CLINICAL PATHWAYS AND TOOLS

for optimizing care and outcomes for children with autism spectrum disorder (ASD)

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2024

Introduction

Many children with autism spectrum disorder (ASD) also have co-occurring conditions that complicate the care they receive. According to a survey from the Autism Speaks Autism Care Network (ACNet), co-occurring ADHD, anxiety and irritability are most likely to contribute to interfering behaviors that can greatly affect quality of life when left unmanaged.

Given the high prevalence and impact of interfering behaviors in children with autism, the ACNet has developed a series of **Clinical Pathways and quality improvement tools** to improve screening, diagnosis and treatment for anxiety, ADHD and irritability in autism. These Clinical Pathways have already been implemented at ACNet sites and are now being made available to healthcare providers outside the Network.

***NOTE:* The Clinical Pathways were developed to support care delivery for children with mild to moderate autism.**

In this package, providers will find guidance on:

- Surveillance and screening (page 4)
- Diagnosis and treatment for co-occurring ASD and:
  - ADHD (page 8)
  - Anxiety (page 15)
  - Irritability (page 25)
- Pathway implementation and adherence (page 33)

The goals of this package are:

- To promote the use of up-to-date, evidence-informed practices
- To translate available evidence and best-known practices into daily clinical processes of care
- To ensure all patients reliably receive a high standard of care no matter where they receive services
- To share tools for assessing adherence to the Clinical Pathways and common approaches from ACNet sites for improving Clinical Pathway adherence

Why develop Clinical Pathways?

A Clinical Pathway is a quality tool, based on evidence and expert opinion, to guide healthcare delivery. The aim is to leverage available evidence and expert opinion to guide daily clinical processes of care to ensure all patients reliably receive a high standard of care no matter where a child receives services.

A Clinical Pathway serves as a foundation for site-based change ideas that are designed to align with the unique context of an individual site's organizational culture and work processes. The development of Clinical Pathways has been shown to reduce unnecessary and undesirable variations in patient care.

What is included in this package?

- **A brief description of the development of the Clinical Pathways** and subsequent quality improvement work undertaken by ACNet sites.
- **Evidence-informed Clinical Pathways** developed by ACNet sites for autism screening and surveillance, and management of co-occurring ADHD, anxiety and irritability.
- **A high-level summary of reliability markers** that align with the Pathways to support regular chart audits to enable sites to monitor adherence to the Pathways by care providers at the participating sites.
- **A high level summary of the types of change ideas** tested and implemented by ACNet sites to improve adherence to the Clinical Pathways.

Process followed to develop the Clinical Pathways

Baseline data from the first 530 children enrolled in the ACNet indicated that interfering behaviors were common (93%), with ADHD symptoms (65%), irritability (55%) and anxiety (47%) comprising the most commonly reported concerns.

Given the high prevalence and impact of interfering behaviors in the domains of ADHD, irritability and anxiety, the ACNet chose to prioritize improving the diagnosis and treatment of these three co-occurring conditions.

In July 2019, three learning labs were formed (ADHD, anxiety and irritability), with each Network site participating in at least one learning lab. Each lab conducted a literature review of published practice pathways for respective conditions, reviewed updated research and created up-to-date evidence-informed ACNet Clinical Pathways for the identification and treatment of each condition.

Draft pathways for ADHD, anxiety and irritability were shared across the Network at a September 2019 learning session. Subsequently, the learning labs collectively identified the need to develop a common screening pathway to screen for and identify behaviors consistent with ADHD, anxiety, irritability or other behaviors warranting treatment.

Over time, the Clinical Pathways have been shared across sites and modified and improved based on feedback received. Each learning lab defined a set of "reliability markers" to evaluate and measure clinicians' use of the recommended practices included in each pathway.

- Pilot testing of reliability markers was completed in Jan/Feb 2020, and recurring chart audits have since been completed on a regular basis. The audits, linked to the pathway of focus for each site, were initially conducted on 20 charts per site every two months; beginning in June 2023, the audit frequency was increased to monthly for approximately 15-20 charts per site, in an effort to improve upon real-time feedback for sites and their participating clinicians. The goal is to enhance reliable adherence to the pathways and to increase the number of participating clinicians at each site over time.
- Collectively, ADHD, anxiety and irritability lab participants developed:
  - Operational definitions for each condition to ensure that charts selected for audit were comparable from the perspective of clinical determination
  - A pathway or algorithm for identification and treatment for each condition
  - Reliability markers to assess adherence with the practice pathway
- Each site reviewed the Clinical Pathway they wished to adopt initially, did a gap analysis between their current practice and the recommended practices and developed change ideas to test and implement using quality improvement methods to close the known gaps. In the spirit of a learning health network, several of these change ideas were shared during learning lab discussions and adapted and adopted for use by several sites.
- As the work of each learning lab came to a close, participating sites agreed that the Surveillance and Screening Clinical Pathway should be integrated into each ACNet pathway (ADHD, anxiety, irritability). ACNet sites continue to strive to achieve high reliability on pathway adoption across their full cadre of clinicians.

SURVEILLANCE AND SCREENING CLINICAL PATHWAY

NOTE: Clinicians should complete the Surveillance and Screening Pathway prior to the ADHD, Anxiety and Irritability Pathways.

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Optimizing Care & Outcomes for Children with Autism Spectrum Disorder (ASD)

SURVEILLANCE & SCREENING FOR EARLY DETECTION AND TREATMENT OF CO-OCCURRING CONDITIONS

What is meant by surveillance and screening?

- Surveillance: the process of recognizing children who may be at risk for a concern
- Screening: the use of a tool to identify and define recognized risk

Surveillance

At every follow up visit for patients with ASD, clinicians should ask the patient or parent/caregiver the following 3 questions:

1) Behavior: Do you have concerns, or have others (family members, teachers, childcare providers, therapists) expressed concerns about you or your child's behavior?

- ADHD (trouble with focus, high activity level, impulsive behavior)
- Anxiety (worried, fearful)
- Irritability (agitation, anger, tantrums, aggression)

2) Health: Do you have concerns about you or your child's general health?

- Sleep disturbance
- Feeding difficulty
- GI problems
- Seizures

3) Safety: Do you have safety concerns related to you or your child's behavior?

- Aggressive behavior
- Unsafe behavior
- Elopement
- Self-injury

Screening

When surveillance indicates a concern – the next step is screening.

Administer a checklist of behavior symptoms *(e.g. Cinncinnati Children's Hospital Behavior Priority Checklist, Review of Systems)* OR a standardized broad-band tool *(e.g ABC, CBCL, BASC)* AND/OR a condition-specific assessment tool *(e.g. Vanderbilt, PROMIS Anxiety Parent-Proxy Short Form, Emotional Dysregulation Inventory (EDI short form), Aberrant Behavior Checklist (ABC) - Irritability & Hyperactivity subscales)* to screen for common co-occurring concerns.

Special attention should be given to surveillance and screening at developmental transitions where new behavioral concerns may arise or challenging behaviors may become more problematic, including transition from early intervention to preschool and transitions to elementary school, middle school, high school and adult services.

