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Development of a Symptom-Focused Model to Guide the Prescribing of Antipsychotics in Children and Adolescents: Results of the First Phase of the Safer Use of Antipsychotics in Youth (SUAY) Clinical Trial

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Objective: To develop a new approach to prescribing guidelines as part of a pragmatic trial, Safer Use of Antipsychotics in Youth (SUAY; ClinicalTrials.gov Identifier: NCT03448575), which supports prescribers in delivering high-quality mental health care to youths.

Method: A nominal group technique was used to identify first- to nth-line treatments for target symptoms and potential diagnoses. The panel included US pediatricians, child and adolescent psychiatrists, and psychopharmacology experts. Meeting materials included information about Medicaid review programs, systematic reviews, prescribing guidelines, and a description of the pragmatic trial. Afterward, a series of 4 webinar discussions were held to achieve consensus on recommendations.

Results: The panel unanimously agreed that the guideline should focus on target symptoms rather than diagnoses. Guidance included recommendations for first- to nth-line treatment of target mental health symptoms, environmental factors to be addressed, possible underlying diagnoses that should first be considered and ruled out, and general considerations for pharmacological and therapeutic treatments.

Conclusion: Prescribing guidelines are often ignored because they do not incorporate the real-world availability of first-line psychosocial treatments, comorbid conditions, and clinical complexity. Our approach addresses some of these concerns. If the approach proves successful in our ongoing pragmatic trial, Safer Use of Antipsychotics in Youth (SUAY), it may serve as a model to state Medicaid programs and health systems to support clinicians in delivering high-quality mental health care to youths.

Clinical trial registration information: Safer Use of Antipsychotics in Youth; <http://clinicaltrials.gov/>; NCT03448575

Key words: antipsychotic, guidelines, consulting, accessibility

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Beginning in the mid-1990s, rates of prescribing antipsychotic medications to children and adolescents have grown tremendously¹⁻⁷ and remain high in some Medicaid and commercially insured populations.^{6,8-10} Significant decreases have been reported in populations with targeted programs to reduce use.¹¹⁻¹³ The vast majority of antipsychotic use in youths aged 4 to 17 years is not for psychotic disorders, mania, irritability associated with autism, or tic disorders, which are the regulatory indications for antipsychotic use; rather, antipsychotics are prescribed the most for youths diagnosed with attention-deficit/hyperactivity disorder (ADHD), conduct disorder (CD) or oppositional defiant disorder (ODD), and/or

impulsive aggression.^{8,14-17} In 1 study, 66.9% of boys aged 6 to 11 years who were prescribed an antipsychotic had a diagnosis of ADHD and 43.1% had a diagnosis of CD or ODD.⁸ Given these data, there is widespread concern that antipsychotics are over-prescribed.¹⁸

One of the greatest concerns about antipsychotic use is the significant weight gain that patients experience, which is associated with incident diabetes mellitus in youths and cardiovascular disease and premature mortality in adults.¹⁹⁻²⁶ Individual SGAs carry different risks, with clozapine and olanzapine considered most strongly associated with weight gain, and lurasidone, aripiprazole, brexpiprazole, cariprazine, and ziprasidone associated with lower weight gain,

although several studies have shown that all second-generation antipsychotics are associated with weight gain to varying degrees.^{22,27-32} There is concern that youths may be even more vulnerable to the metabolic side effects of these medications than adults and that, with continued treatment, these negative side effects propagate through the lifespan—potentially leading to higher risk of cardiovascular disease and increased premature mortality.^{1,17,33-35} Medication side effects such as extrapyramidal symptoms and sedation may also impair functioning in youths more than in adults.^{36,37}

