AAVBC

AMERICAN ACADEMY OF VALUE BASED CARE

Severe Asthma

Quick Reference Guide

2026

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1 CLINICAL SNAPSHOT

Definition: Severe asthma is defined as asthma that remains *uncontrolled despite adherence to maximal optimized high-dose inhaled corticosteroid–long-acting beta-agonist (ICS-LABA) therapy* and management of contributory factors, or that requires high-dose ICS-LABA to prevent it from becoming uncontrolled. This is a retrospective diagnosis, established only after at least several months of optimized treatment have confirmed that lower-intensity therapy is insufficient. Severe asthma affects an estimated 3–10% of all individuals with asthma but drives a disproportionate share of morbidity, mortality, and healthcare expenditure — including emergency department visits, hospitalizations, and oral corticosteroid (OCS) dependence with attendant systemic toxicities (osteoporosis, adrenal suppression, hyperglycemia, cataracts).[1,2]

AAVBC PERSPECTIVE

Severe asthma remains systematically underdocumented in primary care, not from a knowledge gap, but because documentation practices have not kept pace with the evidence supporting severity stratification. Many patients carrying a generic "asthma" diagnosis meet the criteria for severe persistent disease based on symptom burden, exacerbation frequency, and treatment intensity, yet their records do not reflect this complexity. The goal is to help clinicians build a complete clinical picture — symptom frequency, trigger exposure, functional limitation, spirometry trends, and a stepwise treatment record so that disease severity is documented accurately and patients receive the escalation pathways they qualify for.

ICD-10 Codes

J45.50 (Severe persistent asthma)

Common comorbidity codes: J44.1 (COPD with exacerbation), J32.x (chronic sinusitis), J33.x (nasal polyp), E11.x (type 2 DM), M81.0 (osteoporosis), I25.x (ischemic heart disease), I50.x (heart failure), F32.x/F33.x (depression). The unspecified code J45.909 does not map to an HCC — this is the primary documentation gap.[3]

HCC/RAF V28 Mapping

DIAGNOSIS CATEGORY	ICD-10 SERIES	V28 HCC	RAF VALUE	CLINICAL DOCUMENTATION REQUIREMENT
Severe persistent asthma	J45.50, J45.51, J45.52	HCC 279	0.818	Severity classification as “severe persistent” supported by treatment history (high-dose ICS-LABA), symptom frequency, PFT results, exacerbation history. Retrospective — requires ≥2–3 months optimized therapy
Moderate persistent asthma	J45.40, J45.41, J45.42	HCC 279	0.818	Document moderate severity: daily symptoms, nighttime awakening >1×/week, some limitation of activity, FEV_1 60–80% predicted
Mild persistent asthma	J45.30–J45.32	No HCC	—	Symptoms >2 days/week but not daily. Does not risk-adjust
Mild intermittent asthma	J45.20–J45.22	No HCC	—	Symptoms ≤2 days/week. Does not risk-adjust
Unspecified asthma	J45.909	No HCC	—	Inadequate. No severity, no risk adjustment. Must be replaced with specific severity code

ABBREVIATIONS: *DM = diabetes mellitus; FEV_1 = forced expiratory volume in 1 second; HCC = Hierarchical Condition Category; ICS-LABA = inhaled corticosteroid–long-acting beta-agonist; PFT = pulmonary function test; RAF = risk adjustment factor; VBC = value-based care;* RAF values represent the Community Non-Dual Eligible Aged (CNA) coefficient from the 2024 CMS-HCC model; values vary across patient populations based on eligibility and care setting

Risk-Adjusted Care Resources per Patient/Year

Risk-adjusted care resource allocation — MA base rate ($10,402.34) × RAF coefficient; HCC 279

Severe and Moderate Persistent Asthma

$8,509

HCC 279 · RAF 0.818

Prevalence

Approximately **25–27 million** Americans currently have asthma (~7.7–8.0% of adults). Severe asthma affects an estimated **5–10%** of all asthma patients (~1.2–2.7 million U.S. individuals). Adults ≥65 have an estimated asthma prevalence of 6–8%, though underdiagnosis is well-documented due to symptom overlap with COPD, heart failure, and deconditioning. Total U.S. asthma-related costs estimated at **$50–82 billion** annually. Severe asthma patients generate an estimated **$12,000–$25,000+** PMPY vs. ~$3,000–$5,000 PMPY for mild-to-moderate disease.[2,4]

2 RECOGNITION AND DIAGNOSIS

Medicare Screenings

The following screenings are covered under Medicare for older adults with asthma and should be incorporated into the diagnostic and monitoring workflow[5,6]

TEST	COVERAGE	FREQUENCY	CPT CODE	WHAT IT MEASURES
Spirometry	Covered under Part B; medically necessary for diagnosis and monitoring	At diagnosis; every 1–2 years or with control change	94010	FEV_1, FVC, FEV_1/FVC ratio; airflow limitation and trend
Bronchodilator reversibility	Covered as part of PFT; medically necessary for diagnosis confirmation	At diagnosis; as needed for reclassification	94060	FEV_1 increase ≥12% AND ≥200 mL post-SABA confirms variable airflow limitation
Bronchial challenge	Covered when clinically indicated (diagnostic uncertainty)	As medically indicated	94070	Methacholine or mannitol challenge; confirms bronchial hyperresponsiveness
FeNO (exhaled nitric oxide)	Covered per MAC LCD; useful for biologic selection	At diagnosis; before biologic selection	95012	T2-high inflammation marker; ≥25 ppb suggests eosinophilic phenotype
CBC with differential	No frequency limit	At diagnosis; annually on biologic therapy	85025	Eosinophil count: ≥300 cells/µL = T2-high; ≥1,500 = anti-IL5/5Rα eligible
Allergy testing	Covered when clinically indicated	As needed for phenotyping	95004	Percutaneous allergen testing; identifies atopic phenotype for omalizumab eligibility

ABBREVIATIONS: *CBC = complete blood count; FeNO = fractional exhaled nitric oxide; FEV_1 = forced expiratory volume in 1 second; FVC = forced vital capacity; HbA1c = glycated hemoglobin; ICS = inhaled corticosteroid; LCD = local coverage determination; MAC = Medicare Administrative Contractor; OCS = oral corticosteroid; PFT = pulmonary function test; SABA = short-acting beta-agonist*

TEST	COVERAGE	FREQUENCY	CPT CODE	WHAT IT MEASURES
HbA1c/glucose	Covered as comorbidity assessment	During/after OCS courses; annually if repeated OCS	83036	OCS-induced hyperglycemia screening; fasting glucose >126 or HbA1c ≥6.5%

ABBREVIATIONS: *CBC = complete blood count; FeNO = fractional exhaled nitric oxide; FEV_1 = forced expiratory volume in 1 second; FVC = forced vital capacity; HbA1c = glycated hemoglobin; ICS = inhaled corticosteroid; LCD = local coverage determination; MAC = Medicare Administrative Contractor; OCS = oral corticosteroid; PFT = pulmonary function test; SABA = short-acting beta-agonist*

Subtle Early Signs

Severe asthma frequently presents with atypical or underrecognized patterns in older adults; the following signs warrant closer evaluation.[6–8]

- ***Persistent dry cough misattributed to ACE inhibitor or GERD*** → *Consider cough-variant asthma (J45.991); trial of ICS may clarify diagnosis*
- ***Exertional dyspnea attributed to "normal aging" or deconditioning*** → *Spirometry before and after bronchodilator; assess reversibility*
- ***Nocturnal awakening with chest tightness or wheezing*** → *Nighttime symptoms >2×/month suggest at minimum mild persistent asthma*
- ***Recurrent "bronchitis" episodes requiring antibiotics and/or prednisone*** → *Pattern of ≥2 OCS courses/year is a red flag for unrecognized severe asthma*
- ***Progressive activity self-limitation ("I just don't walk as far anymore")*** → *Reduced perception of airflow limitation in elderly; spirometry essential over subjective report*[25]
- ***Wheezing only during respiratory infections*** → *Infection-triggered exacerbations may be the only presenting pattern; assess between episodes*
- ***Increasing rescue inhaler use ("I've been using my albuterol more lately")*** → *SABA use >2 days/week indicates inadequate control; reassess severity*

Risk Factors

The following clinical and demographic factors are independently associated with increased risk of developing severe asthma or experiencing exacerbation[8–10]

FACTOR	RISK SIGNAL	EVIDENCE SUMMARY	CLINICAL IMPLICATION
Age ≥51–60 years	OR 3.90 (95% CI: 3.42–4.47)	Highest odds of developing severe asthma	Screen aggressively in this age group; do not attribute new-onset dyspnea solely to aging
Female sex	RR 1.24 (95% CI: 1.13–1.36)	Independent exacerbation risk factor	Lower threshold for severity reassessment in women with recurrent exacerbations
Prior exacerbations	RR 1.94 (95% CI: 1.61–2.32)	Strongest modifiable predictor	Each prior exacerbation increases future risk; document exacerbation history annually
Elevated eosinophils	RR 1.48 per 10-fold increase	T2-high inflammation marker	Check CBC with differential at diagnosis; ≥300 = biologic-eligible; ≥1,500 = anti-IL5
Elevated FeNO	RR 1.44 per 10-fold increase	Complementary T2 biomarker	≥25 ppb supports T2-high phenotype; guides biologic selection
Lower FEV_1/FVC ratio	RR 1.14 per 10% decrease	Airflow limitation severity marker	Serial spirometry essential; declining trend triggers escalation
Obesity (BMI)	RR 1.01 per kg/m^2	Dose-response exacerbation risk	Weight management is a therapeutic target; obese-asthma phenotype may be less responsive to ICS
Ex-smoker status	RR 1.32 (95% CI: 1.18–1.47)	Persistent risk even after cessation	Document pack-years (RR 1.04/ pack-year); consider asthma-COPD overlap
≥1 chronic comorbidity	OR 2.68 (95% CI: 1.35–5.31)	Cumulative burden	Screen for depression, GERD, obesity, rhinosinusitis, OSA at each visit
NSAID-exacerbated respiratory disease	OR 3.29 (95% CI: 1.75–6.19)	Strong risk for severe asthma	Screen before prescribing NSAIDs/ aspirin; avoid in confirmed NERD

ABBREVIATIONS: *BMI = body mass index; CI = confidence interval; COPD = chronic obstructive pulmonary disease; FeNO = fractional exhaled nitric oxide; FEV_1 = forced expiratory volume in 1 second; FVC = forced vital capacity; GERD = gastroesophageal reflux disease; ICS = inhaled corticosteroid; NERD = NSAID-exacerbated respiratory disease; OR = odds ratio; OSA = obstructive sleep apnea; RR = relative risk*

CLINICAL PEARL: REASSESS TRIGGERS BEFORE ESCALATING THERAPY

In difficult-to-treat or severe asthma, review home, work, smoke/vape, allergen, mold, pest, animal, and chemical exposures before therapy escalation. Consider targeted allergy testing when symptoms correlate with exposure. Document the exposure, clinical pattern, intervention, and follow-up plan.