Approach to Improvement

Elements to achieve best practices in treatment of ADHD, anxiety and irritability in children with ASD:

- Clearly document *(yes/no)* if clinician determines presence of ADHD, anxiety, irritability
- Assess for safety concerns – if present, provide guidance
- Consider behavior therapy treatment options
- Consider use of psychotropic medication treatment if appropriate for the condition and the patient
- Provide medical monitoring if patient is treated with psychotropic medication (routine vital signs, monitor growth, lab testing if needed)
- Document patient "trajectory" at each visit *(are symptoms better, worse or the same?)*

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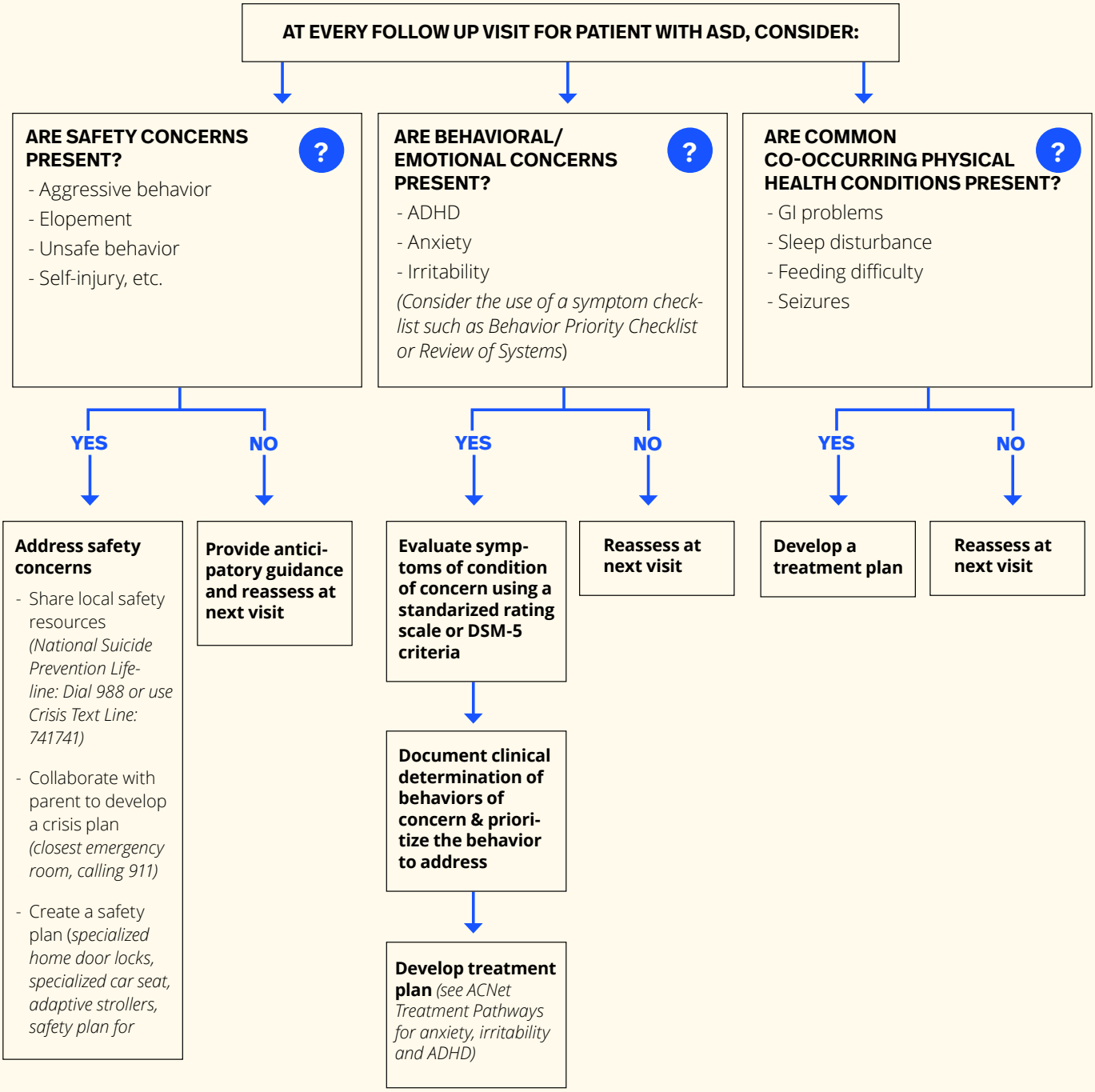
Clinical Pathway for Surveillance & Screening of Co-occurring Conditions in ASD



Surveillance and Screening Pathway reliability markers for chart audits

The reliability markers developed to align with the Surveillance and Screening Pathway include:

- Behavior concerns assessed
  - Screening tool/checklist used
- Physical health conditions assessed
- Safety concerns assessed
  - Safety concerns addressed

Markers	High Level Description *(Note that documentation in clinic notes is required to support chart audit using these markers)*
Part 1: Behavior concerns assessed	Provider assessed for all three of the behavior concerns listed below at the visit or within the past three months: • ADHD (i.e. aligned with DSM-5 ADHD diagnostic criteria including any subtype) • Anxiety (i.e. aligned with DSM-5 diagnostic criteria for an anxiety disorder or has significant and impairing anxiety symptoms) • Irritability (i.e. frequent mood changes, easily upset, tantrums, aggression, self-injury) • Other behaviors of concern (i.e. repetitive behaviors, oppositional defiant behaviors, PICA, etc.) Documentation could include either visit notes or the use of a standardized tool such as: a condition-specific tool, a standardized broadband scale (CBCL) or a general screening tool (such as Behavior Priority Checklist).
Part 2: Common co-occurring physical health conditions assessed	Provider assessed for: sleep disturbance, GI problems, feeding difficulties and seizures. Documentation regarding seizures is optional for marker success since it may not be necessary to ask about seizures at every visit.
Part 3: Safety concerns assessed	If the patient had not been seen in the past three months or more, provider asked about safety concerns such as: elopement, self-injury, aggression, suicidal ideation. If safety concerns were present, there is documentation that the safety concerns were addressed through resources provided to the family or suggestions were made to the family about how to manage safety concerns.

ADHD CLINICAL PATHWAY

ADHD Clinical Pathway

Operational definition for clinical determination of ADHD:

Clinician Determination: Does this patient meet criteria for diagnosis of ADHD?

- ❑ **NO** This patient does NOT have ADHD.
- ❑ **YES** This patient does have ADHD (e.g. meets DSM-5 ADHD diagnostic criteria including any subtype).
- ❑ **POSSIBLY** This patient has characteristics suggestive of ADHD.

  If so, please select all that apply:

  - ❑ Due to age, diagnosis of ADHD is not clear at this time.
  - ❑ ADHD symptoms are present but are "sub-threshold" for a diagnosis or are not causing impairment.
  - ❑ ADHD is suspected and patient is undergoing current evaluation to confirm diagnosis.
  - ❑ Symptoms could be attributed to a different cause (e.g. anxiety, oppositional/defiant behavior, developmental delay). Further evaluation may be warranted, in process or symptoms are being monitored over time.
  - ❑ Other: (Describe)_____

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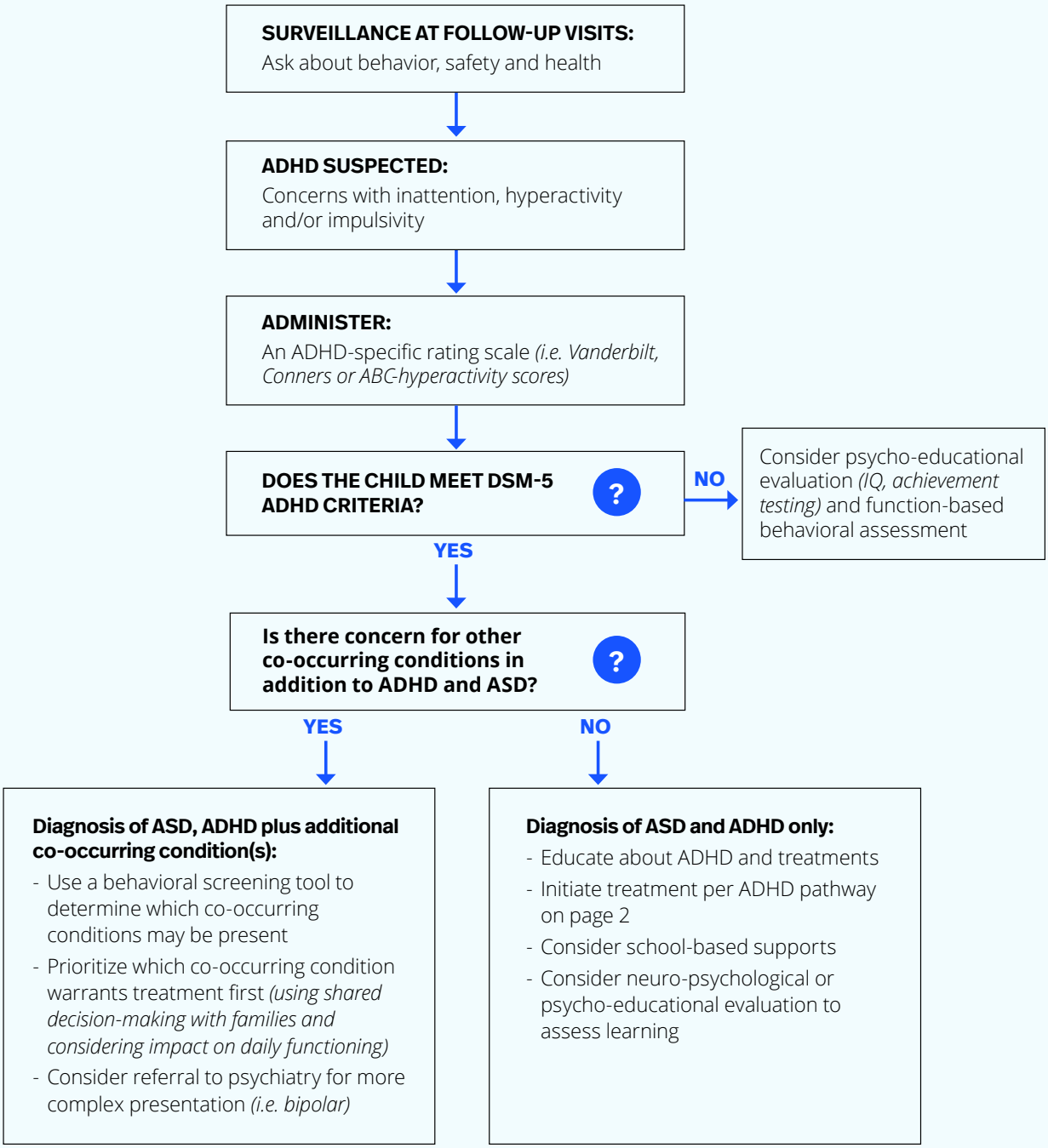
Clinical Pathway for Co-Occurring ADHD & ASD

