

# 2019 AMERICAN ACADEMY OF PEDIATRICS ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) CLINICAL PRACTICE GUIDELINE:

## INTRODUCTION TO THE QUALITY IMPROVEMENT TOOLS

The Subcommittee on ADHD is committed to practice improvement and has developed these quality improvement tools to facilitate implementation of the 2019 ADHD guidelines.

- **The intent of the driver diagram and metrics is to facilitate practice improvement and guideline implementation.**
  - Key stakeholders should use a dynamic and iterative process to select goals, specific aims, measures, and targets consistent with their office practice's improvement projects.
  - Practices should not expect to be able to achieve all of the goals and/or demonstrate improvement in all measures within a specific timeframe.
  - Some goals may require many iterative improvement cycles and take *years* to achieve, due to complex systems barriers (as outlined in the supplementary Barriers statement accompanying the guidelines).
- **These should not be considered complete or static tools.**
  - These tools are examples of the critical concepts, actions/interventions, and/or tools that are likely important in driving practice change.
  - Practices should feel free to modify or adapt as needed based on their clinical population, practice environment, and local system resources and constraints.
  - Practices should select high-value areas (goals) for improvement and select/adapt the measures deemed most relevant to their projects.
  - Some measures may appear to address the same underlying process or outcome but allow practices to drill down to specific areas of improvement or offer a more feasible way to collect data and/or calculate the measure.
  - Although some measures have suggested numeric targets based on the published literature or are from previous ADHD QI collaboratives, *these targets are not meant to be standards independent of local context*. Practices should set their own initial, achievable targets based on current performance, taking into account local resources and barriers. For example, an initial target may be “10% improvement from baseline” for some measures that require coordination with systems (educational, mental health) not within a practice's direct control, and “50% improvement from baseline” for other measures that entirely within a clinician's control.
  - As performance improves over time, practices may wish to move towards more “aspirational” targets as appropriate.

## 2019 ADHD CPG QI Metrics

Inclusion criteria: Patients ages 4-17 years (up to the 18<sup>th</sup> birthday)

Exclusion criteria: As per measure specifications

Time frame for data collection: TBD by each practice/clinical unit; several measures are based on a 12-month timeframe from initial diagnosis or assessment

**PLEASE NOTE:** Targets for each measure should be based on a practice's *desired achievable improvement from their own baseline (e.g., 10-25% from baseline is often used as the first improvement target, depending on the practice's readiness for change and the difficulty of implementing the planned changes; as performance improves, practices may then wish to move towards more aspirational targets of 90-100% depending on the measure)*. The targets/benchmarks suggested below are based on examples from the published literature or from other ADHD collaboratives.

Measure	Measure Definition	Measure source	Measure Calculation	Data source / tool	Suggested target or benchmark (if available)*
<b>Aim: Patients will receive an appropriate diagnostic assessment as per current CPG recommendations</b>					
1. Use of DSM-5 criteria  (KAS 2)	% of patients who meet DSM-5 criteria for ADHD	Adapted from EQIPP course; adapted from CHIPRA (Accurate ADHD Diagnosis)	<u>Numerator:</u> # of patients who met DSM-5 criteria for the diagnosis of ADHD  <u>Denominator:</u> # of patients who have been diagnosed with ADHD	Medical record review	
2. Use of validated ADHD rating scale from 2 or more settings  (KAS 2)	% of patients whose ADHD symptoms and impairment were assessed using validated ADHD rating scales from 2 or more settings	Adapted from CHIPRA Pediatric Quality Measures Program Centers of Excellence (Accurate ADHD Diagnosis)	<u>Numerator:</u> # of patients who have a validated ADHD rating scale completed by individuals from at least 2 major settings (e.g., parent and teacher)  <u>Denominator:</u> # of patients who have received a diagnostic assessment for ADHD	Validated ADHD rating scale (e.g. Vanderbilt)	90% (per CQN ADHD collaborative) Epstein et al (Pediatrics 2011): 83% had a parent Vanderbilt and 83% had a teacher Vanderbilt as part of the diagnostic assessment
3. Screening for co-morbid conditions  (KAS 3)	% of patients who were screened for co-morbid conditions	Adapted from EQIPP course	<u>Numerator:</u> # of patients who have been screened for common co-morbid conditions, including emotional or behavioral conditions (e.g., anxiety, depression, oppositional-defiant disorder), developmental conditions (e.g., learning and language disorder, autism), and physical conditions (e.g., tics, seizures, sleep apnea)  <u>Denominator:</u> # of patients who have been diagnosed with ADHD	Validated screening tools  (Note: Vanderbilt used for ADHD symptoms include screening for comorbidity)	

