Babies & Children's Hospital, Cleveland, Ohio (MW), Department of Psychiatry and Pediatrics, Icahn School of Medicine at Mount Sinai, New York, New York (JHN), and the Department of Pediatric Psychopharmacology, Mount Sinai Health System, New York, New York (JHN).

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Address correspondence to Ann Childress, MD, DLFAPA, Center for Psychiatry and Behavioral Medicine, Inc., 7351 Prairie Falcon Road, Suite 160, Las Vegas, NV 89128; email: drann87@aol.com.

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conditions. For example, impaired concentration can occur in depressive and anxiety disorders in addition to being a core symptom of ADHD. However, persistent sadness and excessive anxiety are not symptoms of ADHD.[14,15] Moreover, these disorders can and frequently do occur comorbidly with ADHD. In addition, substance use, which can mimic ADHD symptoms but also occurs comorbidly with ADHD, is common in adults.[16] Here, longitudinal history is critical. But again, this is not always so easily obtained.

WHY DOES RECOGNIZING ADHD IN ADULTS MATTER?

Properly recognizing and treating ADHD in adults is imperative. Symptoms of ADHD reduce an adult's quality of life through professional, financial, familial, and social impairments.[17] For example, adults with ADHD are more likely to drop out of college or get divorced, change jobs more frequently, and are more likely to be involved in risky behavior and traffic accidents across the lifespan.[18-20] At best, these myriad impairments limit opportunities for adults with ADHD. At worst, they can lead to serious negative consequences, such as legal problems and financial instability.[21,22] Pharmacological and nonpharmacological ADHD treatments effectively reduce symptoms and impairments, helping adults with ADHD meet the demands of their lives and begin to pursue stability in their relationships, jobs, and daily life.[23]

Chronic ADHD begets a long list of unfortunate psychological consequences that includes low self-esteem, self-blame, demoralization, learned helplessness, and chronic stress.[24,25] Receiving a diagnosis means finally understanding the root of one's lifelong struggles, which can be eye-opening and empowering, and begin the process of psychological healing.[26] Given the psychological distress associated with ADHD, it is not surprising that ADHD is a precursor to a range of secondary psychiatric disorders (eg, mood, anxiety, addiction).[23] Undetected ADHD can hide beneath a dominant comorbidity and prevent effective treatment of the secondary condition. Effective screening and detection of adult ADHD in settings that specialize in common psychiatric comorbidities is critical.

ADHD also is associated with an unhealthy lifestyle (eg, suboptimal diet, exercise, and sleep, and overuse of digital media) and poorer overall physical health (eg, obesity, heart disease, and Type II diabetes).[23] Thus, not surprisingly, ADHD is found to reduce life expectancy, mostly due to suicide, accidents, and chronic health problems.[27] Training providers to look for ADHD when its common physical comorbidities are present offers an important opportunity for preventing ADHD-related health problems and premature death.

Accurate recognition of adult ADHD is also critical to prevent misdiagnosis. The extent to which adults with ADHD self-identify their symptoms is variable. Adults with ADHD previously diagnosed in childhood are often men with more severe symptoms that led to the childhood diagnosis, who tend not to recognize their adult symptoms and do not seek help, despite continued impairments in adulthood.[28,29] In contrast, adults newly seeking help for ADHD are more likely to be women, self-diagnosed, or higher achieving individuals with milder symptoms, and present with elevated anxiety.[30] Efforts to promote recognition of ADHD in nontreatment-seeking individuals and to help with differential diagnosis in self-diagnosed individuals is critical—especially in an era where misinformation about ADHD online is rampant.[31]

Finally, ADHD is costly to society due to loss of productivity, increased healthcare utilization, elevated rates of incarceration, and higher rates of public assistance.[23] Thus, improving recognition of ADHD in adults also has public health ramifications. Systems-level investment in comprehensive protocols that carefully screen for and differentially diagnose ADHD versus mimicking conditions in adults will likely reduce societal costs and burdens.

WHAT IS THE CURRENT TREATMENT LANDSCAPE FOR ADULT ADHD?