DIAGNOSIS



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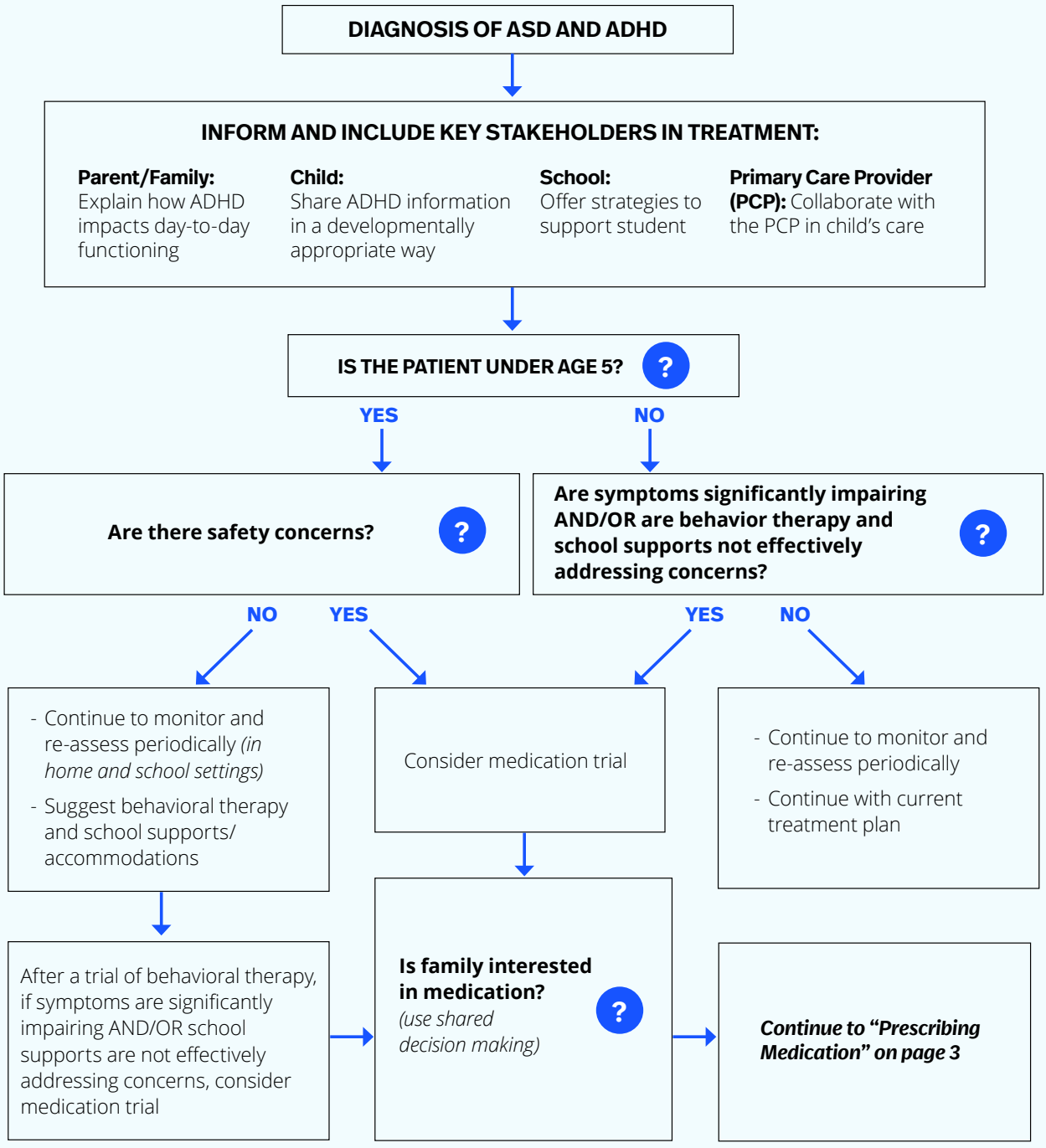
Clinical Pathway for Co-Occurring ADHD & ASD

DEVELOPING A TREATMENT PLAN



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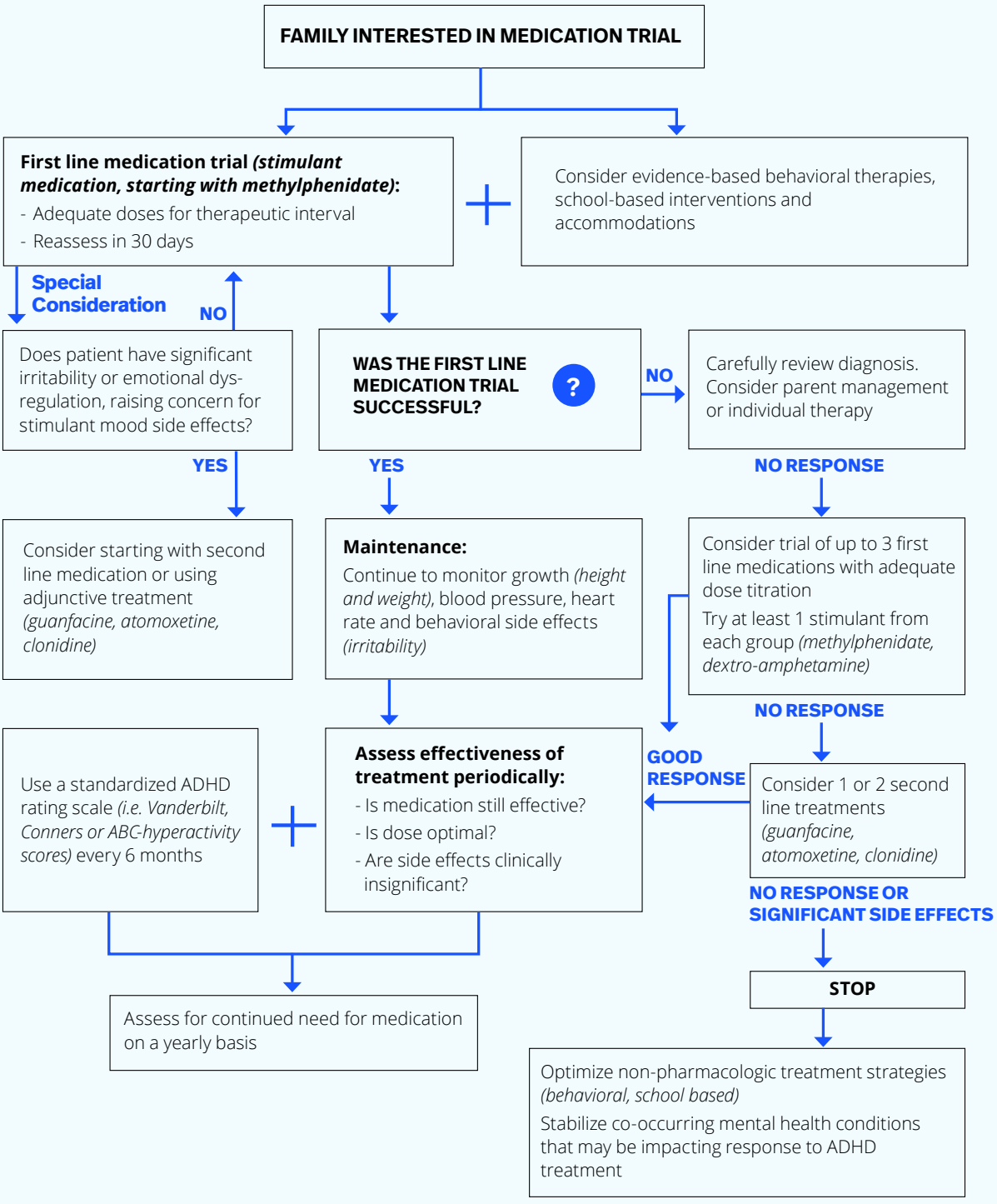
PRESCRIBING MEDICATION