In this paper, we report on the results of a consensus panel tasked with recommending appropriate prescribing of antipsychotics to youths in the context of large health care systems and supportive services. These recommendations are part of a multi-component approach to minimizing inappropriate antipsychotic prescribing. We argue that our approach addresses many of the reasons why antipsychotics appear to be over-prescribed: lack of access to empirically supported psychosocial treatments; guidelines that are inflexible, are silent on the psychological and physical comorbidities that youths experience, and fail to acknowledge the availability of first-line psychosocial treatments; difficulty parents/guardians face in navigating access to primary care and specialty mental health services; and geographic and logistical barriers to accessing mental health services regularly. This approach was developed as part of a pragmatic clinical trial funded by the National Institute of Mental Health called Safer Use of Antipsychotics in Youth (SUAY).³⁸ The approach is intended to be most useful to pediatricians and primary care physicians, as they may treat lower volumes of patients with severe emotional disturbance; however, the guidelines are also relevant to child and adolescent psychiatrists in their own clinical practices and in the consultative roles that they often are called upon to play.

Safer Use of Antipsychotics in Youth (SUAY)

SUAY is a pragmatic clinical trial that is designed to test an approach to improving the targeted use of antipsychotics in youths aged 4 to 17 years.³⁸ The approach was motivated by the Second Opinion program implemented in Washington State for youths insured by Medicaid, which produced a 51% relative decrease in antipsychotic use.¹³ The core elements of the intervention are as follows: (1) prescribing recommendations developed by our expert consensus panel; (2) clinical decision support (electronic health record [EHR]–based best practice alert) integrated into the practice flow; (3) review of antipsychotic prescription orders and feedback to the prescribing clinician by a child and adolescent psychiatrist within 10 days of the order (according to the treatment algorithm); (4) behavioral health navigation

for psychosocial treatment alternatives; and (5) improved access to psychosocial therapies via use of video conferencing. A full description of the study protocol is available elsewhere.³⁹ The methods and results presented in the current article focus on the first of the 5 core elements (prescribing recommendations developed by an expert consensus panel) described, and do not directly address the others.

Rationale for a New Approach to Antipsychotic Prescribing Guidelines

In its *Choosing Wisely* recommendations, the American Psychiatric Association lists as its fifth recommendation:

Don't routinely prescribe an antipsychotic medication to treat behavioral and emotional symptoms of childhood mental disorders in the absence of approved or evidence supported indications.⁴⁰

This carefully worded recommendation acknowledges that not all antipsychotic prescribing for emotional and behavioral disturbances is inappropriate. Importantly, there are a number of reasonable algorithms for antipsychotic prescribing to youths⁴¹⁻⁴⁶; however, there are 2 fundamental gaps that we address in our current recommendations to implement such guidelines: (1) how to support clinicians in most effectively using the algorithms, and (2) how to increase access to psychosocial and pharmacological treatments that existing guidelines recommend and that are supported by empirical evidence as part of first-line treatment. Below we address the fundamental issues of implementing the guidelines.⁴⁷⁻⁵⁴

Existing algorithms/guidelines for the use of antipsychotic medications include the Texas Medication Algorithm Project (TMAP),⁴³ Treatment Recommendations for the use of Antipsychotics for Aggressive Youth (TRAAY),⁴¹ the Practice Parameter for the Use of Atypical Antipsychotic Medications in Children and Adolescents⁴⁶ from the American Academy of Child and Adolescent Psychiatry (AACAP), and the Treatment of Maladaptive Aggression in Youth (T-MAY) guidelines developed through a systematic evidence review and consensus panel.^{55,56} Each of these guidelines provides thoughtful, reasonable, and practical guidance to clinicians on how to prescribe antipsychotic medications. However, uptake of these guidelines and recommendations is thought to be lower than desirable, as shown by several observational studies and meta analyses^{8,10,16,57} of antipsychotic prescribing frequencies.

There are several reasons for this gap. First, most clinicians regard guidelines as “cookbook” medicine that is not tailored to individual patient needs. Guidelines can be difficult to adapt to patient needs because a guideline cannot account for every possible clinical scenario or patient context, preferences, and values. The effective use of treatment

algorithms is also complicated by these guidelines failing to account for psychiatric comorbidities, which are more the rule than the exception for patients.⁵⁸ Treatment guidelines generally remain silent on the question of their application to patients with multiple health conditions.⁵⁰ An ideal algorithm would provide flexibility and “step outs” to be patient/family centered.