RED FLAGS — URGENT ACTION

The following presentations indicate severe or life-threatening exacerbation and require immediate escalation or transfer[10–12]

- ***Drowsiness, confusion, or silent chest:*** *Life-threatening asthma.* ***Immediate ICU/ED transfer****; start continuous SABA nebulization, IV corticosteroids, O_2 to target 94–98%*
- ***Inability to speak in full sentences or cyanosis:*** *Severe exacerbation.* ***Immediate ED transfer****; inhaled SABA + ipratropium, systemic corticosteroids, consider IV magnesium*
- ***SpO_2 <92% on room air:*** *Hypoxemia.* ***Hospitalize****; supplemental O_2 immediately. Note: pulse oximetry may overestimate saturation in patients with dark skin*
- ***Pre-treatment FEV_1 or PEF <25% predicted:*** *Critical airflow limitation.* ***Hospitalize****; reassess after initial bronchodilator therapy*
- ***Rescue inhaler provides no relief or <4 hours duration:*** *Treatment failure.* ***Urgent evaluation****; escalate to nebulized therapy and systemic corticosteroids*
- ***≥2 OCS bursts in past 12 months:*** *Recurrent exacerbation pattern.* ***Specialist referral*** *for biologic evaluation; initiate OCS complication monitoring*

Diagnostic Thresholds

Objective measurement is essential for confirming asthma diagnosis and severity; the following thresholds guide clinical interpretation[5]

TEST	DIAGNOSTIC VALUE	NOTES
Spirometry (FEV_1/FVC)	FEV_1/FVC ratio reduced below LLN	Confirms airflow limitation. Use GLI reference values. Reduced ratio alone does not confirm asthma — must demonstrate variability

ABBREVIATIONS: *ACQ = Asthma Control Questionnaire; ACT = Asthma Control Test; FeNO = fractional exhaled nitric oxide; FEV_1 = forced expiratory volume in 1 second; FVC = forced vital capacity; GLI = Global Lung Function Initiative; IgE = immunoglobulin E; LLN = lower limit of normal; MCID = minimal clinically important difference; OCS = oral corticosteroid; PC_{20} = provocative concentration causing 20% fall in FEV_1; PEF = peak expiratory flow; SABA = short-acting beta-agonist*

TEST	DIAGNOSTIC VALUE	NOTES
Bronchodilator reversibility	FEV_1 increase ≥12% AND ≥200 mL post-SABA	Confirms variable airflow limitation. If negative, does not exclude asthma — repeat when symptomatic or after withholding bronchodilators
PEF variability	≥20% diurnal variation (adults)	Alternative to spirometry for monitoring. Best of 3 readings, twice daily for 2 weeks
Bronchial challenge (methacholine)	PC_{20} <4 mg/mL (moderate-to-high sensitivity)	High sensitivity but moderate specificity. Useful when spirometry is normal but asthma suspected
FeNO	≥25 ppb = T2-high inflammation	Supports eosinophilic phenotype. Elevated FeNO + eosinophilia strongly predicts biologic response
Blood eosinophils	≥300 cells/μL = T2-high; ≥1,500 = anti-IL5/5Rα eligible	Check pre-OCS for accurate baseline. OCS suppresses eosinophil count within 24–48 hours
Serum total IgE	Elevated + allergen sensitization = omalizumab eligible	Must be measured before initiating omalizumab; not useful for monitoring
ACT score	≤20: well controlled; 16–19: not well controlled; ≤15: very poorly controlled	5-item patient questionnaire. Administer at every visit to track control trajectory
ACQ-5 score	<0.75: well controlled; >1.5: uncontrolled; MCID: 0.5	Validated clinician tool. Scores >1.5 trigger treatment escalation

ABBREVIATIONS: *ACQ = Asthma Control Questionnaire; ACT = Asthma Control Test; FeNO = fractional exhaled nitric oxide; FEV_1 = forced expiratory volume in 1 second; FVC = forced vital capacity; GLI = Global Lung Function Initiative; IgE = immunoglobulin E; LLN = lower limit of normal; MCID = minimal clinically important difference; OCS = oral corticosteroid; PC_{20} = provocative concentration causing 20% fall in FEV_1; PEF = peak expiratory flow; SABA = short-acting beta-agonist*

Clues to Dig Deeper

When initial findings are inconclusive, the following clinical patterns suggest underlying or undertreated severe asthma warranting further evaluation[5]

- ***Recurrent "bronchitis" treated with antibiotics + prednisone:*** *Confirm with* ***spirometry and bronchodilator reversibility testing*** *— pattern suggests undiagnosed asthma rather than recurrent infection*
- ***Persistent symptoms despite adherent ICS-LABA therapy:*** *Before escalating, assess* ***inhaler technique, adherence, and comorbidities*** *(GERD, rhinosinusitis, obesity, OSA). Difficult-to-treat ≠ severe asthma*[3]

- ***New wheezing in a patient on beta-blockers or NSAIDs:*** *Evaluate* ***medication-induced bronchospasm****; switch to cardioselective beta-blocker; screen for NERD (OR 3.29 for severe asthma)*
- ***Dyspnea with both expiratory and inspiratory components in a smoker:*** *Evaluate for* ***asthma-COPD overlap****; check post-bronchodilator spirometry, eosinophils, and FeNO to guide treatment*
- ***Progressively increasing SABA use (>2 canisters/month):*** *Document SABA dispensing history; >6 canisters/year = poor control. Reassess severity, adherence, and triggers*

Common Oversights

The following errors in recognition and management frequently delay appropriate diagnosis or escalation in severe asthma[11,13–16]

- ***Not distinguishing difficult-to-treat from true severe asthma*** → *Rule out modifiable factors (poor adherence, incorrect technique, untreated comorbidities, ongoing trigger exposure) before confirming "severe"*
- ***Accepting dyspnea as "normal aging" without spirometry*** → *Older adults underperceive airflow limitation. Always confirm with objective spirometry rather than relying on subjective symptom reporting*[25]
- ***Failing to obtain pre-OCS eosinophil count before initiating systemic steroids*** → *OCS suppresses eosinophils within 24–48 hours. A post-OCS count may misclassify T2-high patients as T2-low, precluding appropriate biologic selection*
- **Failure to Investigate Eosinophilia Causes:** If blood eosinophils are ≥300/µL, non-asthma causes should be excluded, including parasitic infection (e.g., Strongyloides serology), as treatment with OCS or biologics in untreated parasitic infection could lead to disseminated disease. Hypereosinophilia (≥1500/µL) should prompt consideration of eosinophilic granulomatosis with polyangiitis (EGPA)

Key Differentials in Elderly

Dyspnea and airflow limitation in older adults may reflect several overlapping conditions; the following differentials should be systematically evaluated before attributing symptoms to asthma alone.[5,17,18]

CATEGORY	CLINICAL FINDING/ TEST	SEVERE ASTHMA	PRIMARY DIFFERENTIALS AND MIMICS
History pattern	Symptom variability over time	Episodic wheezing, dyspnea, chest tightness with identifiable triggers; symptoms vary over time and intensity	COPD: progressive, persistent dyspnea; HF: orthopnea, PND, edema; Deconditioning: gradual exercise intolerance
Spirometry	FEV_1/FVC ratio and reversibility	Reduced ratio with ≥12% + 200 mL reversibility post-SABA; variable airflow limitation	COPD: reduced ratio with minimal reversibility (<12%); HF: may have restrictive pattern; VCD: flattened inspiratory loop
Biomarkers	Eosinophils, FeNO, IgE	Eosinophils ≥300, FeNO ≥25 ppb, elevated IgE suggest T2-high phenotype	COPD: eosinophils may be elevated in overlap; HF: BNP/NT-proBNP elevated; GERD: normal biomarkers
Imaging	Chest X-ray/CT findings	Usually normal or hyperinflation during exacerbation; no structural changes	COPD: emphysema, bullae; HF: cardiomegaly, effusions, Kerley B lines; Bronchiectasis: airway dilation on CT
Response to treatment	ICS-LABA trial	Significant improvement with ICS-LABA; bronchodilator-responsive	COPD: partial response; HF: responds to diuretics, not inhalers; VCD: responds to speech therapy

ABBREVIATIONS: *BNP = B-type natriuretic peptide; COPD = chronic obstructive pulmonary disease; CT = computed tomography; FeNO = fractional exhaled nitric oxide; FEV_1 = forced expiratory volume in 1 second; FVC = forced vital capacity; GERD = gastroesophageal reflux disease; HF = heart failure; ICS-LABA = inhaled corticosteroid–long-acting beta-agonist; IgE = immunoglobulin E; PND = paroxysmal nocturnal dyspnea; SABA = short-acting beta-agonist; VCD = vocal cord dysfunction*

Comorbidity Screening

Comorbidities are common drivers of poor asthma control and should be assessed systematically at diagnosis and during each annual review.[19–21]

CONDITION	CLINICAL RELEVANCE IN SEVERE ASTHMA	SCREENING	NOTES
COPD/Asthma-COPD overlap	Common in adults environmental exposures;smokers/ex-smokers	Post-BD spirometry, smoking history	Distinguish from pure asthma; may need combined ICS-LABA + LAMA approach

ABBREVIATIONS: *BD = bronchodilator; BMI = body mass index; CRSwNP = chronic rhinosinusitis with nasal polyps; DEXA = dual-energy X-ray absorptiometry; GERD = gastroesophageal reflux disease; HbA1c = glycated hemoglobin; ICS = inhaled corticosteroid; LABA = long-acting beta-agonist; LAMA = long-acting muscarinic antagonist; OCS = oral corticosteroid; OSA = obstructive sleep apnea; PPI = proton pump inhibitor*