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Clinical Pathway for Co-Occurring ADHD & ASD

APPENDIX

CLINICIAN RESOURCES

Clinician Guide: Program Development and Best Practices for Treating Severe Behaviors in Autism

ATN/AIR-P Provider's Guide to Effective Communication with Autism Families

View our complete list of **ATN/AIR-P Tool Kits**

FAMILY RESOURCES

CAREGIVER TRAINING

Register for **Family ECHO: Autism virtual learning sessions on ADHD, anxiety, behavior and more**

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INFORMATION & RESOURCES

Medical Conditions Associated with Autism

Expert Q&A: Explaining the conditions that accompany autism

How to Use Anxiety Strategies to Help Your Child with Autism - **English** *and* **Spanish**

How to Use Visual Supports to Help Your Child with Autism - **English** *and* **Spanish**

How to Use Behavioral Health Treatment to Help Your Child with Autism - **English** *and* **Spanish**

How to Use Irritability Strategies to Help Your Child with Autism - **English** *and* **Spanish**

How to Use Sleep Strategies to Help Your Child with Autism - **English** *and* **Spanish**

Challenging Behaviors Tool Kit

ATN/AIR-P Medication Decision Aid Tool Kit

ATN/AIR-P Autism and Medication Tool Kit: Safe and Careful Use

REFERENCES

Wolraich, M. L., Hagan, J. F., Jr, Allan, C., Chan, E., Davison, D., Earls, M., Evans, S. W., Flinn, S. K., Froehlich, T., Frost, J., Holbrook, J. R., Lehmann, C. U., Lessin, H. R., Okechukwu, K., Pierce, K. L., Winner, J. D., Zurhellen, W., & SUBCOMMITTEE ON CHILDREN AND ADOLESCENTS WITH ATTENTION-DEFICIT/HYPERACTIVE DISORDER (2019). Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents. *Pediatrics,* 144(4), e20192528. **https://doi.org/10.1542/peds.2019-2528**

Barbaresi, W. J., Campbell, L., Diekroger, E. A., Froehlich, T. E., Liu, Y. H., O'Malley, E., Pelham, W. E., Jr, Power, T. J., Zinner, S. H., & Chan, E. (2020). Society for Developmental and Behavioral Pediatrics Clinical Practice Guideline for the Assessment and Treatment of Children and Adolescents with Complex Attention-Deficit/Hyperactivity Disorder. *Journal of developmental and behavioral pediatrics*: JDBP, 41 Suppl 2S, S35–S57. **https://doi.org/10.1097/DBP.0000000000000770**

ADHD Pathway reliability markers for chart audits

The reliability markers developed to align with the ADHD Clinical Pathway include:

- Standardized ADHD rating scale utilized
- Psychosocial/behavioral treatments considered
- Medication prescribed/considered
- Vital signs attempted/obtained (i.e. heart rate, blood pressure, height, weight)
- Medication side effects assessed

Markers	High Level Description *(Note that documentation in clinic notes is required to support chart audit using these markers)*
Standardized ADHD rating scale utilized	The provider used any standardized scale for confirming diagnosis of ADHD for new patients and used the Vanderbilt scale to monitor treatment response during ongoing care. Scale to be completed prior to, or at, each consultation (in-person or virtual), if not already completed in the past three months.
Psycho-social/ behavioral treatments considered	If the patient was not already participating in active psycho-social treatment, documentation indicates that a referral or recommendation was made at the visit and there is also documentation about the reason for the referral/recommendation. If the patient was already participating in behavioral treatments, there is documentation referencing the response to treatment. However, referral may not be indicated if: symptoms improved or were acceptable; a treatment series had been completed in the past; the family previously declined; or it might not be a feasible option if the resources are simply not available or the family requires and doesn't have insurance coverage.
Medication prescribed/ considered	If the patient was not already on medication for ADHD at the start of the visit, the provider considered prescribing or prescribed medication at the visit. There may be reasons that medication was not indicated for an individual patient that should be documented; these include but are not limited to: symptoms being mild/stable/ acceptable, too young an age, trialing non-pharmacologic interventions first, contra-indication to medication, etc.
Vital signs completed	For patients on medications for ADHD, vital signs (heart rate, blood pressure, height, weight) were attempted or obtained. The marker requires documentation for all four vitals; if one or more vitals were attempted but the provider was unsuccessful in obtaining them or if it was a virtual visit, the documentation should reflect the inability to obtain vitals.
Medication side effects discussed	For patients on medication for ADHD, documentation should indicate whether side effects were assessed.

ANXIETY CLINICAL PATHWAY

Anxiety Clinical Pathway

Operational definition for clinical determination of anxiety

Clinician Determination: Does this patient meet criteria for diagnosis of anxiety?

- ❑ **NO** This patient does NOT have anxiety
- ❑ **YES** This patient has an anxiety disorder (e.g. meets DSM-5 diagnostic criteria for an anxiety disorder)
- ❑ **POSSIBLY**
  This patient has symptoms of anxiety but does not currently meet full criteria for a diagnosis. If so, please indicate which factors apply:
  - ❑ Too young to make a clear diagnosis
  - ❑ Anxiety symptoms are present but are "sub-threshold" for a diagnosis, or are not causing impairment. Indicate if any of the following symptoms are present:
    - i. ___ Depression/sadness
    - ii. ___ Frequent worries or fears
    - iii. ___ Nervousness/restlessness/tension
    - iv. ___ Difficulty with transitions
  - ❑ Symptoms may be attributable to a different cause (e.g. ADHD, irritability, ASD-associated restricted interests/repetitive behaviors)
  - ❑ Other: (Describe)_____