Treatment of ADHD in adults can be complex, and somewhat different than it is in children. Treatment targets are often different in adults, with greater focus on inattention than activity level or behavioral control. Inattention may present in different ways and in different settings in adults. That said, hyperactivity and impulsivity are often present in adults with ADHD – albeit with a different presentation and qulaity – even if these symptoms rarely drive referral for treatment.

One obvious difference between treatment of adults and treatment of children is that the need for treatment extends over longer periods of time in adults. This can complicate the clinical context because most medications for ADHD – even those labeled as once daily – do not last all day. Thus, multiple daily dosing of medications is often required, or at least more thoughtful consideration of when to administer the medication, carefully timing it to treatment needs. Guidelines offer the opportunity to train clinicians on these key points.

PHARMACOLOGIC TREATMENT

In the US, stimulants including methylphenidate (MPH) and amphetamines (AMPH) are approved for treatment of ADHD in adults by the US Food and Drug Administration (FDA).[32] A recent meta-analysis evaluated efficacy along with adverse events and recommended AMPH as the preferred first-line treatment in adults.[33] However, multiple formulations of

AMPH are marketed in the US and not all patients respond to AMPH.[34]

More than 30 immediate-release (IR) and extended-release (ER) stimulant formulations are available in the US and most, but not all, of those approved for treatment in children are also approved for adults. Available medications include tablets that must be swallowed whole, chewable and oral disintegrating tablets, capsules, oral suspensions, and transdermal patches.[32] Many ER formulations contain an IR component designed to be absorbed and released rapidly, and ER components that are released over several hours to achieve sustained effects.[35-39] IR products are effective for a few hours and must be taken multiple times daily to maintain efficacy throughout the day.[37] IR products are also more likely to be misused and abused than ER products.[40,41] Combination IR and ER formulations may begin to take effect as soon as 30 minutes after dosing and have a duration of effect of 8 to 16 hours.[42-44] Although the onset and duration of efficacy differs among formulations, all stimulants have similar adverse event profiles.[32]

Additionally, even for medications that are approved for treatment of adult ADHD, the approach to dosing may be slightly different. Adults typically need a higher absolute dose but a lower weight-based dose. So, familiarity with higher dose treatment may be required. However, and perhaps counterintuitively, approved doses of several stimulant formulations are lower in adults than children.

Only two nonstimulants are FDA approved for the treatment of ADHD in adults in the US, atomoxetine and viloxazine ER.[45,46] Two other nonstimulants, guanfacine ER and clonidine ER, are approved in children but not adults (due to lack of research in the adult population). Of note, guanfacine ER has been studied in adults outside of the US and found to be effective.[47]

Side effects and safety considerations unique to adults must also be considered. While stimulants increase heart rate and blood pressure in individuals of all ages, this is a more serious consideration in adults, where hypertension and cardiovascular disease occur more frequently.[48] It is therefore essential to assess cardiovascular risk differently and assign it a higher priority in adults. Likewise, while ADHD medications can impact sleep in individuals of all ages, it may be particularly important to assess the impact on sleep in adults, who may be more likely to take medication later in the day.[49] Also, the impact of medications on sexual and reproductive function must be given high priority in adults.[50,51]

Finally, the fact that comorbidity is more likely in adults than children means that the necessity of prescribing ADHD medication together with medications for other psychiatric and medical disorders is greater. It is therefore essential to prioritize drug-drug interactions.[52]

PSYCHOSOCIAL TREATMENT

Adults do not respond as well as children to medication used to treat ADHD, which leaves significant room for improvement.[53] Even when stimulants are effective in relieving the core symptoms of ADHD, they may not sufficiently remediate executive dysfunction, which is highly prevalent among adults with ADHD and correlates strongly with functional impairment.[54] Other commonly co-occurring conditions may also need to be addressed, including emotional dysregulation, social functioning, and comorbidity with anxiety and depression or substance abuse. Over the past 20 years, three types of psychotherapy have been adapted to treat adult ADHD. They are: cognitive-behavioral therapy (CBT), dialectical behavior therapy (DBT), and mindfulness.