CONDITION	CLINICAL RELEVANCE IN SEVERE ASTHMA	SCREENING	NOTES
GERD	Common in severe asthma; may worsen cough, nocturnal symptoms, and perceived control	Symptom assessment; PPI trial if suspected	PPI therapy is not recommended solely to improve asthma control in asymptomatic reflux. Treat documented or symptomatic GERD as part of the overall care plan.
Chronic rhinosinusitis/ nasal polyps	RR 1.16–1.20 for exacerbations	Sinus symptoms, nasal endoscopy	CRSwNP predicts eosinophilic phenotype; dupilumab/mepolizumab effective for both
Obesity	Common modifiable contributor; associated with worse symptoms, exacerbation risk, reduced quality of life, and lower ICS responsiveness	BMI and weight trajectory; assess activity limitation, sleep apnea symptoms, reflux, and weight-related dyspnea	Avoid assuming all dyspnea is asthma. Weight loss, physical activity support, and treatment of related conditions may improve asthma control.
Depression/ anxiety	Can affect symptom perception, inhaler use, follow-up, and hospitalization risk	PHQ-9 and/or GAD-7 when clinically appropriate; at least annually in high-risk patients	Document the barrier or symptom pattern without judgment. Treat behavioral health conditions as part of asthma care, not as separate “adherence problems.”
Diabetes mellitus	OCS-induced hyperglycemia risk	HbA1c during/after OCS courses	Monitor glucose with OCS use; may need temporary insulin adjustment
Osteoporosis	OCS exposure accelerates bone loss, especially in older adults	DEXA if cumulative OCS ≥3 months or ≥2 bursts/year	Calcium/vitamin D supplementation; bisphosphonate if T-score ≤−2.5
Obstructive sleep apnea	Contributes to nocturnal symptoms	STOP-BANG screening	Treat OSA to improve asthma control and reduce nocturnal exacerbations

ABBREVIATIONS: *BD = bronchodilator; BMI = body mass index; CRSwNP = chronic rhinosinusitis with nasal polyps; DEXA = dual-energy X-ray absorptiometry; GERD = gastroesophageal reflux disease; HbA1c = glycated hemoglobin; ICS = inhaled corticosteroid; LABA = long-acting beta-agonist; LAMA = long-acting muscarinic antagonist; OCS = oral corticosteroid; OSA = obstructive sleep apnea; PPI = proton pump inhibitor*

Staging/Severity by Frailty

Frailty meaningfully influences disease severity and clinical approach; the following framework integrates functional capacity with asthma severity to guide individualized care.[22,23]

SEVERITY (GINA)	DEFINITION	TREATMENT LEVEL	ROBUST PATIENT	PRE-FRAIL/FRAIL PATIENT
Mild	Well controlled with low-intensity treatment (GINA Steps 1–2)	PRN low-dose ICS-formoterol OR low-dose ICS + SABA	Standard management; annual reassessment	Emphasize inhaler technique assessment; consider DPI if coordination intact
Moderate	Well controlled with Step 3–4 treatment	Low- or medium-dose ICS-LABA (SMART preferred)	Standard escalation pathway; monitor q6 months	Assess fall risk with beta-agonist tremor; simplify with SMART (single device)
Severe	Uncontrolled despite high-dose ICS-LABA OR requires high-dose ICS-LABA to maintain control	High-dose ICS-LABA ± LAMA, biologics, OCS	Full biologic evaluation if qualifying; aggressive OCS-sparing	Heightened OCS complication monitoring (bone density, glucose, adrenal function); inhaler device matched to functional capacity

ABBREVIATIONS: *DPI = dry powder inhaler; GINA = Global Initiative for Asthma; ICS = inhaled corticosteroid; LABA = long-acting beta-agonist; LAMA = long-acting muscarinic antagonist; OCS = oral corticosteroid; PRN = as needed; SABA = short-acting beta-agonist; SMART = single maintenance and reliever therapy*

Note: *Asthma severity is assessed retrospectively — only after at least 2–3 months of optimized therapy. Do not assign severity prospectively based on initial symptom burden. GINA distinguishes symptom control (current state) from severity (minimum treatment intensity required to maintain control).*

3 MEAT DOCUMENTATION ESSENTIALS

71 y/o female with severe persistent asthma (J45.50). Hospitalized 4 months ago; 3 OCS bursts in past 12 months despite adherence to fluticasone-salmeterol 500/50 BID + tiotropium. Nighttime awakenings 3–4×/week, unable to walk >1 block.[24,25]

MONITOR: "ACT 14/25 (very poorly controlled). Daytime symptoms 5–6 d/wk, nocturnal 3–4×/wk, SABA use 4–5 d/wk. PEF 220–280 L/min (pred 380), 22% diurnal variability. SpO_2 94% RA. Adherence confirmed (12/12 refills). Eosinophils 420/µL, FeNO 48 ppb."

EVALUATE: "FEV_1 1.38 L (58% pred), declining from 62% over 6 months. Post-BD improvement 10%/140 mL (below threshold). Bilateral expiratory wheezes. Inhaler technique adequate. Comorbidities: CRSwNP (active), GERD (controlled), PHQ-9: 4."

ASSESS: "Severe persistent asthma, uncontrolled on maximal triple therapy with confirmed adherence. T2-high phenotype. OCS-dependent. Declining lung function. Meets biologic criteria per CHEST 2026 guidelines."

TREAT: "Continue triple therapy. Refer pulmonary/allergy for dupilumab (T2-high + CRSwNP). PA initiated for dupilumab 400 mg load → 200 mg q2wk. Order DEXA and HbA1c for OCS complications. Updated action plan. F/U 4 weeks; pulmonology within 2 weeks."

Clinical Documentation Elements

Reflecting disease chronicity, severity, and clinical trajectory

- ***Link clinical relationships:*** *Document the connection between severe asthma and its complications explicitly. "OCS-induced osteoporosis secondary to recurrent systemic corticosteroid courses for severe persistent asthma (J45.50)" — not "osteoporosis" and "asthma" separately*
- ***Specify severity and control status:*** *"Severe persistent asthma, uncontrolled (ACT 14)" — not "asthma" or "asthma, stable." Severity classification requires treatment intensity; control status requires validated tool score*
- ***Include current functional data:*** *"FEV_1 1.38 L (58% predicted) on 3/31/2026, declined from 1.55 L (62%) on 9/30/2025" — not "PFTs show obstruction." Dates and trends anchor clinical assessment*
- ***Document exacerbation history annually:*** *Number of OCS bursts, ED visits, and hospitalizations in the past 12 months. This history is required for severity classification and biologic eligibility*
- ***Record phenotype biomarkers before OCS:*** *Eosinophil count and FeNO must be obtained pre-OCS for accurate phenotyping. Document "pre-OCS eosinophils 420 cells/μL" to anchor biologic selection*

Reframing Common Documentation Shortcuts

INSTEAD OF…	DOCUMENT…	WHY DOES THIS SUPPORT CLARITY?
"Asthma"	"Severe persistent asthma, uncontrolled (ACT 14), FEV_1 58% predicted (3/31/26)"	Documents severity, control status, and objective measure — supports J45.50 and HCC 279
"Asthma, stable"	"Severe persistent asthma, controlled on high-dose ICS-LABA + LAMA + dupilumab (ACT 22)"	Documents treatment intensity required for control — this is how GINA defines severity retrospectively

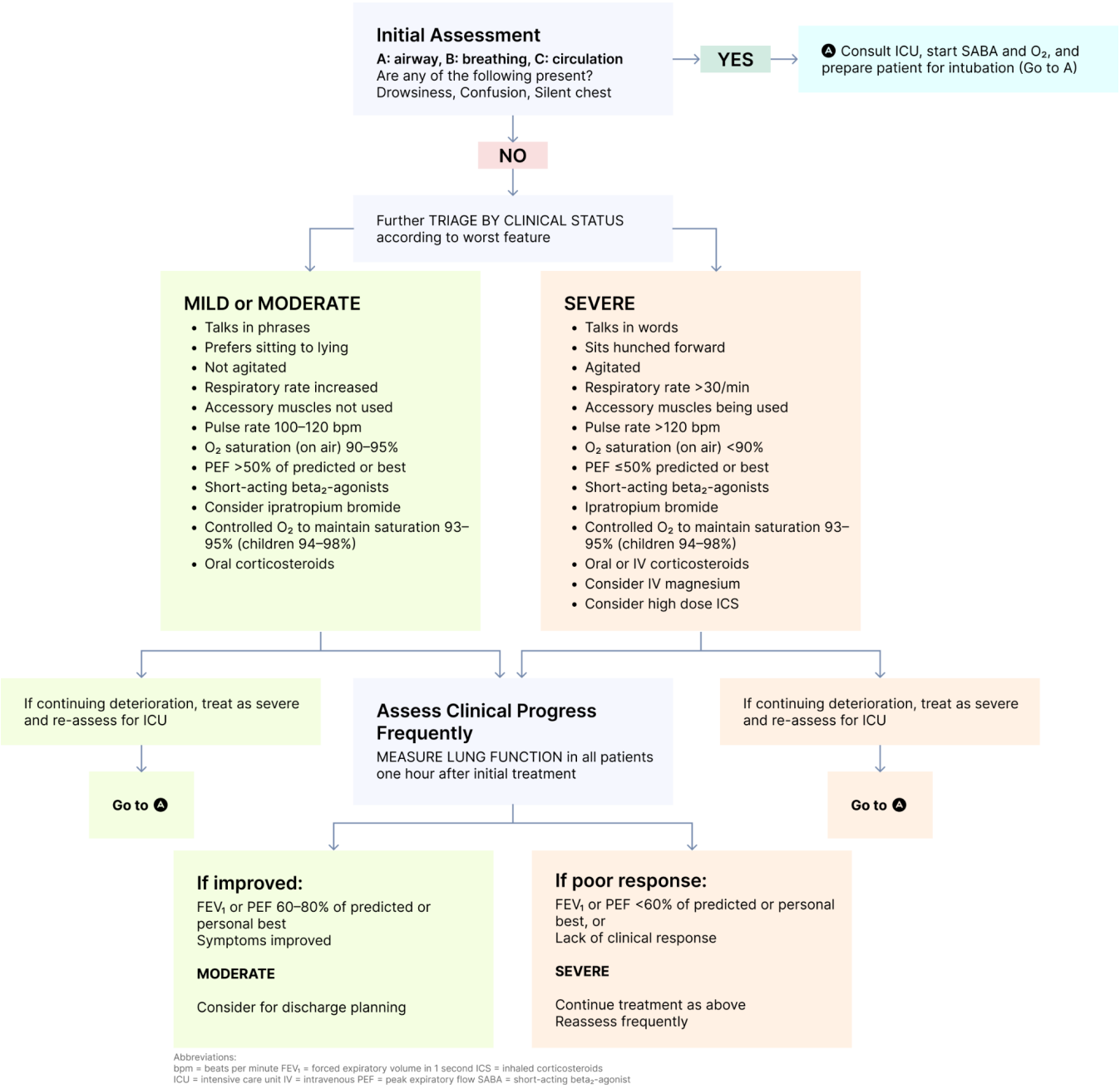
ABBREVIATIONS: *ACT = Asthma Control Test; CRSwNP = chronic rhinosinusitis with nasal polyps; DEXA = dual-energy X-ray absorptiometry; eos = eosinophils; FeNO = fractional exhaled nitric oxide; FEV_1 = forced expiratory volume in 1 second; HbA1c = glycated hemoglobin; HCC = Hierarchical Condition Category; ICS-LABA = inhaled corticosteroid–long-acting beta-agonist; LAMA = long-acting muscarinic antagonist; OCS = oral corticosteroid*