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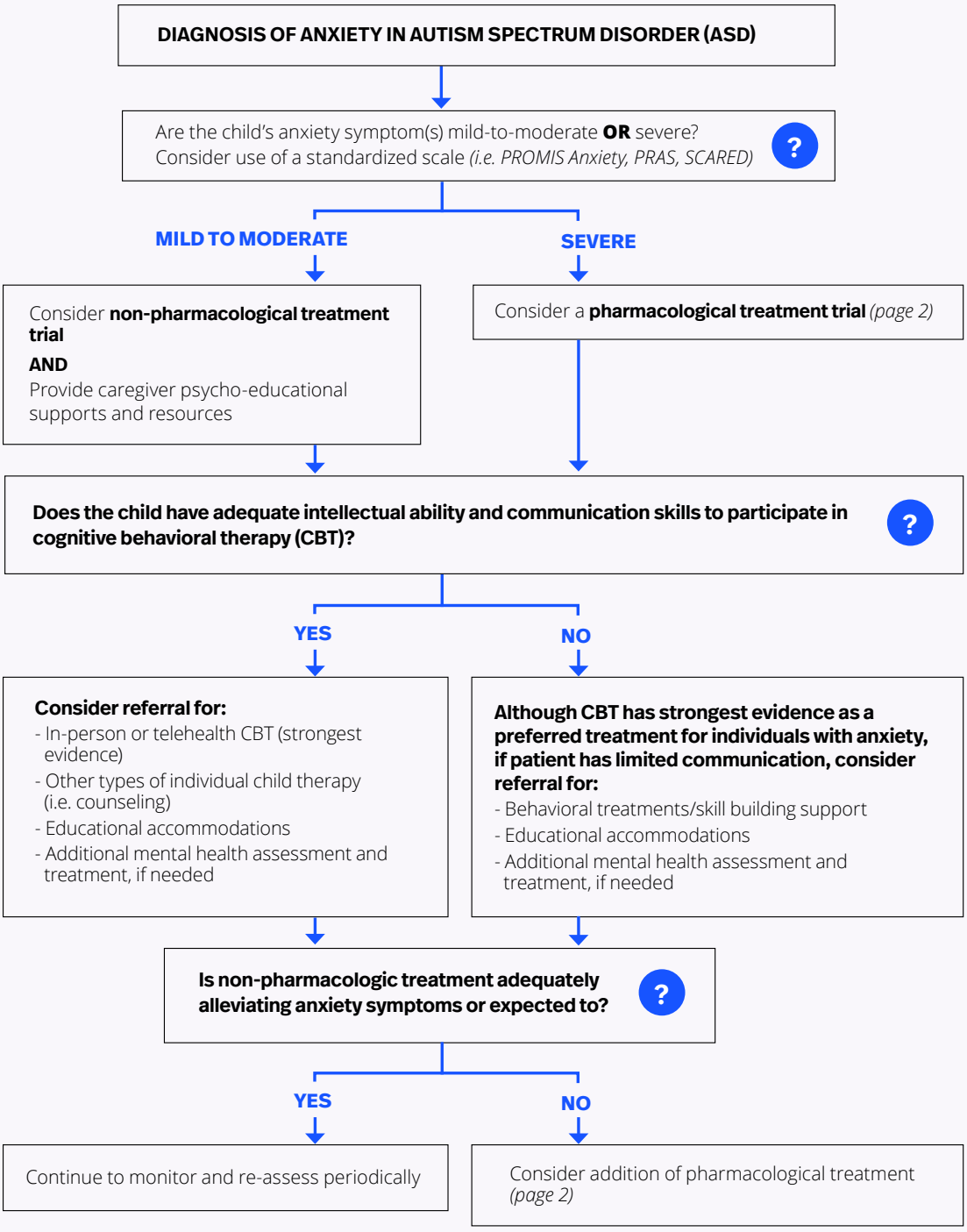
Clinical Pathway for Co-Occurring Anxiety & ASD

DEVELOPING A TREATMENT PLAN



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Clinical Pathway for Co-Occurring Anxiety & ASD

PRESCRIBING MEDICATION

CONSIDERATIONS FOR TREATMENT – Does the patient have:
- Severe anxiety?
- **OR** lack of access to developmentally appropriate CBT/individual therapy/behavior therapy?
- **OR** psychosocial stressors precluding participation in non-pharmacological treatment?

?

YES

NO → Consider **non-pharmacological treatment trial** *(page 1)*

MEDICATIONS TO CONSIDER:

Note: There is evidence of benefit for these medications for typically-developing (TD) individuals, but limited evidence for children with ASD. See Appendix *(page 4)* for all references.

Best evidence:	**Moderate evidence:**	**Minimal evidence:**	**No controlled trial evidence:**
- Sertraline	- Venlafaxine	- Citalopram/Escitalopram	- Buspirone
- Fluoxetine		- Duloxetine	
- Fluvoxamine		- Paroxetine	

Start medication at a low dose with gradual titration.

Schedule follow up for medication management:
- Monitor vital signs
- Assess side effects
- Assess anxiety symptoms
- Consider use of a standardized scale *(i.e. PROMIS Anxiety, PRAS, SCARED)*

Has there been adequate benefit relative to side effects? ?

YES → Continue monitoring

NO

If not yet seeing benefit, but there are no concerning side effects:
- Titrate medication doses to effect
- Continue monitoring of medical, sleep, behavioral and educational outcomes
- If medication does not adequately alleviate symptoms, consider other pharmacological treatment options

If there are concerning side effects:
- Consider other pharmacologic treatment options
- Review non-pharmacologic treatment response

If there is no response or significant side effects, consider referral to psychiatry

Clinical Pathway for Co-Occurring Anxiety & ASD

APPENDIX - FAMILY & CLINICIAN RESOURCES

CLINICIAN RESOURCES

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Challenging Behaviors Tool Kit

ATN/AIR-P Medication Decision Aid Tool Kit

ATN/AIR-P Autism and Medication Tool Kit: Safe and Careful Use

CAREGIVER ANTICIPATORY GUIDANCE TO REDUCE ANXIETY

- Provide clear expectations

- Use visual schedules

- Use visual timers

- Use verbal reminders prior to transitions

- Use rewards to motivate and reinforce task completion

- Anticipate sensory needs (noise canceling headphones, fidgets, breaks)

BEST EVIDENCE

Walkup, J.T., Labellarte, M.J., Riddle, M.A., Pine, D.S., Greenhill, L., Klein, R., Davies, M., Sweeney, M., Abikoff, H., Hack, S. and Klee, B., 2001. Fluvoxamine for the treatment of anxiety disorders in children and adolescents. *New England Journal of Medicine*, 344(17), pp.1279-1285.

Notes: Fluvoxamine
RUPP, 2001 [rct] Fluvoxamine (50Y250 mg/d child, max 300 mg/d adolescent) N = 128, 6Y17 y.o. SoP, SAD, GAD Fluvoxamine > PLC

Abikoff, H., McGough, J., Vitiello, B., McCracken, J., Davies, M., Walkup, J., Riddle, M., Oatis, M., Greenhill, L., Skrobala, A. and March, J., 2005. Sequential pharmacotherapy for children with comorbid attention-deficit/hyperactivity and anxiety disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*, 44(5), pp.418-427.

Notes: Fluvoxamine
Abikoff, 2005 1 United States RCT Mental Health Clinic Anxiety disorder SSRI: Fluvoxamine (N=15) Maximum of 300 mg in adolescents and 250 mg in children younger than 13 years of age. Mean age: 10 (Range 6 – 17) NR Control (N=10)

Beidel, D.C., Turner, S.M., Sallee, F.R., Ammerman, R.T., Crosby, L.A. and Pathak, S., 2007. SET-C versus fluoxetine in the treatment of childhood social phobia. *Journal of the American Academy of Child & Adolescent Psychiatry*, 46(12), pp.1622-1632.

Notes: Fluoxetine
Birmaher et al., 2003 [rdb] Fluoxetine (20 mg/d) N = 74, 7Y17 y.o. GAD, SoP Fluoxetine > PLC

da Costa, C.Z.G., de Morais, R.M.C.B., Zanetta, D.M.T., Turkiewicz, G., Neto, F.L., Morikawa, M., Rodrigues, C.L., Labbadia, E.M. and Asbahr, F.R., 2013. Comparison among clomipramine, fluoxetine, and placebo for the treatment of anxiety disorders in children and adolescents. *Journal of child and adolescent psychopharmacology*, 23(10), pp.687-692.

Notes: Fluoxetine
Walkup, J.T., Albano, A.M., Piacentini, J., Birmaher, B., Compton, S.N., Sherrill, J.T., Ginsburg, G.S., Rynn, M.A., McCracken, J., Waslick, B. and Iyengar, S., 2008. Cognitive behavioral therapy, sertraline, or a combination in childhood anxiety. *New England Journal of Medicine*, 359(26), pp.2753-2766.

Notes: Sertraline
Franklin, M.E., Sapyta, J., Freeman, J.B., Khanna, M., Compton, S., Almirall, D., Moore, P., Choate-Summers, M., Garcia, A., Edson, A.L. and Foa, E.B., 2011. Cognitive behavior therapy augmentation of pharmacotherapy in pediatric obsessive-compulsive disorder: the Pediatric OCD Treatment Study II (POTS II) randomized controlled trial. *Jama*, 306(11), pp.1224-1232.

Notes: Sertraline, Fluoxetine, Fluvoxamine, Citalopram, Paroxetine
Study evaluating improvement in OCD symptoms when adding CBT to SRI medications. Study sample was taking the following medications: Sertraline 32%, Fluoxetine 28%, Fluvoxamine 18%, Citalopram 11%, Paroxetine 6%.

