American Academy of Allergy Asthma & Immunology

Linking Quality Measures to Guideline Recommendations in Allergy-Immunology: Challenges and Opportunities: A Workgroup Report of the AAAAI Measures Stewardship Committee

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ABSTRACT: The American Academy of Allergy, Asthma & Immunology and the American College of Allergy, Asthma, & Immunology Joint Task Force on Practice Parameters (JTFPP) produces guidelines applying the Grading of Recommendations, Assessment, Development and Evaluations framework of evidence appraisal. Grading of Recommendations, Assessment, Development and Evaluations recommendations can be strong or conditional and in favor or against a specific action. Strong recommendations may serve as quality measures. Conditional recommendations serve as a navigational signal for shared

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Abbreviations used
AAAAI- American Academy of Allergy, Asthma & Immunology
ACAAI- American College of Allergy, Asthma, & Immunology
APM- Advanced Alternative Payment Model
CMS- Centers for Medicare & Medicaid Services
D&I- dissemination and implementation
EBM- evidence-based medicine
GRADE- Grading of Recommendations, Assessment, Development and Evaluations
HEDIS- Health Effective Data and Information Set
IEI- inborn error of immunity
JTFPP- Joint Task Force on Practice Parameters
MIPS- Merit-based Incentive Payment System
MVP- MIPS Value Pathway
NCQA- National Committee for Quality Assurance
QCDR- Quality Clinical Data Registry
QPP- Quality Payment Program

decision making. The mission of the American Academy of Allergy, Asthma & Immunology Measures Stewardship Committee is to evaluate the quality of care provided to patients in Allergy-Immunology. Clear, accurate, and just quality measurement programs are important not only for clinical care but also for financial payments that exist in the United States based on these measures. Allergy-Immunology has yet to secure a "home" in modern quality measures reporting, because redesigned public and private reimbursement frameworks have not included dedicated measures for our specialty. The goals of this report were to (1) link Joint Task Force on Practice Parameters guideline recommendations with existing quality measures and (2) identify opportunities for the development, prioritization, validation, and implementation of quality measures that are both patient-centered and responsive to the needs of Allergy-Immunology specialists. **© 2026 American Academy of Allergy, Asthma & Immunology** **(J Allergy Clin Immunol Pract 2026;14:1756-71)**

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EVIDENCE-BASED MEDICINE AND GRADE METHODOLOGY

Clinical practice guidelines provide a standard for optimal clinician and patient decision making in specific circumstances. Historically, guidelines were based on expert consensus without formal systematic literature review, evidence appraisal, or multistakeholder involvement. In the early 1990s, evidence-based medicine (EBM) emerged in response to variability in practice and a greater realization that empirical data should guide patient care along with clinical expertise.[1] Gordon Guyatt and his team at McMaster University used EBM initially as a methodology for medical education that brought clinical data to the bedside.[2] EBM includes incorporating best available evidence, practitioner expertise, and patient values and preferences to determine optimal management. Soon, EBM expanded into a broader movement in clinical practice and research, necessitating a standardized approach. This led to the development of Grading of Recommendations, Assessment, Development and Evaluations (GRADE) methodology in 2004, which determines the certainty of evidence (via assessment of study design, risk of bias, imprecision, inconsistency, indirectness, and magnitude of effect) and then contextualizes the evidence using stakeholder values and expert opinion to produce recommendations, specifying both direction (for or against) and strength (strong or conditional) for each recommendation.[3] The GRADE framework has been widely adopted by medical and public health organizations, including the World Health Organization, the Agency for Healthcare Research and Quality, the National Institute for Health and Care Excellence, Cochrane, the American College of Physicians, the American Academy of Allergy, Asthma & Immunology (AAAAI), and the American College of Allergy, Asthma, & Immunology (ACAAI), among others. The methodology continues to evolve and the McMaster University group championed a recent 7-part series addressing its core principles.[4] Clinical practice guidelines are now defined as statements including recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of available care options.[5]