CBT currently has the strongest base of efficacy for remediating executive dysfunction. In CBT for ADHD, adults learn cognitive and behavioral principles and strategies to overcome distractibility and procrastination, and to better manage time, organize, and plan.[55] Of particular note, two well-designed, well-powered, randomized controlled trials (RCTs) that compared CBT to an active control condition (ie, "psychological placebo") reported moderate to large effect sizes for core ADHD symptoms (0.53 to 0.74) as well as clinically meaningful response rates.[56,57]

Other treatments have also been examined but have less robust evidence. DBT, originally designed to treat borderline personality disorder (BPD), has recently been adapted for adults with ADHD, based on observed commonalities between ADHD and BPD with respect to impulsive behavior, emotional dysregulation, relationship problems, and low self-esteem.[58] A recent RCT reported that DBT group treatment was more effective than treatment as usual in improving executive function on the Behavior Rating Inventory of Executive Function Adult Form (BRIEF-A).[59] However, there was no active control condition in this study, so these results must be considered preliminary. There is not yet evidence that DBT is helpful for core ADHD symptoms or that it specifically targets emotional dysregulation in ADHD.

Mindfulness-based cognitive therapy (MBCT) has also been tested for adult ADHD. This intervention combines the clinical application of mindfulness training with elements of cognitive-behavioral intervention, such as cognitive reframing. MBCT showed early promise as an intervention to improve focus for people with ADHD, as well as self-reported symptoms of ADHD, depression and anxiety, and increased performance on cognitive tests of attention and impulse control.[60,61] However, more recent research has been less promising.[62,63]

WHY ARE GUIDELINES FOR ADULT ADHD NEEDED?

Fewer clinicians are experts in diagnosing and treating ADHD in adults than in children. In a survey of psychiatrists, only 28% were extremely confident in making an ADHD diagnosis and even fewer primary care physicians (8%) were confident.[7] Guidelines will serve as an aid to practitioners who are not psychiatrists or psychologists but recognize the need and want to treat adults with ADHD, as there are not enough specialists to manage their care.[64,65] In addition, this will allow the expert clinicians to be available for the assessment and management of more complex cases.

The prevalence of ADHD in adults is increasing; this may be due in part to better recognition of the disorder, so there is a need for trained clinicians.[66] This is supported by the increased number of prescription fills for stimulants among commercially insured adults, which increased between 2016 and 2021, with the largest single-year increase (> 10%) for several age groups in prescription fills between 2020 and 2021.[67]

Many of the accepted diagnostic and treatment practices address the pediatric and adolescent populations.[68,69] Different approaches are often needed for adults because the clinical manifestation of the core symptoms of ADHD are influenced by developmental age and temperament (which may not be obvious to the typical practitioner), and the nature of the treatment may diverge from accepted practices with children.[70]

ARE OTHER ADULT ADHD GUIDELINES AVAILABLE?

Three organizations have developed guidelines in other countries: the Canadian ADHD Practice Guidelines developed by Canadian ADHD Resource Alliance (CADDRA); the Attention Deficit Hyperactivity Disorder: Diagnosis and Management guideline from the National Institute for Health Care and Excellence (NICE) in the United Kingdom, and the Australian Evidence-Based Clinical Practice Guideline for Attention Deficit Hyperactivity Disorder published by the Australian ADHD Professionals Association.[71-73] All of these guidelines address ADHD through the lifespan. The American Academy of Family Physicians has produced a toolkit for ADHD assessment and treatment to aid their members in these activities; however, there are not yet US guidelines from any professional organization.

SINCE ADULT GUIDELINES ARE PUBLISHED BY THREE OTHER ORGANIZATIONS, WHY ARE MORE NEEDED?

It is problematic that there are no US guidelines because expectations regarding diagnosis and treatment of ADHD are different in the US than in other parts of the world, and the way that ADHD symptoms present and impact children and adults is culture-bound.[74] In the US, more stimulant formulations are available for the treatment of ADHD compared to the rest of the world.[75] Viloxazine ER is only available in the US.[76] Most importantly, US-based clinicians are not likely to be aware of or have access to guidelines that were developed outside the US, and if accessed, would understand that the guidance may not be fully relevant to the US population.