Garcia, A.M., Sapyta, J.J., Moore, P.S., Freeman, J.B., Franklin, M.E., March, J.S. and Foa, E.B., 2010. Predictors and moderators of treatment outcome in the Pediatric Obsessive Compulsive Treatment Study (POTS I). *Journal of the American Academy of Child & Adolescent Psychiatry,* 49(10), pp.1024-1033.

Notes: Sertraline

MODERATE EVIDENCE

Rynn, M.A., Riddle, M.A., Yeung, P.P. and Kunz, N.R., 2007. Efficacy and safety of extended-release venlafaxine in the treatment of generalized anxiety disorder in children and adolescents: two placebo-controlled trials. *American Journal of Psychiatry*, 164(2), pp.290-300.

Notes: Venlafaxine

March JS, Entusah AR, Rynn M, Albano AM, Tourian KA. A randomized controlled trial of venlafaxine ER versus placebo in pediatric social anxiety disorder. *Biol Psychiatry*. 2007;62(10): 1149-1154

Notes: Venlafaxine

MINIMAL EVIDENCE

Dobson, E.T., Bloch, M.H. and Strawn, J.R., 2019. Efficacy and tolerability of pharmacotherapy for pediatric anxiety disorders: a network metaanalysis. *The Journal of clinical psychiatry*, 80(1), p.14375.

Notes: **Escitalopram**
Strawn et al, 2019, GAD, N=51, Escitalopram > placebo

Strawn, J.R., Prakash, A., Zhang, Q., Pangallo, B.A., Stroud, C.E., Cai, N. and Findling, R.L., 2015. A randomized, placebo-controlled study of duloxetine for the treatment of children and adolescents with generalized anxiety disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*, 54(4), pp.283-293.

Notes: **Duloxetine**
Strawn, 201514 United States, Mexico, South Africa RCT Outpatient SAD, SoP Mean CGI: 4.5 SNRI: Duloxetine (N=135+control)

Wagner, K.D., Berard, R., Stein, M.B., Wetherhold, E., Carpenter, D.J., Perera, P., Gee, M., Davy, K. and Machin, A., 2004. A multicenter, randomized, double-blind, placebo-controlled trial of paroxetine in children and adolescents with social anxiety disorder. *Archives of General Psychiatry*, 61(11), pp.1153-1162.

Notes: **Paroxetine**
Wagner et al., 2004 [rdb] Paroxetine (10Y50 mg/d) N = 322, 8Y17 y.o. SoP Paroxetine > PLC

NO CONTROLLED EVIDENCE

Salazar, D.E., Frackiewicz, E.J., Dockens, R., Kollia, G., Fulmor, I.E., Tigel, P.D., Uderman, H.D., Shiovitz, T.M., Sramek, J.J. and Cutler, N.R., 2001.

Pharmacokinetics and tolerability of buspirone during oral administration to children and adolescents with anxiety disorder and normal healthy adults. *The Journal of Clinical Pharmacology*, 41(12), pp.1351-1358.

Notes: **Buspirone**
There are no published controlled trials. Buspirone may be well tolerated at doses of 5 to 30 mg twice daily in anxious adolescents and at lower doses of 5 to 7.5 mg twice daily in anxious children (Salazar et al., 2001 [UCT]).

Simeon, J.G., Knott, V.J., Dubois, C., Wiggins, D., Geraets, I., Thatte, S. and Miller, W., 1994. Buspirone therapy of mixed anxiety disorders in childhood and adolescence: A pilot study. *Journal of Child and Adolescent Psychopharmacology*, 4(3), pp.159-170.

Notes: **Buspirone**
Simeon JG, Knott VJ, Dubois C, et al. Buspirone therapy of mixed anxiety disorders in childhood and adolescence: a pilot-study. *J Child Adol Psychop*. 1994;4(3):159-170. doi:10.1089/cap.1994.4.159 (UCT)

Anxiety Pathway reliability markers for chart audits

The reliability markers developed to align with the Anxiety Clinical Pathway include:

- Standard rating scale for assessment of anxiety utilized
- Clinician categorization of severity (mild, moderate, severe)
- Documentation of family psychoeducational resources provided
- Psycho-social treatments considered
- Medication prescribed/considered
- Vital signs attempted/obtained (heart rate, blood pressure, height, weight)
- Medication side effects assessed

Markers	High Level Description *(Note that documentation in clinic notes is required to support chart audit using these markers)*
Standardized anxiety rating scale utilized	The provider used the PROMIS Anxiety Parent-Proxy, version 2 Short Form rating scale or any other standardized scale to confirm diagnosis for new patients and to monitor treatment response during ongoing care. The scale is to be completed prior to, or at, each consultation (in-person or virtual), if not already completed in the past three months.
Clinician categorization of severity	The clinician documented the severity of the anxiety as mild to moderate or severe.
Documentation of family psychoeducational resources provided	Clinic notes documented that the family was given psychoeducational resources, or that it was not indicated for reasons such as: family was previously given psychoeducational resources; family was aware of, previously accessed; or is currently using appropriate psychoeducational resources, or symptoms had improved significantly and there was no need for additional resources at the time of the visit.
Psycho-social/behavioral treatments considered	If the patient was not already participating in active psycho-social treatment, documentation indicates that a referral or recommendation was made at the visit and there is also documentation about the reason for the referral/recommendation. If the patient was already participating in behavioral treatments, there is documentation referencing the response to treatment. If psychosocial/behavioral treatment was not indicated, there should be notes about the reason it is not indicated such as: symptoms improved or were acceptable; a treatment series had been completed in the past; the family previously declined; or it may not have been a feasible option if the resources are simply not available or the family requires and doesn't have insurance coverage.

Medication prescribed/ considered	If the patient was not already on medication for anxiety at the start of the visit, the provider considered prescribing or prescribed medication at the visit. There may be reasons that medication was not indicated for an individual patient that should be documented. These include but are not limited to: symptoms being mild/stable/ acceptable, too young an age, trialing non-pharmacologic interventions first, contra-indication to medication, etc. Based on the pathway, if symptoms are categorized as severe, the patient should be on anxiety medication.
Vital signs completed	For patients on medications for anxiety, vital signs (heart rate, blood pressure, height, weight) were attempted or obtained. The marker requires documentation for all four vitals; if one or more vitals were attempted but the provider was unsuccessful in obtaining them or if it was a virtual visit, the documentation should reflect the inability to obtain vitals.
Medication side effects discussed	For patients on medication for anxiety, documentation should indicate whether side affects were assessed.

IRRITABILITY CLINICAL PATHWAY

Irritability Clinical Pathway

Operational definition for clinical determination of irritability

Clinician Determination: Does this patient have irritability?

❑ **NO** This patient does NOT have irritability.

❑ **YES** This patient DOES HAVE irritability.

Listed below are clinical characteristics that could suggest a clinical determination of irritability:

- Presence of the following behaviors: **frequent mood changes** (mood liability), **tantrums, aggression, self-injury.**
- Description of the patient being "irritable" as a symptom feature.
- Irritability could (but does NOT need to) include a diagnosis of: disruptive mood dysregulation disorder (DMDD), bipolar disorder, intermittent explosive disorder (IED), major depressive disorder.
- Use of a medication commonly used to treat irritability in individuals with autism such as atypical antipsychotics: Aripiprzole (Abilify), Risperidone (Risperdal).