A second reason for discordance between guidelines and care delivery is a lack of access to recommended first-line treatments. For example, the TRAA guideline recommendation #3 is to begin with psychosocial and educational interventions.⁴¹ Similarly, in the TMAY guidelines, recommendation 7 is to “Provide psychoeducation for patients and families (Grade of Evidence: B; Strength of Recommendation: Very Strong)”⁵⁵; recommendation 10 is to “Provide or assist the family in obtaining evidence-based parent and child skills training during all phases of care (Grade of Evidence: A; Strength of Recommendation: Very Strong)”⁵⁶; and recommendation 11 is to “Engage the child and family in taking an active role in implementing psychosocial strategies and help them to maintain consistency (Grade of Evidence: B; Strength of Recommendation: Very Strong).”⁵⁶ However, access to clinicians providing these services may be limited in terms of geography or capacity.^{59,60} Children and adolescents living outside of major metropolitan and surrounding areas are particularly underserved in access to such services.⁶¹⁻⁶³ These disparities in access to and quality of care have been noted most prominently for child and adolescent psychiatrists,^{59,64,65} but are relevant to other child and adolescent mental health specialists as well.⁶⁶⁻⁶⁸ Furthermore, a lack of local providers may cause parents/guardians to delay seeking and accessing care until behavioral issues become so severe that an antipsychotic is prescribed when an earlier psychosocial intervention or different medication would have prevented the more severe behavior and associated dysfunction.

Thus, although many pediatricians and primary care physicians would prefer their patients to use psychosocial therapies, they may resort to prescribing antipsychotics to provide the patient/family with any effective and fast or easily accessible treatment as an alternative to no treatment. New approaches to meeting this demand are needed to increase the use of recommended psychosocial interventions.⁶⁹ With appropriate psychotherapies, engaging the family in constructive management of problematic behaviors, the use of antipsychotics may be avoided or minimized, and families gain the opportunity to learn new skills in managing their children’s symptoms and needs.⁷⁰

Finally, existing guidelines tend to begin with a single condition or diagnosis, such as ADHD, CD, or ODD, and recommend a series of treatment steps for that individual

diagnosis. The majority of pediatric patients presenting with a psychiatric disorder have other “comorbid” disorders that are difficult to address with simple guidelines.⁷¹ Guidelines are lacking that could help a provider to assess whether a specific treatment, such as an antipsychotic, is likely to be the most appropriate choice for a clinical circumstance more complex than a single diagnosis. The broad range of behavioral and mood disturbances for which antipsychotics are used suggests that an algorithmic approach to minimizing the use of antipsychotics in youths should include expert child and adolescent psychiatrist support as an integral component. Primary care physicians and pediatricians frequently report a desire for more support in managing behavioral health conditions.⁷² However, a key difficulty in providing such support is how to make it accessible and timely.

METHOD

Consensus Panel of Child Psychiatrists, Pediatricians, and Health Services Researchers

A full-day, face-to-face summit of clinical experts was held at the Kaiser Permanente Center for Total Health in Washington, DC on July 28, 2016. Experts serving as panelists included pediatricians, child and adolescent psychiatrists, and psychopharmacology experts from across the United States. Supplement 1, available online, provides more detailed biographical information about panelists.

Panelists were provided with a series of materials in advance of the summit to help them prepare. Advance materials included the following: the SUAY study scientific approach; information about the Second Opinion program that inspired the SUAY approach¹³; previous literature (see Supplement 2, available online) and systematic reviews⁷³⁻⁷⁵; and recommendations by the AHRQ,⁷⁶ American Psychiatric Association,⁷⁷ American Academy of Child and Adolescent Psychiatry,⁴⁶ and American Academy of Pediatrics.⁷⁸ We also conducted an independent systematic review of clinical trials involving children and adolescents that was distributed to panelists along with hyperlinks to the manuscripts included in our final review.