Measure	Measure Definition	Measure source	Measure Calculation	Data source/tool	Suggested target or benchmark (if available)
<b>Aim: Patients/families will receive age-appropriate education about ADHD</b>					
4. ADHD education for families  (KAS 4: chronic care model)	% of patients diagnosed with ADHD who were offered ADHD educational materials	CQN ADHD collaborative  Adapted from EQIPP course	<u>Numerator:</u> # of patients diagnosed with ADHD who were offered educational materials about ADHD  <u>Denominator:</u> # of patients diagnosed with ADHD	Medical record review	90% (per CQN ADHD Collaborative)
<b>Aim: Patients will have a written ADHD care plan.</b>					
5. ADHD care plan  (KAS 4)	% of patients diagnosed with ADHD who have a written ADHD care plan based on input from patient/family and school	Adapted from EQIPP course	<u>Numerator:</u> # of patients with a written ADHD care plan  <u>Denominator:</u> # of patients diagnosed with ADHD	Medical record review	90% (per CQN ADHD Collaborative)

Measure	Measure Definition	Measure source	Measure Calculation	Data source/tool	Suggested target or benchmark (if available)
<b>Aim: Patients will receive treatment recommendations appropriate for age.</b>					
6a. Parent training in behavior management (PTBM) as first-line treatment for preschoolers  (KAS 5a)	% of patients aged 4-5 years who received recommendation for evidence-based parent training in behavior management (PTBM) training as first-line treatment for ADHD and ADHD-related impairments	CHIPRA  Adapted from EQIPP course	<u>Numerator:</u> # of patients ages 4-5 years diagnosed with ADHD who received recommendation for evidence-based parent PTBM as first-line treatment for ADHD and ADHD-related impairments  <u>Denominator:</u> # of patients ages 4-5 years diagnosed with ADHD	Medical record review	CDC data 2008-2014: 50% of preschool-age children ages 2-5 with ADHD received behavior therapy as first line treatment (MMWR, May 6, 2016 / 65(17);443-450)
6b. Either FDA-approved ADHD medication OR evidence-based psychosocial intervention to treat ADHD and related impairments for ages 6-11 years  (KAS 5b)	% of patients aged 6-11 years who received recommendations for either FDA-approved medications or evidence-based psychosocial interventions (such as PTBM, behavioral classroom, or educational interventions) to treat ADHD and related impairments	Adapted from EQIPP course	<u>Numerator:</u> # of patients ages 6-11 years diagnosed with ADHD who received recommendation for FDA-approved medication for ADHD or age-appropriate evidence-based psychosocial intervention to treat ADHD and ADHD-related impairments  <u>Denominator:</u> # of patients ages 6-11 years diagnosed with ADHD	Medical record review	* Note that this measure combines 6bi and 6bii
6bi. FDA-approved ADHD medication for ages 6-11 years  (KAS 5b)	% of patients aged 6-11 years who received recommendations for FDA-approved medications to treat ADHD	Adapted from EQIPP course	<u>Numerator:</u> # of patients ages 6-11 years diagnosed with ADHD who received recommendation for FDA-approved medication to treat ADHD  <u>Denominator:</u> # of patients ages 6-11 years diagnosed with ADHD	Medical record review	This measure can be used to drill down from measure 6b