INSTEAD OF…	DOCUMENT...	WHY DOES THIS SUPPORT CLARITY?
“Shortness of breath”	“Exertional dyspnea with expiratory wheezing, ACT 14, FEV_1 58% predicted, consistent with uncontrolled severe persistent asthma”	Links symptom to diagnosis with objective data; prevents attribution to aging or deconditioning
“Continue inhalers”	“Continue fluticasone-salmeterol 500/50 mcg BID + tiotropium 2.5 mcg daily; response inadequate (3 OCS bursts/12 mo) — biologic referral initiated”	Documents treatment response, escalation rationale, and clinical decision-making
“Refill prednisone”	“Prednisone 40 mg ×5 days for acute exacerbation (3rd burst in 12 months); DEXA and HbA1c ordered per OCS complication monitoring protocol”	Connects treatment to exacerbation frequency and triggers complication surveillance
“Refer to pulmonology”	“Referral to pulmonology for biologic initiation: dupilumab recommended per CHEST 2026 — T2-high (eos 420, FeNO 48), comorbid CRSwNP, OCS-dependent (3 bursts/12 mo)”	Specifies clinical rationale, phenotype data, and guideline alignment for referral

ABBREVIATIONS: *ACT = Asthma Control Test; CRSwNP = chronic rhinosinusitis with nasal polyps; DEXA = dual-energy X-ray absorptiometry; eos = eosinophils; FeNO = fractional exhaled nitric oxide; FEV_1 = forced expiratory volume in 1 second; HbA1c = glycated hemoglobin; HCC = Hierarchical Condition Category; ICS-LABA = inhaled corticosteroid–long-acting beta-agonist; LAMA = long-acting muscarinic antagonist; OCS = oral corticosteroid*

4 TREATMENT & REFERRAL QUICK GUIDE

Initial Management: Patient Presents to Primary Care



Abbreviations:
bpm = beats per minute FEV_1 = forced expiratory volume in 1 second ICS = inhaled corticosteroids
ICU = intensive care unit IV = intravenous PEF = peak expiratory flow SABA = short-acting $beta_2$-agonist

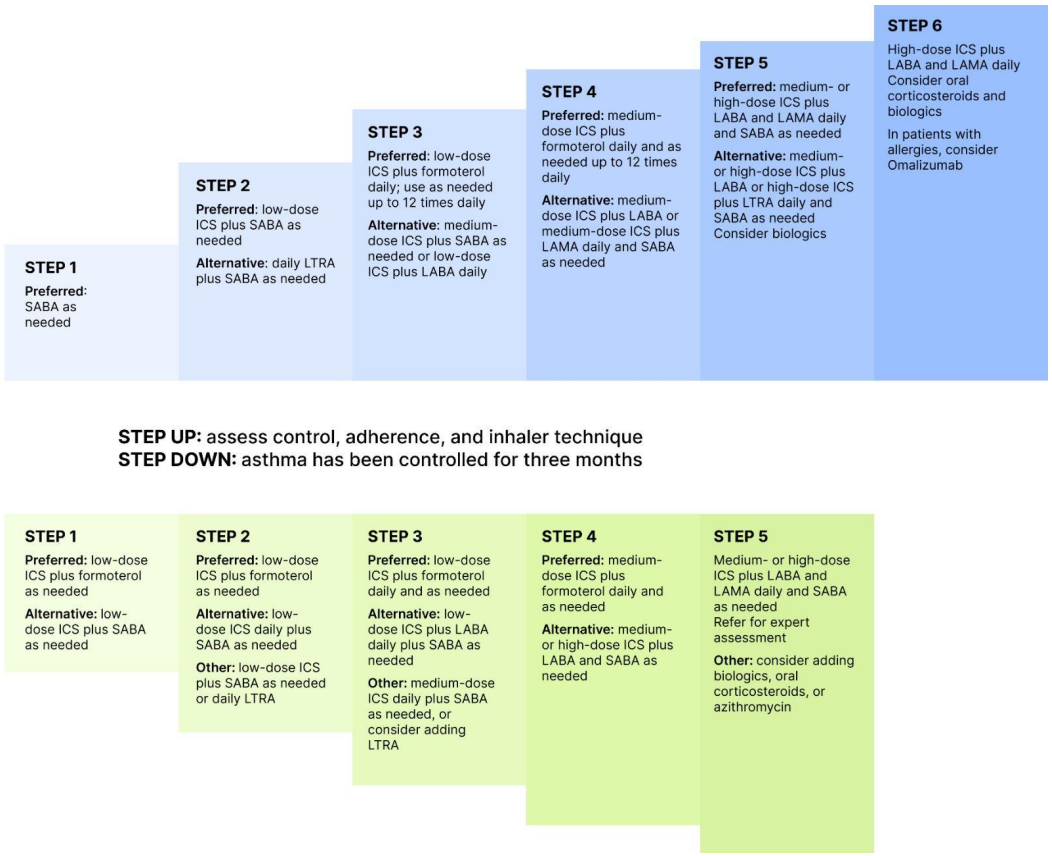
SMART Therapy Implementation

Single Maintenance and Reliever Therapy (SMART) framework provides a few key benefits: Regimen simplification, exacerbation reduction, and decreased emergency healthcare utilization.[15,25,29,30]

CONTROLLER and **PREFERRED RELIEVER** (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever

***Each step**: check adherence, patient education, environmental control, and comorbidity management*

CONTROLLER and **ALTERNATIVE RELIEVER** (Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller



Therapy Escalation Criteria

The following criteria guide the decision to escalate controller therapy, including step-up in medication intensity or initiation of biologic evaluation

TRIGGER	ACTION	ELDERLY CONSIDERATIONS
Symptoms >2 days/week on low-dose ICS-formoterol SMART	Escalate to medium-dose ICS-formoterol SMART (Step 4)	Assess inhaler technique at every visit; consider soft mist inhaler if DPI coordination impaired
Persistent symptoms on medium-dose ICS-LABA ×2–3 months	Add LAMA (tiotropium 2.5 mcg or umeclidinium) → Triple therapy	17% exacerbation reduction with LAMA add-on; monitor for anticholinergic burden in polypharmacy
Uncontrolled on triple therapy + ≥2 OCS bursts/year	Refer for biologic evaluation (Step 5); see phenotype algorithm below	Obtain pre-OCS eosinophils and FeNO before referral; frail patients: prioritize OCS-sparing

***ABBREVIATIONS:** DPI = dry powder inhaler; FeNO = fractional exhaled nitric oxide; ICS = inhaled corticosteroid; LABA = long-acting beta-agonist; LAMA = long-acting muscarinic antagonist; OCS = oral corticosteroid; SMART = single maintenance and reliever therapy*

TRIGGER	ACTION	ELDERLY CONSIDERATIONS
≥1 hospitalization/year for asthma	Urgent specialist referral (<2 weeks); biologic initiation[26]	Higher mortality risk in elderly hospitalizations; lower threshold for biologic referral
OCS-dependent (unable to taper below daily OCS)	Biologic initiation for OCS-sparing (47% reduction with anti-IL5/5Rα; 28% with dupilumab)	OCS complications compound in elderly: osteoporosis, diabetes, adrenal suppression, cataracts, immunosuppression

ABBREVIATIONS: *DPI = dry powder inhaler; FeNO = fractional exhaled nitric oxide; ICS = inhaled corticosteroid; LABA = long-acting beta-agonist; LAMA = long-acting muscarinic antagonist; OCS = oral corticosteroid; SMART = single maintenance and reliever therapy*

AAVBC PERSPECTIVE

*The key to managing severe asthma is **triangulating** the patient's specific phenotype with a robust **maintenance and reliever therapy (MART)** protocol and a documented **Action Plan** to prevent hospitalization.*
***For accurate documentation**, obtain PFTs (spirometry) to document a post-bronchodilator increase in FEV_1 of >12% and >200 mL. This confirms the physiologic basis of the disease. Avoid "Unspecified" Coding: Refrain from using J45.909 (Unspecified asthma), which provides zero risk-adjustment value under the V28 model.Establish Severity: Use the PFT data and medication burden to justify coding for Moderate Persistent (J45.40) or Severe Persistent (J45.50).*

Asthma Control and Check-up

Per GINA 2025, to assess recent symptom control, clinicians should ask about the following in the past 4 weeks:[22]

- Daytime asthma symptoms more than twice/week?
- Any night waking due to asthma?
- SABA reliever for symptoms more than twice/week? (for patients using SABA reliever)
- Any activity limitation due to asthma?

Control Classification:

- Well controlled: None of the above
- Partly controlled: 1–2 of the above
- Uncontrolled: 3–4 of the above
- Nighttime Symptoms in Severity Classification (US/NHLBI Criteria)

The US guidelines retain a symptom-based severity classification that includes nighttime awakenings as a specific criterion:

SEVERITY	NIGHT TIME AWAKENINGS	DAYTIME SYMPTOMS	SABA USE	FEV_1
Intermittent	≤2×/month	≤2 days/week	≤2 days/week	≥80% predicted
Mild Persistent	3–4×/month	>2 days/week but not daily	>2 days/week but not daily	≥80% predicted
Moderate Persistent	>1×/week but not nightly	Daily	Daily	60–80% predicted
Severe Persistent	**Every night (nightly)**	Throughout the day	Several times/ day	60% predicted

FDA-Approved Biologic Agents for Severe Asthma

When are biologics considered?[14,16,17]

Biologic therapy is initiated at **Step 5 (SMART framework)** — the highest treatment step for severe asthma. Per GINA 2025, biologics are considered as add-on therapy for patients with uncontrolled severe asthma despite optimized maximal therapy (high-dose ICS-LABA ± LAMA), who have allergic or eosinophilic biomarkers or require maintenance OCS.