Note: *Atypical antipsychotic medications have indications other than irritability, such as the treatment of tic disorder. If use of this medication class is noted in the chart, recommend considering if irritability is present as the reason for use. Also, medication classes other than atypical antipsychotics are sometimes used to treat irritability (such as alpha-2 adrenergic agonists- i.e. guanfacine).*

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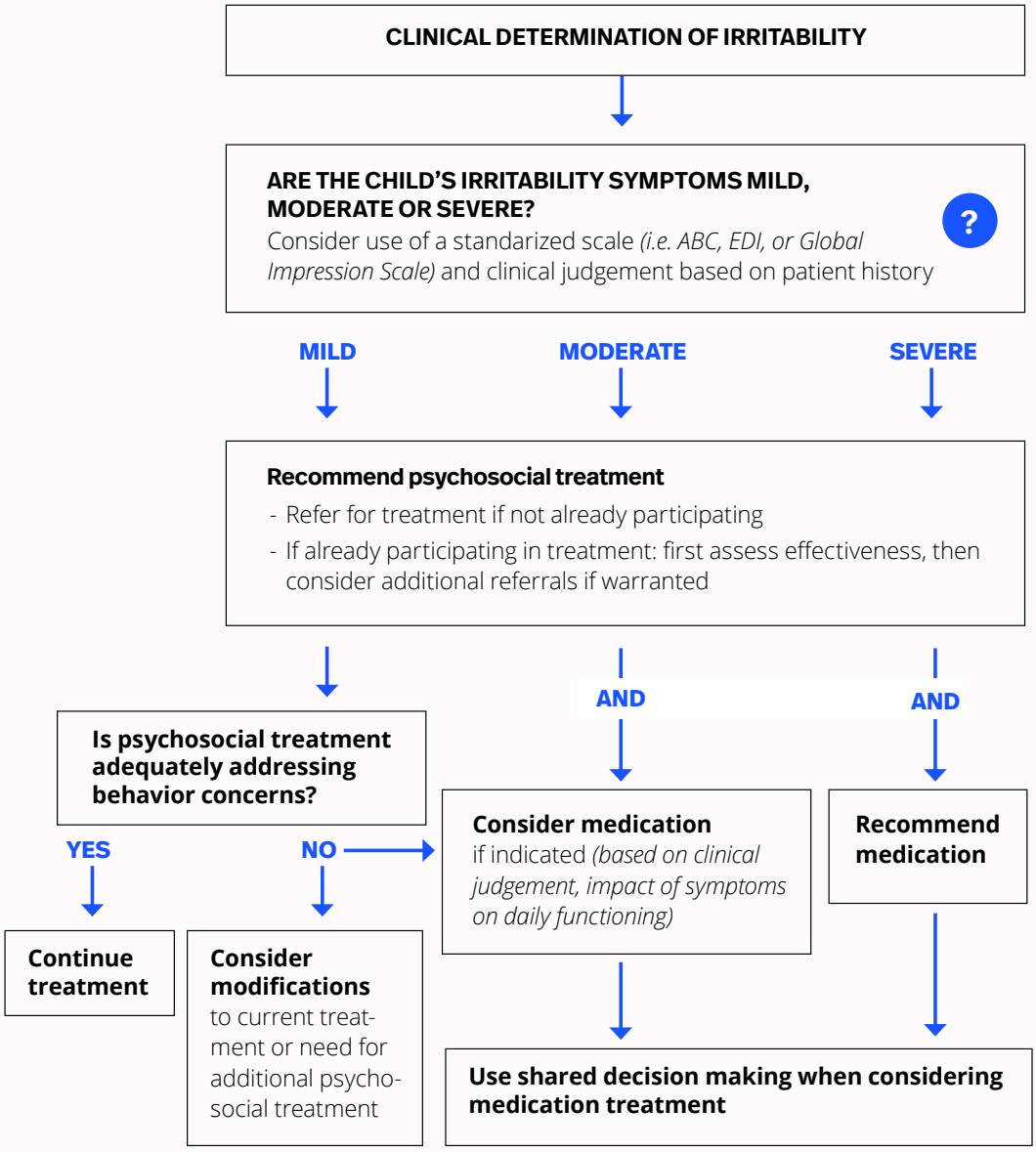
GENERAL TREATMENT APPROACH



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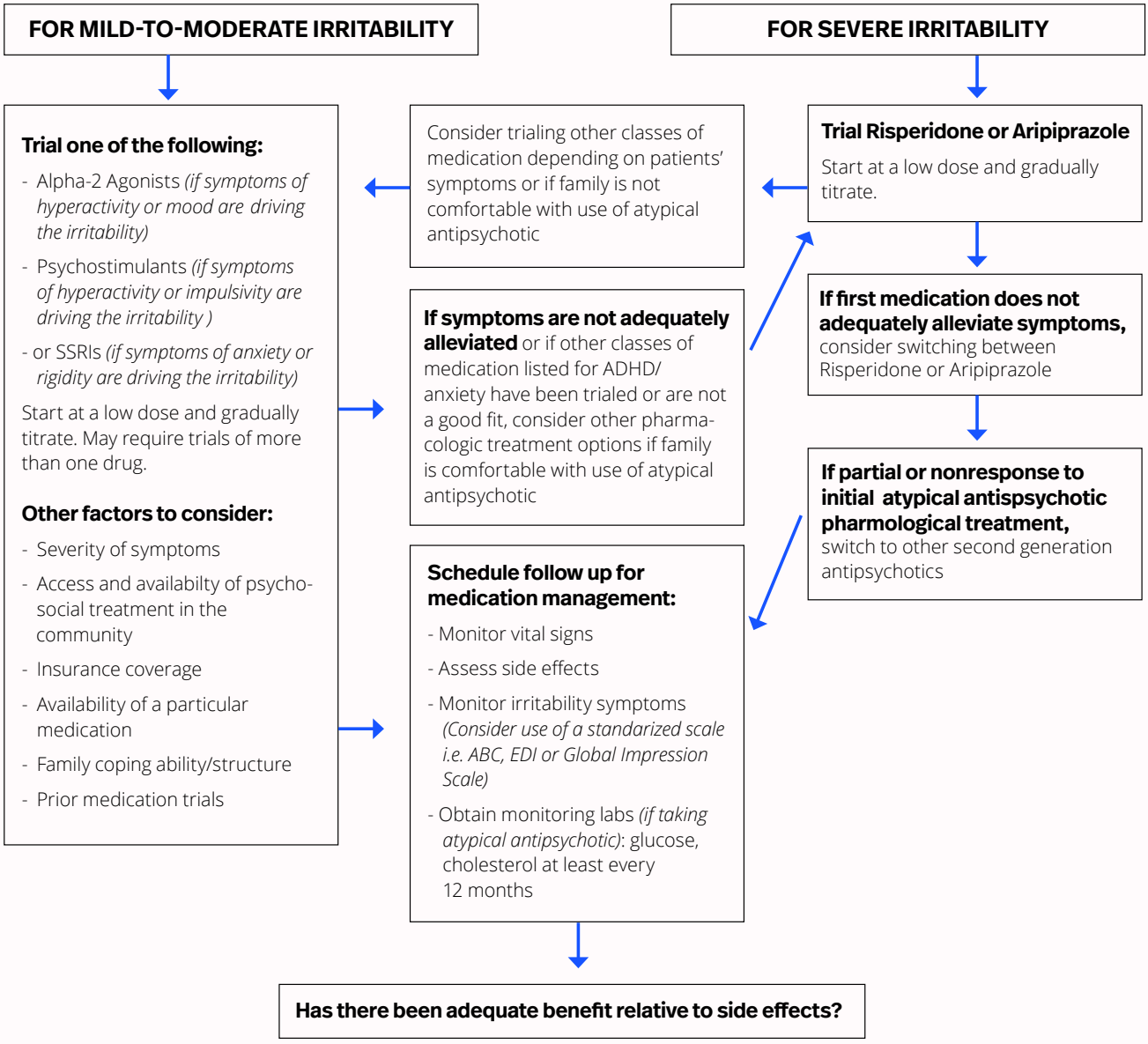
PHARMACOLOGICAL TREATMENT