The medical practitioner needs to be cognizant of consumer expectations. Guidelines will provide a standardized approach for evaluation, diagnosis, and treatment, provide a template for quality improvement measures, educate the clinician about the nature and needs of adults with ADHD, and positively impact the individual's home, work, and relationship environments.

CONCLUSION

ADHD is a chronic and impairing condition that is often under-recognized by clinicians.[14] Continued or newly initiated treatment in adults may decrease the long-term negative impact of ADHD on functioning. However, many clinicians do not feel confident in their ability to diagnose and treat adult ADHD, though educational interventions designed to improve clinician knowledge and practice toward ADHD have been shown to be effective.[7,77,78] Given the complexity of adult ADHD and the range of treatments available, it is imperative that guidelines for the diagnosis and treatment be developed for the US. This is an urgent public health matter.

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EDUCATIONAL OBJECTIVES

1. Summarize why quality measures in the management of adult attention-deficit/hyperactivity disorder (ADHD) are vital and how these measures were developed and implemented.
2. Apply the American Professional Society of ADHD and Related Disorders (APSARD) adult ADHD clinical practice guidelines to the training, education, and clinical skills of psychiatric professionals to enhance the consistent diagnosis and treatment of adults with ADHD.
3. Recognize the variety of policies employed by different organizations to meet the conflict of interest management recommendations of the National Academy of Medicine for the development of clinical practice guidelines.
4. Discover how the development of United States guidelines for ADHD has the potential to improve health care outcomes by standardizing care among clinicians.

INSTRUCTIONS

1. Review the stated learning objectives of the CE articles and determine if these objectives match your individual learning needs.
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Questions 1 through 5 are from the article "Update on Identifying and Evaluating Quality Measures for Adult Attention-Deficit/Hyperactivity Disorder" (pages 444-448).

1. What was the treatment rate for adults with attention-deficit/hyperactivity disorder (ADHD) in 2005 compared to the expected range?

- A. 18% of the expected treatment rate.
- B. 33% of the expected treatment rate.
- C. 66% of the expected treatment rate.
- D. 100% of the expected treatment rate.

2. What is the estimated annual loss of workforce productivity associated with ADHD in the United States (US)?

- A. $67 million to $90 million.
- B. $67 billion to $116 billion.
- C. $116 million to $178 million.
- D. $221 billion to $239 billion.

3. What has been a major challenge contributing to the undertreatment of adult ADHD?

- A. Limited recognition and comfort level with the condition by health care professionals.
- B. Absence of screening instruments for adult ADHD.
- C. Inadequate prevalence estimates of the condition.
- D. Adult ADHD is uncommon in nonurban areas.

4. Quality measures (QM) focus on the following domains of health care delivery, except for which?

- A. Systems-level factors that influence care.
- B. Health care provider behaviors.
- C. Research funding availability for the clinical condition in question.
- D. Achievement of ultimate desired patient outcomes.

5. Which of the following is NOT included in the Top 10 QMs for adult ADHD?

- A. Care coordination.
- B. Screening.
- C. Treatment initiation.
- D. Treatment follow up.

Questions 6 through 10 are from the article "Practice Guidelines Development: The APSARD United States Guidelines for the Diagnosis and Treatment of ADHD in Adults" (pages 449-454).

6. How often does childhood ADHD continue into adulthood?

- A. 20% to 40%.
- B. 40% to 50%.
- C. 60% to 90%.
- D. 90% to 100%.

7. US practice guidelines currently address ADHD management in ___.

- A. children
- B. young adults
- C. adults
- D. older adults

8. Clinical practice guidelines (CPGs) for adult ADHD ___.

- A. must be strict and rigid
- B. are set to define the "gold standard" of care
- C. may provide structure for third party payers
- D. are specific to women with ADHD

9. The Top 10 QMs for diagnosing and managing adult ADHD do NOT include which of the following?

- A. High-risk patients screened for ADHD.
- B. ADHD patients treated with medications.

C. Patients treated for ADHD who have a documented *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (*DSM-5*) diagnosis.