Systematic Review of Evidence

The systematic review was conducted according to version 5.1 of the Cochrane criteria.⁷⁹ We searched Embase and PubMed/Medline to identify all randomized trials, open-label trials, and meta-analyses reporting results for all first-generation and second-generation antipsychotic medications available in the United States on or before May 23, 2016, and conducted with participants less than 18 years of age.

Unpublished (non–peer-reviewed) studies were excluded so as to focus on the highest-quality evidence. The search terms involved a combination of generic medication name, symptom, and child or adolescent participants. An example search would be: “cariprazine AND aggression AND (child OR adolescent). This search was repeated for the combination of 19 generic medication names and 16 conditions/symptoms (anxiety, depression, posttraumatic stress, aggression, disruptive, eating, sleep, insomnia, mood lability, dysregulated, mania, obsession, compulsion, psychosis, suicidal ideation, and tics) for a total of 304 searches. The generalized search strategy syntax was as follows:

(aripiprazole OR asenapine OR brexpiprazole OR cariprazine OR clozapine OR fluphenazine OR haloperidol OR iloperidone OR loxapine OR lurasidone OR olanzapine OR paliperidone OR perphenazine OR pimozide OR quetiapine OR risperidone OR thiothixene OR trifluoperazine OR ziprasidone)

AND (anxiety OR depression OR flashbacks OR nightmares OR trauma OR disruptive OR aggressive OR impulsive OR dysregulated OR eating OR anorexia OR bulimia OR sleep OR insomnia OR mania OR hypomania OR “mood lability” OR irritability OR “mood swings” OR obsessive OR compulsive OR psychosis OR bipolar OR substance OR suicidal OR tics OR Tourette’s OR autism OR pervasive)

AND (child* OR adolescent)

The principal investigator and 3 research assistants divided this work and compiled the results. After de-duplication, the initial list of studies included 275 manuscripts.

In the next phase, we eliminated all studies that were not randomized trials, open-label trials, or meta-analyses ($n = 146$), leaving 129 manuscripts to review for eligibility. Of these, 71 were eliminated, leaving 58 studies to formally evaluate using the Cochrane criteria.⁷⁹ Each study was evaluated according to risk of: selection bias, performance bias, detection bias, attribution bias, reporting bias, and other bias. Version 1 of the Cochrane risk of bias tool was used.⁸⁰ Risk of bias was rated as low, high, or unclear. A spreadsheet template was completed by each reviewer with their rating on each dimension and a snippet of text copied from the manuscript supporting their rating. After review, 36 studies were judged to be of sufficient quality to include in the information packet for consensus panel members. Excluded studies had at least 1 domain on the risk of bias tool rated as “high.” Panelists were provided with a spreadsheet file summarizing the review on each Cochrane criterion as well as a hyperlink to a portable document file (*.pdf) copy of the original manuscript. Manuscripts were grouped by symptom/diagnosis to facilitate in-person discussion. A supplementary list of references provided to panelists is available in Supplement 2, available online.

Summit Organization and Approach

The summit began with introductions, an overview of the pragmatic trial, a brief review of the materials distributed prior to the meeting, an introduction to the nominal group technique^{81,82} for reaching consensus, and the goals of the meeting.

The nominal group technique involves 4 stages: idea generation, recording ideas, discussing ideas, and voting on ideas. Panelists were provided with “voting worksheets” that listed diagnostic categories for each row and a column for idea generation and idea ranking. The principal investigator (RP) and facilitator (ET) initially presented the panelists with a list of diagnostic categories for which antipsychotic medications had been prescribed according to any clinical trial or observational study (including case reports) identified while conducting the systematic review of evidence. That list included the 16 conditions/symptoms used to conduct the systematic review. After an initial round of idea generation and discussion, it was suggested that “violent ideation” be added to the list, and the vote on this addition was unanimous.