Measure	Measure Definition	Measure source	Measure Calculation	Data source/tool	Suggested target or benchmark (if available)
<b>Aim: Patients will receive treatment recommendations appropriate for age (continued)</b>					
6bii. Evidence-based psychosocial intervention to treat ADHD and related impairments for ages 6-11 years  (KAS 5b)	% of patients aged 6-11 years who received recommendations evidence-based psychosocial interventions such as PTBM, behavioral classroom intervention, or educational interventions to treat ADHD and related impairments	Adapted from EQIPP course	<u>Numerator:</u> # of patients ages 6-11 years diagnosed with ADHD who received recommendation for age-appropriate evidence-based psychosocial interventions to treat ADHD and ADHD-related impairments  <u>Denominator:</u> # of patients ages 6-11 years diagnosed with ADHD	Medical record review	This measure can be used to drill down from measure 6b
6ci. FDA-approved ADHD medication, with assent, for ages 12-17 years  (KAS 5c)	% of patients aged 12-17 years who received recommendations for FDA-approved medications to treat ADHD, with assent	Adapted from EQIPP course	<u>Numerator:</u> # of patients ages 12-17 years diagnosed with ADHD who received recommendation for FDA-approved medication to treat ADHD  <u>Denominator:</u> # of patients ages 12-17 years diagnosed with ADHD	Medical record review	
6cii. Evidence-based psychosocial interventions to treat ADHD and related impairments, with assent, for ages 12-17 years  (KAS 5c)	% of patients aged 12-17 years who received recommendations for evidence-based psychosocial interventions to treat ADHD and ADHD-related impairments, such as skills training, behavioral treatments, or educational interventions, with assent	Adapted from EQIPP course	<u>Numerator:</u> # of patients ages 12-17 years diagnosed with ADHD who received recommendation for age-appropriate evidence-based psychosocial interventions to treat ADHD and ADHD-related impairments  <u>Denominator:</u> # of patients ages 12-17 years diagnosed with ADHD	Medical record review	
7. Referral or treatment for patients with comorbid conditions  (KAS 7)	% of patients with suspected or confirmed comorbid conditions who received treatment or were referred to a subspecialist	Adapted from EQIPP course	<u>Numerator:</u> # of patients diagnosed with ADHD who received treatment or were referred for a suspected or confirmed comorbid condition  <u>Denominator:</u> # of patients diagnosed with ADHD and a suspected or confirmed comorbid condition  <u>Exclusion:</u> Patients with ADHD who do not have a suspected or confirmed comorbid condition	Medical record review	

Measure	Measure Definition	Measure source	Measure Calculation	Data source/tool	Suggested target or benchmark (if available)
<b>Aim: Patients will be monitored regularly and their treatment adjusted over time.</b>					
8. ADHD care plan reviewed  (KAS 4)	% of patients whose written ADHD care plan has been reviewed and updated if indicated	Adapted from EQIPP course	<u>Numerator:</u> # of patients with ADHD whose ADHD care plan has been reviewed and updated (if indicated) at the most recent follow-up visit  <u>Denominator:</u> # of patients with ADHD who have a written ADHD care plan  <u>Exclusion:</u> Patients with ADHD who do not have a written care plan	Medical record review	
9. Medication initiation follow-up within 2 weeks  (KAS 6)	% of patients initiating ADHD medication who are contacted within 2 weeks of initiation	Adapted from EQIPP course	<u>Numerator:</u> # of patients with ADHD initiating ADHD medication who were contacted within 2 weeks of initiation  <u>Denominator:</u> # of patients with ADHD who have initiated ADHD medication  <u>Exclusions:</u> (1) Patients not prescribed ADHD medication; (2) Patients who did not initiate ADHD medication within the specified time frame of data collection	Medical record review	
10. Medication initiation 30-day follow-up (KAS 6)	% of patients initiating ADHD medication who complete a follow-up visit within 30 days	Adapted from HEDIS (initiation phase)	<u>Numerator:</u> # of patients with ADHD initiating ADHD medication who completed a follow-up visit with a prescriber within 30 days of initiation  <u>Denominator:</u> # of patients with ADHD who have initiated ADHD medication  <u>Exclusions:</u> (1) Patients not prescribed ADHD medication; (2) Patients who did not initiate ADHD medication within the specified time frame of data collection	Medical record review	60%  NCQA: approximately 40-47% of pediatric patients with ADHD receive follow-up care after treatment initiation