ALLERGY-IMMUNOLOGY CLINICAL GUIDELINES

The AAAAI and the ACAAI support the Joint Task Force on Practice Parameters (JTFPP),[6] which was formed in 1989 to standardize Allergy-Immunology practice on the basis of scientific evidence and expert consensus.[7] The JTFPP first used GRADE in the 2017 Rhinitis Update Practice Parameter.[8] Since then, the JTFPP has used GRADE for guidelines on anaphylaxis (2020),[9] peanut allergy (2020),[10] eosinophilic esophagitis (2020),[11] chronic rhinosinusitis (2022),[12] and atopic dermatitis (2023),[13] with in-progress GRADE guidelines on severe and difficult-to-control asthma and chronic spontaneous urticaria, and a living guideline planned for atopic dermatitis. A living guideline is a dynamic approach to clinical guidance in which individual recommendations are updated as new evidence emerges, rather than revising the guideline as a whole at fixed intervals. This model relies on continuous literature surveillance, with ongoing updating of evidence summaries and decision frameworks. When predefined criteria for change are met, a standing guideline panel reassesses the affected recommendation. Thus, living guidelines improve timeliness and relevance while maintaining methodological rigor. The ACAAI and the AAAAI officially endorsed GRADE in 2022. The JTFPP also developed traditional practice parameters during this same period that are generally broader in scope than GRADE guidelines including rhinitis (2020),[14] drug allergy (2022),[15] anaphylaxis (2023),[16] and inborn errors of immunity (2026),[17] with in-progress parameters on immunotherapy and insect allergy. Each parameter also considers the perspective of diverse stakeholders including patients, physicians, allied health staff, and more recently caregivers of patients.[7] These efforts have resulted in pragmatic evidence-based guidelines accessible to all practitioners caring for patients with allergic and immunologic diseases.

DISSEMINATION AND IMPLEMENTATION OF ALLERGY-IMMUNOLOGY CLINICAL GUIDELINES

Translation of clinical evidence into routine practice is estimated to take around 17 years from publication to broad

implementation in clinical settings.[18,19] For example, when practice-changing evidence emerged for acute coronary syndrome, it took 2 years for the information to be integrated into clinical guidelines after trial publication and another 14 years until 90% of practices adopted the new evidence.[20] Dissemination and implementation (D&I) sciences evaluate how clinical guidelines are put into practice and how consistently they are used in real-world care. A recent AAAAI workgroup report found that D&I sciences are underused in Allergy-Immunology.[21] The workgroup authors identified several areas within Allergy-Immunology where D&I sciences could be applied to facilitate translation of the best evidence in Allergy-Immunology into routine clinical practice, including in asthma, chronic rhinosinusitis, atopic dermatitis, drug allergy, food allergy, health disparities, school-based interventions, and inborn errors of immunity.[21]

The JTFPP uses several dissemination strategies to facilitate knowledge transfer of a new clinical guideline. First, the guideline is shared in its initial draft form for public comment by both clinicians and lay people. Second, JTFPP and workgroup members lead multiple presentations at national, regional, and local meetings related to guideline content before and after the guideline is finalized. Guideline updates are provided as part of the Conferences On-Line Allergy series,[22] focused on fellows-in-training. Third, the guideline itself is published in a highly visible medical journal (ie, *Journal of Allergy and Clinical Immunology* or *Annals of Allergy, Asthma & Immunology*) and is made available on its website as well as on the websites for the AAAAI and the ACAAI.[6] Some GRADE guidelines are accompanied by user's guide information about each intervention (eg, bleach baths for atopic dermatitis instructions), available as an appendix to the primary guideline publication as well as on the JTFPP website.[23] Fourth, PowerPoint slides are made available on the JTFPP website for those who prefer this learning format. Fifth, guideline recommendations are disseminated in secondary publications.[24] Tailored summaries have been published in high-impact journals with broad readership. Pocket guides and infographics, which provide summaries of key recommendations, are available as quick-reference materials, although some require a paid subscription. Using guideline-friendly applications (eg, MAGICapp[25]) has been explored as another way to facilitate knowledge transfer. MAGICapp is a web-based guideline platform used to host and disseminate living, evidence-based recommendations in an interactive, continuously updated format designed for point-of-care use. Sixth, the JTFPP works with other organizations (eg, the American Academy of Dermatology) to disseminate information to their members. Seventh, the American Board of Allergy and Immunology regularly designates JTFPP clinical guidelines as eligible readings within its Continuing Certification program. Diplomates select these peer-reviewed articles and complete an open-book quiz, with 93% reporting that the process assists in identifying individual knowledge or practice gaps.[26]