Panelists were then asked to generate up to 5 ideas for antipsychotic prescribing scenarios (eg, not responding to current antidepressant) that they would endorse most strongly for each condition/symptom category, and then to prioritize/rank these for discussion. We then recorded all unique ideas for clinical scenarios and held a group discussion. Each of the 16 symptom domains was discussed separately with the goal of identifying the following: environmental factors to address related to the symptom; any underlying diagnoses with preferred treatments before considering prescribing an antipsychotic; underlying diagnoses to consider first; and general antipsychotic medication considerations related to the symptom or potential diagnosis.

Following the in-person summit, a series of four 1-hour weekly webinar discussions between panelists were held to refine the resulting recommendations. Panelists reviewed and provided input on draft guidance materials outside of the webinars via email. These efforts culminated in the development of a series of expert opinions regarding the first- to nth-line treatment of pediatric conditions treated with antipsychotics. At the final webinar meeting, panelists were asked to vote on their omnibus approval of the prescribing guidance.

RESULTS

Much of the discussion involved panelists considering how best to identify and to structure consultations and reviews by child and adolescent psychiatrists. The principal

investigator and Dr. Robert Hilt described the mandatory review process in Washington State for Medicaid youths, and identified the strengths and weaknesses of that program (as well as similar programs across the United States). The ensuing discussion among panelists revolved around the following: difficulties arriving at a correct diagnosis for youths; shortcomings of the American mental health system; and the inflexibility of existing guidelines for prescribing antipsychotic medications. A panelist suggested that reviews should focus on the primary symptom that the prescriber is trying to treat—especially in the absence of actually seeing the patient and in the absence of standardized instrument scores or formal diagnostic interviews. The panel voted unanimously that the guidance should be organized around target symptoms (ie, principal complaint) rather than diagnoses. There were 3 primary reasons for focusing on symptoms. First, arriving at the correct diagnosis can be difficult, and requiring revisions over time for developing children. Second, the anticipated target audience for their recommendations, primary care providers, and pediatricians are often less confident in making a mental health diagnosis. Third, there was some concern about prescribers adjusting diagnoses to avoid the inconvenience of triggering a review (eg, entering a diagnosis of bipolar disorder to justify the prescribing of an antipsychotic for moderate mood lability).

Consensus panel efforts culminated in a series of guidance for first- to nth-line treatment of target mental health presentations. [Table 1](#) summarizes the organizational construct developed for identifying the target symptom and possible

underlying diagnoses within each of these categories. Full consensus panel guidance includes identifying and addressing environmental factors, possible underlying diagnoses that should first be considered and ruled out, and general considerations for pharmacological and therapeutic treatments for each target symptom or principal complaint. For instance, the consensus panel recommended never prescribing antipsychotics for certain cases, including the following: anxiety alone, insomnia, mood swings or lability or irritability without mania, substance misuse, or suicidal ideation in the absence of psychosis or severe treatment-resistant depression. This particularly strong language concerning “never prescribe” for certain clinical scenarios was again unanimously endorsed by the panelists with the rationale that the risk–benefit ratio for antipsychotics was unfavorable in the cases indicated. Supplement 3, available online, outlines the treatment steps recommended by the panel for each symptom.

The consensus panel also assisted in developing a case review form for consultations to be used in the pragmatic trial. Dose optimization of alternative pharmacotherapies and a history of current and prior medications (including the use of lower-risk medications) and psychotherapeutic interventions were recommended to be reviewed and discussed during consultations as needed. Finally, the panel discussed the use of navigation and best practice alerts as part of the effective implementation of the system.