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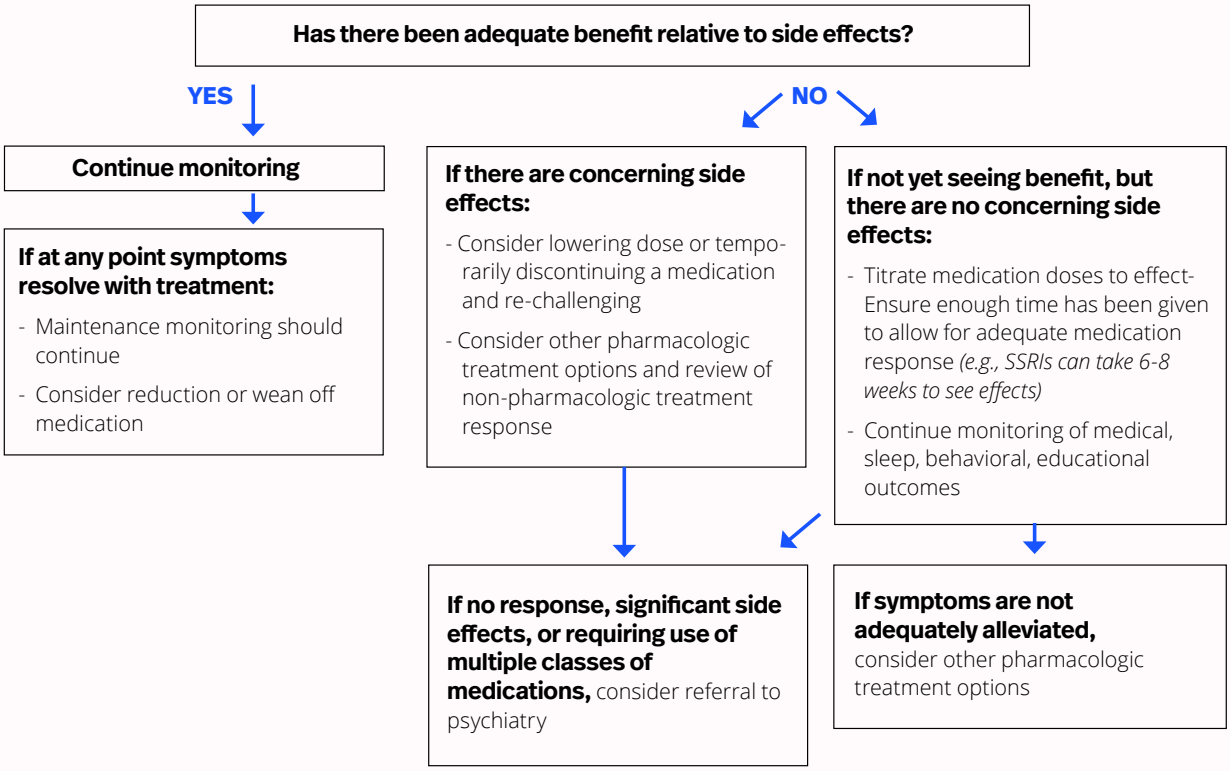
PHARMACOLOGICAL TREATMENT



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APPENDIX

OPERATIONAL DEFINITION FOR CLINICAL DETERMINATION OF IRRITABILITY FOR PURPOSES OF ACNET DATA COLLECTION AND ANALYSIS

- Presence of the following behaviors: frequent mood changes (mood lability), tantrums, aggression, self-injury.
- Description in the clinical note of the patient being "irritable" as a symptom feature.
- Irritability could (but does NOT need to) include a diagnosis of: Disruptive Mood Dysregulation Disorder (DMDD), Bipolar Disorder, Intermittent Explosive Disorder (IED), Major Depressive Disorder.
- Use of a medication commonly used to treat irritability in individuals with autism, such as atypical antipsychotics: Aripiprzole (Abilify), Risperidone (Risperdal).

PSYCHOSOCIAL TREATMENT TO INCREASE POSITIVE BEHAVIORS AND DECREASE CHALLENGING BEHAVIORS

Therapies promoting communication and social skills:

- Discrete Trial Training
- Incidental Teaching, Pivotal Response Training, Early Start Denver Model (and others)
- Applied Behavior Analysis (ABA) to target specific problems: sleep, toileting, self-injurious behaviors

Therapies focusing on increasing compliance and decreasing challenging behaviors:

- RUBI Parent Training
- Parent Child Interaction Therapy (and others)
- Triple P
- Stepping Stones
- ABA
- Caregiver Skills Training (CST) and eLearning CST (eCST), Family ECHO

AUTISM SPEAKS TOOL KITS AND GUIDES

- ATN/AIR-P Introduction to Behavioral Health Treatments Tool Kit
  https://www.autismspeaks.org/tool-kit/atnair-p-introduction-behavioral-health-treatments
- Clinician Guide: Program Development and Best Practices for Treating Severe Behaviors in Autism
  https://www.autismspeaks.org/roadmap/clinician-guide-program-development-and-best practices-treating-severe-behaviors-autism

Irritability Pathway reliability markers for chart audits

- Standard rating scale for assessment of irritability utilized
- Clinician categorization of severity (mild, moderate, severe)
- Psychosocial/behavioral treatments considered
- Medication prescribed/discussed
- Lab monitoring for atypical medication (glucose, cholesterol)
- Vital signs attempted/obtained (heart rate, blood pressure, height, weight)
- Medication side effects assessed

Markers	High Level Description *(Note that documentation in clinic notes is required to support chart audit using these markers)*
Standardized rating scale for assessment of irritability utilized	The provider used any standardized scale for confirming diagnosis for new patients; and used either of the following two scales to monitor treatment response during ongoing care: • Aberrant Behavior Checklist (ABC)—Irritability and Hyperactivity sub-scales • Emotional Dysregulation Inventory (EDI)—Reactivity and Dysphoria Short Forms The scale should have been completed prior to, or at, each consultation (in-person or virtual), if not already completed in the past three months.
Clinician categorization of severity	The provider documented the severity of the irritability in the clinic notes as mild, moderate or severe.
Psycho-social/behavioral treatments considered	If the patient was not already participating in active psycho-social treatment, documentation indicates that a referral or recommendation was made at the visit and there is also documentation about the reason for the referral/recommendation. If the patient was already participating in behavioral treatments, there is documentation referencing the response to treatment. If psychosocial/behavioral treatment was not indicated, there should be notes about the reason it is not indicated such as: symptoms improved or were acceptable; a treatment series had been completed in the past; the family previously declined; or it may not have been a feasible option if the resources are simply not available or the family requires and doesn't have insurance coverage.

Medication prescribed/ considered	If the patient was not already on medication for irritability at the start of the visit, the provider considered prescribing or prescribed medication at the visit. Based on the pathway, if symptoms are categorized as moderate or severe, the patient should be on medication for irritability symptoms. There may be reasons that medication was not indicated for an individual patient that should be documented; These include but are not limited to: symptoms being mild/stable/acceptable, too young an age, trialing non-pharmacologic interventions first, contra-indication to medication, etc.
Lab monitoring for atypical medication (glucose, cholesterol)	If the patient is on atypical medications for irritability, there is documentation of blood glucose and cholesterol lab tests having been done prior to or at the visit, or within the prior 12 months OR there is documentation that laboratory tests were recommended/ ordered within past 12 months.
Vital signs completed	For patients on medications for irritability, vital signs (heart rate, blood pressure, height, weight) were attempted or obtained. The marker requires documentation for all four vitals; if one or more vitals were attempted but the provider was unsuccessful in obtaining them or if it was a virtual visit, the documentation should reflect the inability to obtain vitals.
Medication side effects discussed	For patients on medication for irritability, documentation should indicate whether side effects were assessed.

PATHWAY IMPLEMENTATION AND ADHERENCE

Pathway Implementation and Adherence

Quality improvement initiatives to increase reliable adherence to the Clinical Pathways

Each of the ACNet sites involved in developing the Clinical Pathways in this package reviewed bi-monthly/monthly reliability data and **developed, tested and ultimately implemented change ideas for enhancing clinical uptake and consistent adherence to the pathways.**

While the approaches to improvement varied across sites based on local realities, there were commonalities across sites in terms of the types of change ideas used to drive improvement.

At a high level, these can be summarized as follows:

- Development of a screening tool (to be completed prior to or at the visit), that embeds the key clinical and safety elements deemed important for screening for individuals with autism.
- Automated, online completion of standardized scales for monitoring progress on symptoms (prior to the visit) or completion of scales during visits; subsequent integration of the scale results into the electronic record; and documentation of discussion of results with the family to enhance shared decision-making about ongoing care.
- Smart phrases and dot phrases incorporated into electronic medical records to remind clinicians to ask about/consider and document all components of a pathway included in a visit.
- Use of navigators to improve access to community behavioral therapy resources.
- Individual data feedback to clinicians on their performance related to reliable adherence to all elements of the pathway.
- Education sessions with clinicians in regard to evidence supporting the pathways, the content of the actual pathways, and the methods used by other clinicians at their site to enhance pathway reliability.
- Change ideas related to specific markers such as:
  - Use of QR codes to pull resources into the electronic record (for example, for safety resources, resources to manage physical health conditions, psycho-educational resources) to make them easily accessible for discussion during a visit.
  - Medication management contracts with families to enhance compliance with recommended medication regimes.

To learn more about the change ideas implemented by ACNet sites, view the expanded version of this package.