Prerequisites Before Initiating Biologics at Step 5:

Per GINA 2025 and CHEST 2026, biologics should only be considered after the following have been confirmed:[22,24]

- **Adherence verified** — pharmacy refill records, electronic monitoring, or direct observation
- **Inhaler technique assessed** — up to 80% of patients use inhalers incorrectly
- **Comorbidities addressed** — GERD, chronic rhinosinusitis, obesity, OSA, vocal cord dysfunction, dysfunctional breathing
- **Triggers minimized** — allergen exposure, occupational exposures, smoking cessation
- **Treatment optimized** — at least 3–6 months on high-dose ICS-LABA ± LAMA

Biomarker Eligibility for Biologics

Per NEJM 2023, the asthma phenotype guiding biologic selection is determined by:

- Blood eosinophils ≥150 cells/µL (≥300 cells/µL for stronger response prediction)
- FeNO ≥20–25 ppb
- Sputum eosinophils ≥2%
- Sensitization to perennial aeroallergen (for omalizumab)

- Total IgE 30–700 IU/mL (for omalizumab)

CLINICAL PEARLS

- **Biologic selection is not interchangeable.** Biologic selection depends on phenotype and biomarker profile.
- **Biologics are NOT indicated at Steps 1–4** — they are reserved for Step 5 (severe asthma) only after treatment optimization
- **Referral to specialist is recommended at Step 5** for phenotyping and biologic selection
- **Trial duration: At least 4 months** is needed to assess initial response to a biologic
- **OCS-sparing:** Mepolizumab, benralizumab, and dupilumab have demonstrated OCS-sparing effects in clinical trials
- **Maintenance OCS should only be used as a last resort** at the lowest possible dose due to serious short- and long-term systemic side effects

Biologic Agents

Biologic selection in severe asthma should be guided by phenotype, biomarker eligibility, exacerbation history, oral corticosteroid exposure, comorbid type 2 disease, route preference, and safety profile[14,16,17]

BIOLOGIC AGENT (BRAND)	TARGET/ MECHANISM	ROUTE/ DOSE	KEY BIOMARKER ELIGIBILITY	EFFICACY HIGHLIGHTS	SAFETY CONSIDERATIONS
Omalizumab (Xolair) *biosimilar available—Omlyclo*	IgE; binds to Fc part of free IgE, inhibiting binding to mast cells and basophils	SC 75–375 mg q2–4wk (dose by weight and IgE level); ≥6 yr	Sensitization to perennial aeroallergen + pretreatment total serum IgE	Reduced exacerbations; moderate effect on FEV_1; improved QoL	Anaphylaxis in ~0.2%; SSLR and EGPA reported; generic biosimilar now available

ABBREVIATIONS: *AD = atopic dermatitis; AEC = absolute eosinophil count; CRSwNP = chronic rhinosinusitis with nasal polyps; EGPA = eosinophilic granulomatosis with polyangiitis; FeNO = fractional exhaled nitric oxide; FEV_1 = forced expiratory volume in 1 second; IgE = immunoglobulin E; IL = interleukin; ILC2 = type 2 innate lymphoid cells; IV = intravenous; OCS = oral corticosteroid; QoL = quality of life; SC = subcutaneous; SSLR = serum sickness–like reaction; TSLP = thymic stromal lymphopoietin; VBC = value-based care*

BIOLOGIC AGENT (BRAND)	TARGET/ MECHANISM	ROUTE/ DOSE	KEY BIOMARKER ELIGIBILITY	EFFICACY HIGHLIGHTS	SAFETY CONSIDERATIONS
Mepolizumab (Nucala)	IL-5; prevents binding to IL-5Rα on eosinophils	SC 100 mg q4wk; ≥6 yr (prefilled syringe/ autoinjector)	Peripheral blood AEC ≥150/μL	Reduced exacerbations; OCS-sparing 47%; small improvement in FEV_1 and QoL	Herpes zoster reactivation; case reports of anaphylaxis
Benralizumab (Fasenra)	IL-5Rα; binds to IL-5Rα on eosinophils and basophils, marking for cell-mediated cytotoxicity	SC 30 mg q4wk ×3, then q8wk; ≥12 yr	Peripheral blood AEC ≥150/μL	Reduced exacerbations; near-complete eosinophil depletion; OCS reduction; improved FEV_1 and QoL	Headache; pharyngitis
Reslizumab (Cinqair)	IL-5; binds to circulating IL-5	IV 3 mg/kg q4wk; ≥18 yr	Peripheral blood AEC ≥400/μL	Reduced exacerbations; anaphylaxis occurs in 0.3%	Requires IV infusion facility; anaphylaxis risk
Dupilumab (Dupixent)	IL-4Rα; blocks IL-4 and IL-13 signaling in type 2 lymphocytes, dendritic cells, and smooth muscle cells	SC 400 mg then 200 mg q2wk (or 600/300 mg for OCS-dependent); ≥6 yr	Peripheral blood AEC ≥150/μL or FeNO ≥25 ppb; highest VBC value if comorbid AD or nasal polyps	Reduced exacerbations; improved FEV_1; OCS-sparing 28%; also treats AD and CRSwNP	Transient blood eosinophilia; EGPA and eosinophilic pneumonia reported; injection site reactions
Tezepelumab (Tezspire)	TSLP; prevents TSLP binding to receptor on dendritic cells, mast cells, ILC2, and T cells	SC 210 mg q4wk; ≥12 yr	Effective across broad range of peripheral blood AECs; only biologic for T2-low asthma	Exacerbation reduction 58% (including T2-low); improved lung function	Live vaccines should be avoided

ABBREVIATIONS: *AD = atopic dermatitis; AEC = absolute eosinophil count; CRSwNP = chronic rhinosinusitis with nasal polyps; EGPA = eosinophilic granulomatosis with polyangiitis; FeNO = fractional exhaled nitric oxide; FEV_1 = forced expiratory volume in 1 second; IgE = immunoglobulin E; IL = interleukin; ILC2 = type 2 innate lymphoid cells; IV = intravenous; OCS = oral corticosteroid; QoL = quality of life; SC = subcutaneous; SSLR = serum sickness–like reaction; TSLP = thymic stromal lymphopoietin; VBC = value-based care*

CLINICAL PEARL

***Omalizumab (Xolair) is the only asthma biologic with an FDA-approved biosimilar — omalizumab-igec (Omlyclo)**, approved in March 2025. **No generics or biosimilars** are currently available for mepolizumab, benralizumab, reslizumab, dupilumab, or tezepelumab*

Biologic Switching Strategy

Assess biologic response at 4–6 months. Inadequate response to dupilumab → consider anti-IL5/5Rα (if OCS-dependent) or tezepelumab (if non-OCS-dependent). Inadequate response to anti-IL5/5Rα → consider dupilumab or tezepelumab. Bronchial thermoplasty remains investigational and is not covered by most health plans including Medicare Advantage.[14]

CLINICAL SCENARIO	INITIAL BIOLOGIC	RECOMMENDED SWITCH OPTIONS	KEY CONSIDERATIONS
Inadequate response to dupilumab (after 4–6 months)	Dupilumab	**OCS-dependent:** Anti-IL-5/5Rα (mepolizumab, benralizumab)	Anti-IL-5/5Rα has superior OCS-sparing effect (47% reduction vs. 0% for tezepelumab)
Inadequate response to dupilumab (after 4–6 months)	Dupilumab	**Non-OCS-dependent:** Tezepelumab	Tezepelumab has greater exacerbation reduction (58% vs. 46%); effective in T2-low phenotype (AEC 150, FeNO 25 ppb)
Inadequate response to anti-IL-5/5Rα (after 4–6 months)	Mepolizumab, benralizumab, or reslizumab	**OCS-dependent:** Dupilumab	Dupilumab has 28% OCS reduction vs. placebo; interclass switch may be more effective for OCS reduction
Inadequate response to anti-IL-5/5Rα (after 4–6 months)	Mepolizumab, benralizumab, or reslizumab	**Non-OCS-dependent:** Dupilumab or tezepelumab	Consider FeNO ≥25 ppb to favor dupilumab; tezepelumab effective across all biomarker levels
Inadequate response to omalizumab (after 4–6 months)	Omalizumab	Anti-IL-5/5Rα, dupilumab, or tezepelumab	Selection guided by OCS dependency, AEC, FeNO, and comorbidities (CRSwNP, atopic dermatitis)
Intraclass switch within anti-IL-5/5Rα	Mepolizumab ↔ benralizumab	Generally not recommended	Similar mechanisms of action; interclass switch preferred

ABBREVIATIONS: AEC = absolute eosinophilic count; Anti-IL-5/5Rα = interleukin-5/interleukin-5 receptor alpha antagonists; CRSwNP = chronic rhinosinusitis with nasal polyps; FeNO = fractional exhaled nitric oxide; OCS = oral corticosteroids; T2 = Type 2 inflammation

OCS Complication Monitoring Framework

Patients receiving repeated or prolonged oral corticosteroids should be monitored for predictable steroid-related complications, including osteoporosis, hyperglycemia, adrenal suppression, cataracts, and infection risk[1,3]

COMPLICATION	OCS TRIGGER THRESHOLD	SCREENING TEST	FREQUENCY	ACTION THRESHOLD
Osteoporosis	≥2 OCS bursts/ year or cumulative ≥3 months	DEXA bone density scan	Baseline; repeat per osteoporosis guidelines	T-score ≤−2.5: bisphosphonate; −1.0 to −2.5: calcium/vitamin D, lifestyle, reassess
Diabetes/ hyperglycemia	Any OCS course; higher risk with repeated bursts	Fasting glucose or HbA1c	During/after each OCS course; annually if repeated OCS	FG >126 mg/dL or HbA1c ≥6.5%: diabetic management; temporary insulin adjustment during bursts
Adrenal suppression	Chronic daily OCS or frequent high-dose bursts	Morning cortisol; ACTH stimulation test if suspected	If tapering chronic OCS or symptoms of adrenal insufficiency	Morning cortisol <5 µg/dL: endocrinology referral; gradual OCS taper with stress dosing plan
Cataracts	Cumulative OCS exposure (dose-dependent)	Ophthalmologic examination	Annual if cumulative OCS >1 year or age ≥65 with repeated bursts	Posterior subcapsular cataracts: ophthalmology referral; document as OCS-related complication
Immunosuppression	Chronic OCS ≥10 mg/day prednisone equivalent	Clinical assessment; infection monitoring	Ongoing during chronic OCS use	Recurrent infections: assess OCS dose reduction; ensure vaccinations current (influenza, pneumococcal, COVID-19, RSV if ≥60)

ABBREVIATIONS: *ACTH = adrenocorticotropic hormone; DEXA = dual-energy X-ray absorptiometry; FG = fasting glucose; HbA1c = glycated hemoglobin; OCS = oral corticosteroid; RSV = respiratory syncytial virus*

CLINICAL PEARL: REPEATED OCS USE IS A SIGNAL TO REASSESS CONTROL

OCS are appropriate for moderate to severe exacerbations, but repeated bursts or maintenance use should prompt reassessment of asthma control, modifiable contributors, and steroid-sparing options because cumulative exposure increases risk for bone, metabolic, endocrine, ocular, and infection-related complications.