To summarize, the consensus panel identified several key components for a best practice approach to safer and targeted use of antipsychotics via consultation:

TABLE 1 Organization of Clinical Guidance Tables^a

| Target symptom | Examples of possible related diagnoses |
|---|---|
| Anxiety | GAD, SAD, panic disorders |
| Depression | MDD, persistent depression |
| Dissociation flashbacks, nightmares | PTSD |
| Disruptive, aggressive, impulsive, dysregulated behaviors | ODD, CD, ADHD |
| Eating disorders | AN, BN |
| Insomnia | Various mental health disorders |
| Mania | Bipolar disorder I/II |
| Mood lability, irritability, mood swings (without mania) | DMDD, ODD, CD |
| Obsession and compulsion | OCD |
| Psychosis | Schizophrenia, schizoaffective disorders, |
| Substance misuse | SUD |
| Suicidal ideation | Depression |
| Tics | Simple tics, TS |
| Violent ideation | Bipolar disorder I/II, schizophrenia, SUD |

Note: ADHD = attention-deficit/hyperactivity disorder; AN = anorexia nervosa; BN = bulimia nervosa; CD = conduct disorder; DMDD = disruptive mood dysregulation disorder; GAD = generalized anxiety disorder; MDD = major depressive disorder; OCD = obsessive-compulsive disorder; ODD = oppositional defiant disorder; PTSD = posttraumatic stress disorder; SAD = social anxiety disorder; SUD = substance use disorder; TS = Tourette syndrome.

^aSee Supplement 3, available online, for detailed tables.

- Identify the target symptom(s)/behavior(s) that chiefly concern the patient/parent(s)/guardian(s);
- Identify and address potential triggers;
- Identify and specifically address potential diagnoses (eg, rule out psychosis);
- Take a history of the type of, and response and tolerability to, current and prior medications and psychosocial therapies used;
- Consider the potential for dose optimization of the patient's current medications and/or use of alternative or additional/adjunctive medications not in the antipsychotic class (eg, stimulants, antidepressants, α -adrenergic agonists);
- Consider use of lower-risk medications (eg, stimulants, antidepressants, α -adrenergic agonists);
- Consider the potential for increased use of or changes to psychosocial therapy. This may be achieved through the use of mental health navigators, use of televideo therapy, and reminder/review protocols.

DISCUSSION

A number of Medicaid programs across the country (eg, South Florida, Washington, Massachusetts) have implemented or are considering pharmacy management programs that include consultation with a child and adolescent psychiatrist as a core component.^{13,83-85} Integrated health systems, such as Kaiser Permanente, also offer telepsychiatry consultations to pediatricians and primary care physicians. The recommendations developed by the expert panel in this study—especially the focus on target symptoms—can be used to guide the discussion between the prescribing and consulting physicians most effectively.

A second benefit of the targeted symptoms approach in this guideline is that the recommendations are flexible and mindful of comorbid psychiatric and physical conditions. In this way, the guideline is more useful to clinicians facing complicated prescribing choices.

A third benefit of this guideline approach (supported by best practice alerts, care navigation, and expedited access to psychotherapy) is that it can be scaled to larger populations of patients and larger (more distant) geographic populations of youths because child and adolescent psychiatrist time, despite being a limited resource, can be efficiently and effectively deployed to improve treatment by supporting consultation with record reviews or telephone consultations for only those cases in which prescribing falls outside of guideline care.

Finally, clinicians might be concerned that a targeted symptom approach could delay the diagnosis of a disorder or that a potential unintended consequence of a focus on

each targeted symptom could be an increase in multiclass polypharmacy. However, the guidance in every symptom class involves the following process: (1) identify the target symptoms, (2) rule out potential diagnoses, (3) review current and past treatments (eg, medications and psychotherapies), and (4) consider treatment alternatives (eg, dose or medication changes, lower-risk medications, psychotherapy). As such, the guidance developed here provides a framework for consulting child and adolescent psychiatrists to work with prescribers in arriving at an effective treatment plan for the principal complaint. The process begins by honing-in on what the clinician is trying to achieve with the antipsychotic medication (target symptom) and works through whether a different diagnosis might fit better and whether current medication doses might be increased or a return to previously successful medications might be considered. The program that inspired the approach developed here reported decreases in polypharmacy after it began.¹³