Measure	Measure Definition	Measure source	Measure Calculation	Data source/tool	Suggested target or benchmark (if available)
<b>Aim: Patients will be monitored regularly and their treatment adjusted over time (continued)</b>					
11a. Medication follow-up visit frequency  *** for patients initiating ADHD medication  (KAS 6)	% of patients prescribed ADHD medication who complete at least 2 follow-up visits within 270 days of the first follow-up visit	Adapted from HEDIS (continuation and maintenance phase)	<u>Numerator:</u> # of patients prescribed ADHD medication and remained on the medication who completed at least 2 follow-up visits within 270 days of the first (i.e., 30-day) follow-up visit  <u>Denominator:</u> # of patients with ADHD who have initiated ADHD medication  <u>Exclusions:</u> (1) Patients not prescribed ADHD medication; (2) Patients who did not initiate ADHD medication within the specified time frame of data collection; (3) Patients who did not remain on the ADHD medication for at least 210 days	Medical record review	
11b. Medication follow-up visit frequency  *** for patients who have received ADHD medication for at least 12 months  (KAS 6)	% of patients prescribed ADHD medication who complete at least 2 follow-up visits within the past 12 months	From EQIPP course; adapted from HEDIS	<u>Numerator:</u> # of patients prescribed ADHD medication who completed at least 2 follow-up visits within the past 12 months  <u>Denominator:</u> # of patients with ADHD prescribed ADHD medication  <u>Exclusions:</u> (1) Patients not prescribed ADHD medication; (2) Patients who have initiated ADHD medication within the past 12 months (i.e., have not been on ADHD medication for at least 12 months)	Medical record review	
12. Informed medication decision at follow-up visits  (KAS 6)	% of patients prescribed medication whose dose was adjusted or maintained at medication follow-up visits based on information from validated ADHD rating scales from at least 2 major settings (e.g., home & school)	Adapted from EQIPP course  Similar to CQN ADHD collaborative measures 4 (Medication Titration Follow-Up) and 5 (Medication maintenance)	<u>Numerator:</u> # of patients prescribed ADHD medication whose dose was adjusted or maintained at medication follow-up visits based on information from validated ADHD rating scales from at least 2 major settings  <u>Denominator:</u> # of patients with ADHD prescribed ADHD medication  <u>Exclusion:</u> Patients not prescribed ADHD medication; patients whose medication was adjusted outside of a follow-up visit	Medical record review	60% (as per CQN ADHD collaborative)

Measure	Measure Definition	Measure source	Measure Calculation	Data source/tool	Suggested target or benchmark (if available)
<b>Aim: Patients will be monitored regularly and their treatment adjusted over time (continued)</b>					
13. Response to psychosocial interventions assessed within 6 months	% of patients receiving evidence-based psychosocial interventions whose response is assessed using validated ADHD rating scales from at least 2 major settings (e.g., home and school) within 6 months of initiating psychosocial treatment	Adapted from EQIPP course	<p><u>Numerator:</u> # of patients with ADHD receiving psychosocial interventions whose response is assessed using validated ADHD rating scales from at least 2 major settings within 6 months of initiating psychosocial treatment</p> <p><u>Denominator:</u> # of patients with ADHD receiving psychosocial interventions</p> <p><u>Exclusion:</u> Patients not receiving psychosocial interventions</p>	Medical record review	
14. Screening for emerging comorbid conditions	% of patients who are regularly screened for emerging comorbid conditions		<p><u>Numerator:</u> # of patients with ADHD who are screened for emerging comorbid conditions within the past 12 months</p> <p><u>Denominator:</u> # of patients with ADHD (may include those already identified with a comorbid condition)</p>	Medical record review	
15. Chronic care follow-up	% of patients with ADHD who have attended at least one ADHD follow-up care visit within the calendar year	AHRQ-CMS PQMP	<p><u>Numerator:</u> # of patients with ADHD who have attended at least one ADHD follow-up care visit within the calendar year</p> <p><u>Denominator:</u> # of patients with ADHD</p>	Claims data	63% of Medicaid enrollees; 49% of commercial enrollees