Inhaler Device Selection Guide for Older Adults

For older adults, the best inhaler is the one the patient can use correctly and consistently, based on inspiratory flow, dexterity, cognition, coordination, and support needs[1,2,25]

DEVICE TYPE	BEST FOR	REQUIRES	LIMITATIONS IN ELDERLY	EXAMPLES
MDI + spacer	Patients with reduced coordination; broadest device familiarity	Slow inhalation, breath-hold 5–10 sec; spacer eliminates coordination requirement	Spacer adds bulk/ complexity; grip strength needed to actuate canister	fluticasone-salmeterol MDI; albuterol HFA + AeroChamber
Dry powder inhaler (DPI)	Patients with adequate inspiratory flow (≥30 L/min)	Forceful, deep inhalation to deaggregate powder	Requires sufficient inspiratory force; not suitable if severe airflow limitation; some devices need dexterity to load	Wixela Inhub (fluticasone-salmeterol); Symbicort TBH
Soft mist inhaler (SMI)	Patients with poor inspiratory flow or coordination; frail elderly	Slow, steady inhalation; no forceful breath needed	Loading mechanism requires hand strength to twist; fine aerosol reduces oropharyngeal deposition	tiotropium Respimat; combivent Respimat
Nebulizer	Patients with severe cognitive or physical limitations; acute exacerbations	Tidal breathing only; no coordination or inspiratory effort needed	Treatment time 10–15 min per session; cleaning and maintenance required; electricity dependent	albuterol 2.5 mg nebulized; ipratropium 0.5 mg nebulized

ABBREVIATIONS: *DPI = dry powder inhaler; HFA = hydrofluoroalkane; MDI = metered-dose inhaler; SMI = soft mist inhaler*

Non-Pharmacologic Interventions and Documentation

Non-pharmacologic interventions can improve asthma control when they are matched to the patient's exposures, symptoms, functional limitations, and comorbidities; they should complement, not replace, guideline-directed pharmacotherapy.[27,28,30,31]

CATEGORY	INTERVENTION	BEST-FIT PATIENT	EVIDENCE SUMMARY	DOCUMENTATION POINTS
Environmental	Targeted allergen mitigation	Patient with symptoms or sensitization linked to a specific exposure	Use targeted, multicomponent approaches when exposure and sensitization are present; routine mitigation without a relevant exposure link is not recommended	Document exposure, symptom pattern, sensitization status, intervention, and follow-up
Environmental	Dust mite mitigation	Patient sensitized and exposed to dust mite allergen	Encasements alone are usually insufficient; use as part of a multicomponent plan	Document testing, exposure source, and combined strategy
Environmental	Integrated pest management	Patient with cockroach/rodent exposure or sensitization	May reduce symptoms; can be used alone or as part of a multicomponent mitigation plan	Document pest exposure, housing context, referral/ resources offered, and reassessment
Environmental	Mold remediation/ HEPA filtration	Patient with visible mold, dampness, or symptom pattern linked to indoor air quality	Best used as part of a broader exposure-reduction plan	Document mold/ dampness exposure, symptom timing, and mitigation plan
Pollutant avoidance	Smoking cessation and secondhand smoke reduction	Any patient with active smoking, vaping, or environmental tobacco smoke exposure	Strongly recommended; may improve symptoms, lung function, airway inflammation, and treatment responsiveness	Document smoking/ vaping status, exposure source, counseling, pharmacotherapy/ referral when appropriate

ABBREVIATIONS: ACQ = Asthma Control Questionnaire; AQI = Air Quality Index; AQLQ = Asthma Quality of Life Questionnaire; CI = confidence interval; EIB = exercise-induced bronchoconstriction; ETS = environmental tobacco smoke; FEV_1 = forced expiratory volume in 1 second; FVC = forced vital capacity; HEPA = high-efficiency particulate air (filter); ICS = inhaled corticosteroid; IgE = immunoglobulin E; IPM = integrated pest management; MCID = minimal clinically important difference; OR = odds ratio; QoL = quality of life; SMD = standardized mean difference.

CATEGORY	INTERVENTION	BEST-FIT PATIENT	EVIDENCE SUMMARY	DOCUMENTATION POINTS
Pollutant avoidance	Outdoor/indoor air pollution reduction	Patient with symptoms triggered by smoke, wildfire exposure, traffic pollution, biomass fuel, or poor air quality	Trigger avoidance may reduce symptom burden when exposure pattern is clear	Document exposure source, Air Quality Index counseling, ventilation/filtration plan, and action plan updates
Lifestyle	Physical activity/ aerobic exercise	Patient with deconditioning, activity limitation, obesity, or poor functional capacity	May improve asthma control, fitness, and quality of life; manage exercise-induced bronchoconstriction	Document exercise counseling, symptom limits, pre-exercise reliever plan if indicated, and follow-up
Lifestyle	Weight management	Patient with obesity or weight-related dyspnea	Weight loss may improve asthma control and quality of life; avoid assuming all dyspnea is asthma	Document BMI, weight trajectory, patient goals, nutrition/activity support, and comorbidity assessment
Rehabilitation	Pulmonary rehabilitation	Patient with persistent dyspnea, limited exercise tolerance, fixed airflow limitation, or frequent exacerbation recovery needs	May improve exercise capacity and quality of life; especially useful when dyspnea and deconditioning persist	Document referral indication, functional limitation, baseline symptoms, and reassessment plan

ABBREVIATIONS: ACQ = Asthma Control Questionnaire; AQI = Air Quality Index; AQLQ = Asthma Quality of Life Questionnaire; CI = confidence interval; EIB = exercise-induced bronchoconstriction; ETS = environmental tobacco smoke; FEV_1 = forced expiratory volume in 1 second; FVC = forced vital capacity; HEPA = high-efficiency particulate air (filter); ICS = inhaled corticosteroid; IgE = immunoglobulin E; IPM = integrated pest management; MCID = minimal clinically important difference; OR = odds ratio; QoL = quality of life; SMD = standardized mean difference.

CATEGORY	INTERVENTION	BEST-FIT PATIENT	EVIDENCE SUMMARY	DOCUMENTATION POINTS
Breathing support	Breathing exercises	Patient with dysfunctional breathing, hyperventilation symptoms, anxiety-linked dyspnea, or persistent symptoms despite optimized therapy	May improve quality of life and hyperventilation symptoms; adjunctive only	Document breathing pattern concern, referral/program, and continued pharmacotherapy plan
Mind-body adjunct	Yoga/ pranayama	Interested patient with stable asthma seeking adjunctive symptom-management support	May improve quality of life; evidence for exacerbation reduction is inconsistent	Document as optional adjunct, not replacement therapy

ABBREVIATIONS: ACQ = Asthma Control Questionnaire; AQI = Air Quality Index; AQLQ = Asthma Quality of Life Questionnaire; CI = confidence interval; EIB = exercise-induced bronchoconstriction; ETS = environmental tobacco smoke; FEV_1 = forced expiratory volume in 1 second; FVC = forced vital capacity; HEPA = high-efficiency particulate air (filter); ICS = inhaled corticosteroid; IgE = immunoglobulin E; IPM = integrated pest management; MCID = minimal clinically important difference; OR = odds ratio; QoL = quality of life; SMD = standardized mean difference.

Example Documentation: "Counseled on smoking cessation. Discussed environmental trigger reduction: advised avoiding strong odors, wood-burning stoves, and known allergens. Weight management plan discussed (BMI 29.2; each kg/m^2 increase → 1% exacerbation risk increase). Encouraged regular aerobic exercise with pre-exercise SABA if exercise-induced symptoms. Breathing exercises recommended for dysfunctional breathing component. Vaccinations reviewed: influenza (current), PCV20 (received 2025), COVID-19 (current). Asthma action plan reviewed and updated with patient; PEF diary provided with instructions for green/yellow/red zones. Written materials provided in patient's preferred language."[1,7,28]

AAVBC PERSPECTIVE

*The **AAVBC** strategic approach to severe asthma emphasizes a proactive, multimodal framework designed to stabilize chronic inflammation and prevent high-cost acute care interventions. AAVBC supports integrated management via:*

- ***Controller Optimization:** Prioritize consistent adherence to high-dose ICS regimens and the implementation of MART (maintenance and reliever therapy) to ensure baseline airway stability*
- ***Actionable Rescue Planning:** Mandate a formalized "Traffic Light" action plan to empower patients to recognize and treat early-stage "Yellow Zone" symptoms before they escalate*
- ***Pharmacologic Escalation:** Utilize evidence-based escalation, including the integration of biologics (e.g., anti-IL5, anti-IgE) and LAMA add-ons for refractory cases*
- ***Non-Pharmacological Strategies:** Address modifiable risk factors, including environmental trigger mitigation, smoking cessation, and comorbid management (GERD/Obesity)*
- ***Hospitalization Diversion:** Focus on the reduction of exacerbation frequency and systemic steroid reliance to minimize ED visits and inpatient admissions*

When to Refer

SPECIALTY	URGENT (<2 WEEKS)	ROUTINE (4–6 WEEKS)
Pulmonology/ Allergy	Uncontrolled despite triple therapy; OCS-dependent; ≥1 hospitalization/year; life-threatening exacerbation; diagnostic uncertainty (asthma vs. COPD vs. VCD)	Biologic evaluation after confirming severe asthma; phenotyping; bronchial challenge testing if diagnosis uncertain[1,14]
Endocrinology	Adrenal crisis symptoms during OCS taper (hypotension, fatigue, hyponatremia)	Morning cortisol <5 µg/dL after chronic OCS; new diabetes secondary to OCS[1,14]
Rheumatology/ Bone Health	—	DEXA T-score ≤−2.5 with cumulative OCS exposure; fragility fracture evaluation[1,14]
ENT/ Otolaryngology	—	Refractory chronic rhinosinusitis with nasal polyps; evaluation for nasal polypectomy if medical management insufficient[1,14]

***ABBREVIATIONS:** COPD = chronic obstructive pulmonary disease; DEXA = dual-energy X-ray absorptiometry; ENT = ear, nose, and throat; OCS = oral corticosteroid; VCD = vocal cord dysfunction*

SPECIALTY	URGENT (<2 WEEKS)	ROUTINE (4–6 WEEKS)
Palliative/ Supportive Care	Symptom burden unresponsive to maximal therapy in frail elderly with limited life expectancy	Goals of care discussion for patients declining biologic therapy or with significant treatment burden[1,14]

ABBREVIATIONS: *COPD = chronic obstructive pulmonary disease; DEXA = dual-energy X-ray absorptiometry; ENT = ear, nose, and throat; OCS = oral corticosteroid; VCD = vocal cord dysfunction*

Follow-Up Timing[1,3,14,18]