D. ADHD patients who were previously misdiagnosed with another mental disorder.

10. US guidelines for adult ADHD management will promote all the following except:

A. standards of care for adults with ADHD

B. increased training about adult ADHD

C. consistent diagnosis and treatment of adults with ADHD

D. increased awareness of self-diagnosed adult ADHD

Questions 11 through 15 are from the article "Conflict of Interest Management in Adult Attention-Deficit/Hyperactivity Disorder Clinical Practice Guidelines" (pages 455-460).

11. In their description of practice guidelines, the National Academy of Medicine (NAM) includes all of the following except:

A. Definitions.

B. A clearly detailed, prescriptive conflict of interest (COI) management policy.

C. Goals.

D. Principles.

12. NAM strategies for managing potential COIs includes all of the following except:

A. Formal or informal consultation.

B. Exclusion of the conflicted member from direct panel participation or roles.

C. Monetary compensation to the panel in charge of COIs so that the COI can be managed.

D. Simple disclosure of COI.

13. Which of the following organizations have formed US adult ADHD practice guidelines?

A. The American Academy of Child and Adolescent Psychiatry.

B. The National Institute for Health and Care Excellence.

C. The Canadian ADHD Resource Alliance.

D. None of the above.

14. Which of the following participate in the approval, review, and development of American Psychological Association CPGs?

A. Industry sponsors.

B. Previous or historical developers.

C. Expert survey panels.

D. Psychodynamic principle experts.

15. Which of the following is true about the APSARD CPG management process?

A. APSARD will not monitor COI.

B. APSARD will only require disclosure of COI.

C. APSARD will not allow members of the CPG task force to have any COI.

D. Chairs and task force members with supervisory roles will have stricter COI restrictions.

Questions 16 through 20 are from the article "Guidelines in the United States for the Diagnosis and Treatment of Attention-Deficit/Hyperactivity Disorder in Adults: Why They Are Needed" (pages 461-469).

16. Which of the following is true about ADHD in adults?

A. ADHD symptoms may persist into adulthood but are not likely to have significant impacts on quality of life.

B. Adults with ADHD are less likely to get divorced than their peers without ADHD.

C. Adults who receive treatment for their ADHD experience decreased impairment.

D. ADHD in adults does not impact educational achievement.

17. Which of the following is true about the treatment of ADHD in adults?

A. Adults with ADHD respond better to ADHD medication than children with ADHD.

B. The strongest evidence for the efficacy of nonpharmacologic treatments is for cognitive-behavioral therapy.

C. The strongest evidence for the efficacy of nonpharmacologic treatments is for mindfulness therapy.

D. Recent data suggest that dialectical behavior therapy does not improve executive functioning.

18. Which of the following is NOT true about stimulant medications?

A. Immediate-release stimulants usually are dosed multiple times per day.

B. Many extended-release stimulant formulations also contain an immediate-release component.

C. Only two stimulant formulations are available in the US.

D. Stimulant side effects vary widely for different formulations.

19. Which of the following is true about diagnosing and treating ADHD?

A. One survey reports that most psychiatrists were extremely confident in making an adult ADHD diagnosis.

B. Only psychiatrists should diagnose and manage adult ADHD.

C. Most accepted diagnostic and treatment practices address the pediatric and adolescent populations.

D. The treatment of ADHD in adults should be the same as the treatment of ADHD in children.

20. A 37-year-old man presents to your practice and states, "I think I have ADHD." He reports difficulty managing money and recently had to file for bankruptcy. He was diagnosed with ADHD in childhood and was treated with methylphenidate but stopped taking medication when he completed high school. He did well in college with a 4.0 average and has a master's degree in communications. This led him to believe that he grew out of his ADHD. The patient has had two traffic accidents in the past year and received tickets for speeding in both accidents. He was recently fired from his job because of forgetfulness. Which of the following would NOT normally be a sign of ADHD in adults?

A. Multiple traffic accidents.
B. Financial problems.
C. Exceedingly high academic performance.
D. Poor job performance.

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OCTOBER 2023 Development of United States Guidelines for the Diagnosis and Treatment of Adults With ADHD

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7. This activity will influence how I practice.
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