## PATIENT OUTCOME MEASURES

Measure	Measure Definition	Measure source	Measure Calculation	Data source/ tool	Suggested target or benchmark (if available)
Aim: Patients will have improved ADHD symptoms from baseline to the most recent follow-up visit.					
% with ADHD symptom score reduction - Parent	% of children with ADHD who demonstrate at least 25% reduction in parent-rated ADHD symptom score 6-12 months from baseline	Adapted from: Office of the National Coordinator for Health Information Technology; similar to NICHQ ADHD Collaborative	<p><b>Numerator:</b> # children with ADHD whose parent-rated ADHD total symptom score is reduced by at least 25% from baseline to 6-12 months after initiating any prescribed ADHD treatment</p> <p><b>Denominator:</b> # of children with ADHD who have initiated any prescribed ADHD treatment</p> <p><b>Exclusion:</b> Patients without parent Vanderbilt rating scales available at either initial assessment or most recent follow-up visit within 6-12 months after initiating prescribed ADHD treatment, or both</p>	Vanderbilt Parent Rating Scale	50% of patients  Research suggests patients can achieve ~40% reduction within 3 months of treatment
% with ADHD symptom score reduction - Teacher	% of children with ADHD who demonstrate at least 25% reduction in teacher-rated ADHD total symptom score 6-12 months from baseline	Adapted from: Office of the National Coordinator for Health Information Technology; similar to NICHQ ADHD Collaborative	<p><b>Numerator:</b> # children with ADHD whose teacher-rated ADHD total symptom score is reduced by at least 25% from baseline to 6-12 months after initiating any prescribed ADHD treatment</p> <p><b>Denominator:</b> # of children with ADHD who have initiated any prescribed ADHD treatment</p> <p><b>Exclusion:</b> Patients without teacher Vanderbilt rating scales available at either initial assessment or most recent follow-up visit within 6-12 months after initiating prescribed ADHD treatment, or both</p>	Vanderbilt Teacher Rating Scale	50% of patients  Research suggests patients can achieve ~40% reduction within 3 months of treatment

Average total symptom score reduction - Parent	Average percent reduction in parent-rated ADHD total symptom score	Adapted from CQN ADHD Collaborative, after NICHQ ADHD Collaborative	Reduction in parent-rated ADHD total symptom score from baseline (initial assessment) to the most recent follow-up visit (within 12 months of the initial assessment), averaged across all patients with ADHD diagnosed within the past 12 months  <u>Exclusion:</u> Patients without parent Vanderbilt rating scales available at either initial assessment or most recent follow-up visit, or both	Vanderbilt Parent Rating Scale	25% average reduction across all patients with ADHD
Average total symptom score reduction - Teacher	Average percent reduction in teacher-rated ADHD total symptom score	Adapted from CQN ADHD Collaborative, after NICHQ ADHD Collaborative	Reduction in teacher-rated ADHD total symptom score from baseline (initial assessment) to the most recent follow-up visit (within 12 months of the initial assessment), averaged across all patients with ADHD diagnosed within the past 12 months  <u>Exclusion:</u> Patients without teacher Vanderbilt rating scales available at either initial assessment or most recent follow-up visit, or both	Vanderbilt Teacher Rating Scale	25% average reduction across all patients with ADHD