CLINICAL STATUS	TIMING	KEY ASSESSMENT ELEMENT
Well controlled on Steps 1–2	Every 6–12 months	ACT/ACQ score; inhaler technique; adherence; trigger review; consider step-down after 3 months good control
Well controlled on Steps 3–4	Every 3–6 months	ACT/ACQ; spirometry annually; SABA use tracking; comorbidity screening; step-down assessment
Uncontrolled/recent exacerbation	Every 2–4 weeks until controlled	ACT/ACQ; PEF diary review; adherence and technique assessment; escalation decision; OCS tracking
Biologic initiation phase	Every 4 weeks ×3 months, then q8–12 weeks	Biologic response assessment (exacerbation frequency, OCS reduction, FEV_1, ACT/ACQ); adverse effects; 4–6 month formal efficacy review
OCS-dependent/ chronic OCS	Every 1–3 months	OCS dose tracking; complication monitoring (glucose, bone density, adrenal function); biologic response; taper planning
Post-hospitalization	Within 1 week of discharge	Medication reconciliation; action plan review; trigger identification; specialist referral if not already in place

ABBREVIATIONS: *ACQ = Asthma Control Questionnaire; ACT = Asthma Control Test; FEV_1 = forced expiratory volume in 1 second; OCS = oral corticosteroid; PEF = peak expiratory flow; SABA = short-acting beta-agonist*

Patient Education and Adherence

Education and adherence support are core components of effective asthma management and should be documented at every relevant encounter.[1,3,28]

Asthma Action Plan Education

ZONE	PEF (% PERSONAL BEST)	SYMPTOMS/STATUS	ACTION
Green	>80%	Controlled, no symptoms	Continue current maintenance medications
Yellow	50–80%	Increased symptoms (cough, wheeze, chest tightness, nighttime awakening)	Use rescue inhaler; increase maintenance if on SMART therapy; contact clinic if no improvement in 48 hours
Red	50%	Severe symptoms (difficulty speaking, breathing, walking; lips/nails blue)	Use rescue inhaler immediately; start emergency prednisone if prescribed; call 911 if no improvement

ABBREVIATIONS: PEF = peak expiratory flow

Home and Office Action Plan: Immediate Interventions

SETTING	SEVERITY/ ZONE	IMMEDIATE INTERVENTIONS	CLINICAL RATIONALE
Home (Patient)	**Yellow Zone** (PEF 50–80%)	**SABA:** 2–6 puffs via MDI every 20 min for up to 1 hour	Rapid bronchodilation for early-stage flares
Home (Patient)	**Red Zone** (PEF <50%)	**SABA + OCS:** 2–6 puffs SABA; initiate Prednisone (40–50 mg). **Call 911**	OCS reduces airway inflammation; emergency transport essential
Office (Physician)	**Moderate** (SpO_2 90–94%)	**Nebulized Albuterol + Ipratropium:** (DuoNeb) q20 min. **OCS:** Prednisone/Prednisolone.	Combined SABA/SAMA provides superior bronchodilation
	Severe/ Life-Threatening	**Terbutaline 0.25 mg IM/SC** or **Epinephrine 0.3 mg IM.**	Bypasses compromised airways; used when nebulization is ineffective
	Severe/ Life-Threatening	**IV/IM Magnesium Sulfate (2 g):** Consider for refractory cases.	Relaxes smooth muscle by blocking calcium uptake

ABBREVIATIONS: IM = intramuscular; IV = intravenous; MDI = metered-dose inhaler; OCS = oral corticosteroids; PEF = peak expiratory flow; SABA = short-acting beta-agonist; SAMA = short-acting muscarinic antagonist; SC = subcutaneous; SpO_2 = oxygen saturation

Key Counselling Points

TOPIC	KEY MESSAGE
SMART Therapy	Single inhaler for maintenance and rescue simplifies regimen; reduces exacerbations by 29–30%[6,32,33]
Inhaler Technique	Reviewed using teach-back method to confirm correct use
Steroid Phobia Counseling	ICS = low systemic risk, essential for control; OCS = significant systemic risk, goal is elimination via biologic therapy
Biologic Therapy	Discussed injection logistics, expected response timeline (4–6 months), and manufacturer copay assistance programs
Written Materials	Action plan and device instructions provided in patient's preferred language

Comorbidity Management

Comorbidities frequently drive poor asthma control; the following conditions require targeted management alongside controller therapy[1,12,25]

CONDITION	AVOID	REASON	ALTERNATIVE
Asthma + cardiovascular disease	Non-selective beta-blockers (propranolol, nadolol)	Precipitate severe bronchospasm via β_2 blockade	Cardioselective beta-blockers (bisoprolol, metoprolol succinate) with careful monitoring
Asthma + NERD	NSAIDs and aspirin (unless desensitized)	NERD: OR 3.29 for severe asthma; severe bronchospasm trigger	Acetaminophen; COX-2 selective inhibitor with supervised challenge if needed
Asthma + diabetes (OCS-related)	Prolonged OCS courses without glucose monitoring	OCS causes dose-dependent hyperglycemia; may require temporary insulin	Monitor glucose during/after every OCS course; adjust diabetic medications; prioritize OCS-sparing biologic strategy
Asthma + osteoporosis (OCS-related)	Repeated OCS without bone density assessment	Cumulative OCS accelerates bone loss; fragility fracture risk	DEXA if ≥2 bursts/year or cumulative ≥3 months OCS; calcium/vitamin D; bisphosphonate if T-score ≤−2.5

ABBREVIATIONS: *COX-2 = cyclooxygenase-2; DEXA = dual-energy X-ray absorptiometry; GERD = gastroesophageal reflux disease; LAMA = long-acting muscarinic antagonist; NERD = NSAID-exacerbated respiratory disease; NSAID = nonsteroidal anti-inflammatory drug; OCS = oral corticosteroid; PPI = proton pump inhibitor*

CONDITION	AVOID	REASON	ALTERNATIVE
Asthma + GERD	Routine PPI for asthma without documented reflux	PPI improves control only in documented reflux; no benefit for asthma alone	PPI trial only if GERD symptoms present; reassess after 3 months; discontinue if no asthma benefit
Asthma + polypharmacy	Adding LAMA without reviewing anticholinergic burden	Additive anticholinergic effects in elderly on multiple medications	Medication reconciliation; review urinary retention risk, cognitive effects; use lowest effective LAMA dose

ABBREVIATIONS: *COX-2 = cyclooxygenase-2; DEXA = dual-energy X-ray absorptiometry; GERD = gastroesophageal reflux disease; LAMA = long-acting muscarinic antagonist; NERD = NSAID-exacerbated respiratory disease; NSAID = nonsteroidal anti-inflammatory drug; OCS = oral corticosteroid; PPI = proton pump inhibitor*

Cost-Smart Options

Medication affordability should be reviewed alongside clinical phenotype, device usability, formulary status, and prior authorization requirements.[14,16,17]

MEDICATION (BRAND)	ESTIMATED COST CONTEXT*	COST-SMART TIP
omalizumab (Xolair)	~$30,000–$60,000/year list price; retail may exceed ~$4,000/Rx	Verify IgE range, weight-based dose, site of care, and assistance eligibility
omalizumab-igec (Omlyclo)	Biosimilar pricing emerging; expected lower than Xolair in some formularies	Check payer preference and biosimilar substitution policy
budesonide-formoterol	Retail ~$277/Rx; discount pricing may start around ~$97	SMART/MART may reduce need for separate controller + reliever inhalers
fluticasone-salmeterol (Wixela Inhub)	Retail ~$455/Rx; discount pricing may start around ~$65–$97	Lower-cost DPI alternative to branded fluticasone-salmeterol
tiotropium (Spiriva Respimat)	Discount pricing often remains >~$500/Rx	Consider formulary alternatives, price-cap programs, or assistance pathways
montelukast	Often low-cost generic; commonly <$15–$30/Rx with discounts	Useful adjunct for allergic asthma, exercise-induced symptoms, or NERD

ABBREVIATIONS: *CRSwNP = chronic rhinosinusitis with nasal polyps; DPI = dry powder inhaler; ICS = inhaled corticosteroid; IgE = immunoglobulin E; LABA = long-acting beta-agonist; MART = maintenance and reliever therapy; NERD = NSAID-exacerbated respiratory disease; OCS = oral corticosteroid; PA = prior authorization; Rx = prescription; SMART = single maintenance and reliever therapy. *Estimated costs are approximate U.S. list, retail, or discount-cash ranges and may change by pharmacy, dose, supply, insurance benefit, formulary tier, site of care, and patient assistance eligibility. Manufacturer copay cards may not apply to Medicare or other government insurance programs.*

MEDICATION (BRAND)	ESTIMATED COST CONTEXT*	COST-SMART TIP
dupilumab (Dupixent)	~$4,193/carton list price	Higher value when asthma overlaps with CRSwNP or atopic dermatitis
mepolizumab (Nucala)	~$3,991/single self-injection dose list price	Consider when eosinophilic asthma and OCS-sparing are key goals

ABBREVIATIONS: *CRSwNP = chronic rhinosinusitis with nasal polyps; DPI = dry powder inhaler; ICS = inhaled corticosteroid; IgE = immunoglobulin E; LABA = long-acting beta-agonist; MART = maintenance and reliever therapy; NERD = NSAID-exacerbated respiratory disease; OCS = oral corticosteroid; PA = prior authorization; Rx = prescription; SMART = single maintenance and reliever therapy. *Estimated costs are approximate U.S. list, retail, or discount-cash ranges and may change by pharmacy, dose, supply, insurance benefit, formulary tier, site of care, and patient assistance eligibility. Manufacturer copay cards may not apply to Medicare or other government insurance programs.*

Quality Metrics Tie-In[20–24]

MEASURE	TARGET	STAR RATING CONTEXT
Asthma Medication Ratio (AMR)	≥0.50 (≥50% controller medications)	Part C Star measure. Patients with AMR ≥0.5: 0.109 vs. 0.215 hospitalizations/year; 0.321 vs. 0.768 ED visits/year. SMART therapy naturally optimizes AMR
Medication Management for People with Asthma (MMA)	≥75% of treatment days covered	Part C Star measure. Age groups: 5–11, 12–18, 19–50, 51–64. Focus on controller medication adherence
SABA canister monitoring	<6 canisters/year	Not a formal Star measure but a critical quality indicator. >6 canisters/year = inadequate control; triggers severity reassessment
OCS burst tracking	<2 bursts/year	Not a formal Star measure but a key clinical quality indicator. ≥2 bursts/year triggers biologic evaluation and OCS complication monitoring

ABBREVIATIONS: *AMR = Asthma Medication Ratio; ED = emergency department; MMA = Medication Management for People with Asthma; OCS = oral corticosteroid; SABA = short-acting beta-agonist; SMART = single maintenance and reliever therapy*