Clinicians may also be concerned that the proposed guidance unnecessarily impinges on the professional autonomy of practitioners. We originally proposed a “hard stop” (similar to Medicaid programs) whereby clinicians would not be able to order the medication without a second opinion consult from a child and adolescent psychiatrist (regardless of whether the ordering clinicians were themselves psychiatrists). We interviewed physicians in 2 health systems about how best to implement the program, and concluded that a “soft stop” would be preferable so as to engender a culture of collegiality.⁸⁶

We would advocate for health system administrators and department chiefs to make local decisions on how strongly to push the guidance. We assembled a multi-disciplinary team of experts and report on their recommendations. The suite of SUAY intervention is designed to “make the right thing easy to do” but is also designed to change prescribing behavior.

This study focused on an approach to supporting the targeted prescribing of antipsychotics. The specific recommendations for that class of medication do not necessarily generalize broadly to other medication classes. However, the approach—identify target symptoms, step through lower-risk medications, facilitate psychosocial interventions, and make expert advice available—can be generalized to other medication classes and therapies. Also, the consultation and guideline focused on the use of a certain medication class, in this case antipsychotics, but did not address the level of outcomes *per se* (eg, on standardized instruments of symptom severity and/or functioning). Thus, measurement-based care should increasingly be used, in that both symptomatic, but also patient-reported and family-centered measurements and self-reports, are incorporated in the

assessment of the adequacy, effectiveness, tolerability, and overall acceptability of specific-treatment approaches. We acknowledge that the systematic review of evidence is now somewhat dated; however, the published evidence for prescribing antipsychotics to children and adolescents for conditions other than psychotic disorders, bipolar disorder, autism spectrum disorder, and developmental disability remains limited. Also, we did not attempt to qualify the strength of evidence for panelists prior to the in-person meeting. The stepped treatment recommendations for the multiple disorders covered in the guidance tables are based on expert consensus in addition to review by the panel of the treatment literature and guidelines for each disorder.

Although development of this approach to reviewing antipsychotic prescriptions included a broad representation of pediatricians, child and adolescent psychiatrists, and experts in psychopharmacology in the United States, other stakeholders were not part of the guideline development. In particular, we did not directly incorporate the input of parents, guardians, and youths. However, we did conduct a series of focus groups and telephone interviews with families at each of the 4 health systems participating in the trial to inform development of the overall SUAY program. Qualitative information reported by children, adolescents, and parents/guardians regarding their experience accessing mental health care, being prescribed an antipsychotic, medication side effects, and changes in behavior and functioning (both positive and negative) was incorporated into the study protocol for offering supportive services—including help finding psychosocial services close to home and accessing therapy via televideo. Should the SUAY trial yield beneficial outcomes in terms of more targeted antipsychotic prescribing, the ultimate and refined guideline (and supporting approach) will be informed and vetted by multiple additional stakeholders, including patients, families, and payers.

Antipsychotic prescribing that focuses on target symptoms rather than diagnoses was unanimously endorsed by a panel of experts and may hold significant promise as a strategy for improving safe and judicious antipsychotic prescribing. Such an approach may be especially promising when implemented as part of a multicomponent intervention that deploys organizational influence processes to integrate prescribing recommendations, clinical decision support, and timely specialty review of prescription orders with collegial feedback; behavioral health navigation; and improved access to psychosocial therapies, including the use of telemedicine. This multicomponent approach is currently being tested in the SUAY trial, with the primary outcome being duration of antipsychotic use among youths initiating treatment. The study will also measure negative unintended consequences including hospital admissions, emergency

department visits, and suicide attempts. If the approach proves successful at increasing or intensifying the use of psychosocial interventions before antipsychotic medication use and minimizing the duration of antipsychotic treatment once started, it may serve as a model to state Medicaid programs and health systems as a way to support pediatricians and primary care physicians in delivering high-quality mental health care to youths.

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