5 CODING REMINDERS AND CASE EXAMPLES

Coding Specificity

CRITICAL ELEMENT	CLINICAL REQUIREMENT	EXAMPLE DOCUMENTATION
Severity classification	Document severity as mild intermittent, mild persistent, moderate persistent, or severe persistent — supported by symptom frequency, PFT results, and treatment intensity	"Severe persistent asthma (J45.50): symptoms >2 days/week, nighttime awakening 3–4×/week, FEV_1 58% predicted, requiring high-dose ICS-LABA + LAMA"
Active vs. history framing	Use J45.5x (active severe asthma) — never "history of asthma" (Z87.828) which produces no HCC mapping	"Severe persistent asthma, active — currently on fluticasone-salmeterol 500/50 + tiotropium" NOT "History of asthma"
Exacerbation status	Distinguish uncomplicated (J45.50) from with exacerbation (J45.51) or status asthmaticus (J45.52); document acute vs. baseline presentation	"Severe persistent asthma with acute exacerbation (J45.51) — PEF 45% predicted, required ED visit and OCS burst"
Complication documentation	Code OCS-related complications separately with causal link to asthma treatment	"Osteoporosis secondary to chronic OCS for severe persistent asthma (M81.0 + J45.50); T-score −2.8 on DEXA"
Comorbidity specificity	Code asthma-COPD overlap, GERD, rhinosinusitis as separate diagnoses linked to asthma when clinically relevant	"Severe persistent asthma (J45.50) with comorbid COPD (J44.1) — asthma-COPD overlap; treated with ICS-LABA-LAMA triple therapy"
Treatment status	Document current treatment regimen, dose, frequency, and response to support severity classification	"Uncontrolled on high-dose ICS-LABA + LAMA (fluticasone-salmeterol 500/50 BID + tiotropium 2.5 mcg daily); ACT 14; 3 OCS bursts in 12 months"
Validated severity measure	Include ACT or ACQ-5 score at every encounter to objectively document control status	"ACT score 14/25 (very poorly controlled; prior visit 16; declining trend)"

ABBREVIATIONS: *ACQ = Asthma Control Questionnaire; ACT = Asthma Control Test; COPD = chronic obstructive pulmonary disease; DEXA = dual-energy X-ray absorptiometry; ED = emergency department; FEV_1 = forced expiratory volume in 1 second; GERD = gastroesophageal reflux disease; HCC = Hierarchical Condition Category; ICS-LABA = inhaled corticosteroid–long-acting beta-agonist; LAMA = long-acting muscarinic antagonist; OCS = oral corticosteroid; PFT = pulmonary function test*

CRITICAL ELEMENT	CLINICAL REQUIREMENT	EXAMPLE DOCUMENTATION
Annual reconfirmation	Reconfirm severity classification annually based on current treatment intensity and control status — do not carry forward prior-year code without reassessment	"Severe persistent asthma reconfirmed: requires high-dose ICS-LABA + LAMA + dupilumab to maintain control (ACT 22); severity classification unchanged from 2025"

ABBREVIATIONS: *ACQ = Asthma Control Questionnaire; ACT = Asthma Control Test; COPD = chronic obstructive pulmonary disease; DEXA = dual-energy X-ray absorptiometry; ED = emergency department; FEV_1 = forced expiratory volume in 1 second; GERD = gastroesophageal reflux disease; HCC = Hierarchical Condition Category; ICS-LABA = inhaled corticosteroid–long-acting beta-agonist; LAMA = long-acting muscarinic antagonist; OCS = oral corticosteroid; PFT = pulmonary function test*

Annual Clinical Review and Confirmation

Confirm severe persistent asthma remains active, specified, and clinically managed.[22,34,35]

- ***Annual review requirement:*** *Severe persistent asthma (J45.50–52) must be reassessed once per calendar year via a face-to-face or synchronous audio-video encounter, with MEAT documentation completed by 12/31. The record must reflect current severity classification, control status (ACT or ACQ-5 score), exacerbation history (OCS bursts, ED visits, hospitalizations in past 12 months), current treatment regimen and response, and spirometry results*
- ***Visit modality:*** *In-person or video telehealth encounters qualify when they support meaningful evaluation of respiratory function, inhaler technique assessment, and spirometry interpretation. Telephone-only encounters are clinically insufficient for asthma severity reassessment*
- ***HCC context:*** *HCC 279 (Asthma). Documenting asthma as "history of" or using Z87.828 produces no HCC mapping. The annual documentation must reflect active disease requiring ongoing treatment — not a historical diagnosis. RAF 0.818 × $10,402.34 = ~$8,509/year in unrecognized clinical complexity if lost*
- ***Reconfirm severity annually:*** *Asthma severity may change. A patient previously classified as severe persistent who achieves good control on a biologic may warrant reclassification — but only if lower-intensity therapy has been attempted. Do not carry forward a prior-year severity code without clinical reassessment of treatment intensity and control status*
- ***Update validated severity measures:*** *ACT and/or ACQ-5 scores should be documented at minimum annually (ideally every visit) to objectively track control trajectory. Spirometry (FEV_1, FEV_1/FVC) should be repeated every 1–2 years or with any significant change in control status*

Good Documentation is Comprehensive Coding[5,35]

INSUFFICIENT	COMPREHENSIVE
"Asthma"	→ "Severe persistent asthma (J45.50), uncontrolled (ACT 14), FEV_1 1.38 L (58% predicted, 3/31/26), on high-dose ICS-LABA + LAMA; 3 OCS bursts in 12 months; biologic referral initiated"
"Asthma, stable"	→ "Severe persistent asthma (J45.50), controlled on dupilumab 200 mg q2wk + fluticasone-salmeterol 500/50 BID + tiotropium 2.5 mcg daily (ACT 22, FEV_1 72% predicted); severity reconfirmed — requires biologic to maintain control"
"Asthma exacerbation, gave prednisone"	→ "Severe persistent asthma with acute exacerbation (J45.51): PEF 45% predicted, SpO_2 93% on RA. Prednisone 40 mg ×5 days prescribed (3rd burst in 12 months). DEXA and HbA1c ordered. Biologic evaluation expedited."
"Refill inhalers"	→ "Continue fluticasone-salmeterol 500/50 mcg BID + tiotropium Respimat 2.5 mcg daily; response inadequate despite confirmed adherence (12/12 refills) and correct technique. ACT 14. FEV_1 declining (62% → 58% over 6 months). Meets CHEST 2026 criteria for biologic initiation."
"History of asthma"	→ "Severe persistent asthma, active (J45.50) — requiring daily high-dose ICS-LABA + LAMA. Active disease documented with ACT 14, FEV_1 58% predicted, 3 exacerbations in 12 months. NOT 'history of' — Z87.828 eliminates HCC 279."

ABBREVIATIONS: *ACT = Asthma Control Test; DEXA = dual-energy X-ray absorptiometry; FEV_1 = forced expiratory volume in 1 second; HbA1c = glycated hemoglobin; HCC = Hierarchical Condition Category; ICS-LABA = inhaled corticosteroid–long-acting beta-agonist; LAMA = long-acting muscarinic antagonist; OCS = oral corticosteroid; PEF = peak expiratory flow; RA = room air; SpO_2 = oxygen saturation*

EHR Tips

- ***Full-visit SmartPhrase (.ASTHMA_VISIT):*** *Auto-populates: ACT score field, current medication list with doses/frequencies, SABA use frequency, OCS burst count (12-month rolling), spirometry results (FEV_1, FEV_1/FVC, % predicted), exacerbation history, trigger review checklist, action plan status, and follow-up plan. Includes severity classification prompt (mild intermittent/mild persistent/moderate persistent/severe persistent) with required supporting data fields*
- ***MEAT documentation template (.ASTHMA_MEAT):*** *Pre-structured template mapping to four MEAT elements: MONITOR (ACT score, symptom frequency, PEF diary, medication adherence, SABA tracking), EVALUATE (spirometry values, bronchodilator response, biomarkers, inhaler technique, comorbidity review), ASSESS (ICD-10 code with severity, control status, trajectory statement, complication list), TREAT (numbered action items with medication names, doses, referrals, non-Rx interventions, follow-up timing)*
- ***Clinical decision template (.ASTHMA_ESCALATE):*** *Documents the escalation decision: current therapy (drug, dose, duration), specific trigger for change (ACT score, OCS burst*

count, FEV₁ decline, hospitalization), new therapy selected (biologic name, phenotype rationale), guideline alignment (CHEST 2026, GINA 2025), and referral status. Anchored to the most common escalation scenario: triple therapy → biologic initiation

- ***Best Practice Advisory (BPA):*** *Alert fires when: (1) ACT or ACQ-5 not documented in >6 months for a patient with J45.4x or J45.5x; (2) spirometry not performed in >24 months; (3) ≥2 OCS bursts documented in 12 months without biologic referral; (4) J45.909 coded when prior encounter documented specific severity classification*
- ***Asthma order set:*** *CBC with differential, FeNO (95012), spirometry (94010/94060), HbA1c (if OCS history), DEXA (if cumulative OCS ≥3 months), serum total IgE (if omalizumab evaluation), allergy testing (95004). Follow-up scheduling: 2–4 weeks if uncontrolled, 3–6 months if controlled, 1–2 weeks post-hospitalization*

Brief Case Examples

SUCCESS: Female patient, 71, with severe persistent asthma (J45.50), FEV₁ 58% predicted, ACT 14, eosinophils 420 cells/µL, FeNO 48 ppb, on fluticasone-salmeterol 500/50 BID + tiotropium 2.5 mcg daily. Three OCS bursts in 12 months despite confirmed adherence. Documentation of severity classification, validated control score, biomarkers, treatment intensity, exacerbation count, and phenotype data supporting biologic referral per CHEST 2026. → HCC 279 supported. RAF 0.818 × $10,402.34 = ~$8,509/year. Satisfies MEAT: severity documented with objective data, treatment plan escalated with guideline alignment.

PITFALL: Female patient, 71, charted as "asthma, continue inhalers" with J45.909 (unspecified). No severity classification, no ACT score, no spirometry reference, no exacerbation count, no biomarkers documented. Patient has been on high-dose ICS-LABA for 3 years with multiple OCS bursts — clinical record clearly supports severe persistent, but the code does not reflect this. → Flagged. J45.909 = no HCC 279 mapping. RAF loss: 0.818 × $10,402.34 = ~$8,509/year in unrecognized clinical complexity. RADV risk: code does not match clinical complexity documented elsewhere in the chart.

FIX: Same patient. Documentation updated: "Severe persistent asthma (J45.50), uncontrolled — ACT 14/25, FEV₁ 1.38 L (58% predicted, 3/31/26), on fluticasone-salmeterol 500/50 mcg BID + tiotropium 2.5 mcg daily with confirmed adherence (12/12 refills). Three OCS bursts in the past 12 months. Eosinophils 420 cells/µL (pre-OCS), FeNO 48 ppb. T2-high phenotype confirmed. Referred to pulmonology for biologic initiation — dupilumab per CHEST 2026 algorithm. DEXA and HbA1c ordered for OCS complication monitoring." → HCC 279 supported (RAF 0.818). Adds ~$8,509/year by documenting severity with objective data that was already present in the clinical record but not reflected in the code.

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