From a D&I science standpoint, there remain many opportunities to improve knowledge transfer efforts for timely impact on patient care. This includes research that identifies practice gaps, studies to explore reasons for the gap (eg, financial, cultural, structural, and political barriers), and testing of new and existing intervention strategies to close these gaps most effectively.[21] Quality measurement can help identify practice gaps and potentially drive improvements; partnering with implementation scientists can accelerate projects and reduce the time to implementation.

QUALITY MEASURES

Quality measures in medicine are metrics used to evaluate the effectiveness, safety, efficiency, patient-centeredness, equity, and timeliness of health care services.[27] These include process measures (eg, whether spirometry was performed for a patient with asthma) and outcome measures (eg, did patients aged 5-50 years have well-controlled asthma as defined by preset thresholds on patient-reported outcomes tools). As US health care continues to emphasize a paradigm of quality over quantity,[28] quality measures are likely to play a significant role in evaluating guideline implementation, assessing patient outcomes, and incentivizing best practices through clinician reimbursement and recognition, while also contributing to efforts to reduce overall health care costs.

QUALITY PAYMENT PROGRAM MEASURES

As part of the 2015 Medicare Access and CHIP Reauthorization Act, the Centers for Medicare & Medicaid Services (CMS) continued the Quality Payment Program (QPP) that began with earlier programs (eg, Physician Quality Reporting System). The goal of the QPP is to facilitate the transition of the US health care system from a volume-based (fee-for-service) model to a value-based model, in line with the 2010 Affordable Care Act. The QPP determines payment adjustments and quality recognition for services rendered to Medicare patients via 3 payment pathways: Merit-based Incentive Payment System (MIPS), MIPS Value Pathways (MVPs), and Advanced Alternative Payment Models (APMs). Each program relies on quality measures to evaluate clinician and practice group eligibility for financial bonuses or penalties based on performance and to determine eligibility for recognition. To avoid an automatic maximum penalty, most practices must report via 1 of these pathways if they bill $90,000 or more in Medicare Part B allowed charges, see 200 or more Medicare Part B patients, and provide 200 or more covered services.[29]

Under Medicare, MIPS is the traditional method under which bonuses or penalties applied to reimbursements are currently determined for most clinicians in solo practice and small groups. Each year clinicians following the MIPS pathway submit clinical performance data to the CMS, which calculates a MIPS score based on quality measures weighted across 4 categories: quality (30%), cost (30%), improvement activities (15%), and promoting interoperability (25%).[30] This score determines payment adjustments up to ±9% depending on the number of MIPS measures met, and the scores are publicly available on CMS Care Compare.[31] MIPS is budget-neutral, meaning that penalties fund bonuses.[32] Each MIPS quality measure has specific technical specifications that define denominators (eligible cases), numerators (cases meeting the measure criteria), and exclusions/exceptions (patients or cases not counted). Clinicians participating in MIPS follow CMS rules in selecting and reporting a qualifying set of MIPS measures each year. Currently, traditional MIPS measures specific to each field are searchable on the CMS Explore Measures & Activities tool, including 15 MIPS measures categorized under Allergy-Immunology as of 2025[33] (see Table I).

TABLE I. MIPS quality measures listed for Allergy-Immunology[29]

Measure name	Measure type	Primary measure steward
Adult COVID-19 Vaccination Status	Process	CMS
Adult Immunization Status	Process	NCQA
Adult Sinusitis: Antibiotic Prescribed for Acute Viral Sinusitis (Overuse)	Process	American Academy of Otolaryngology - Head and Neck Surgery Foundation
Adult Sinusitis: Appropriate Choice of Antibiotic: Amoxicillin with or Without Clavulanate Prescribed for Patients with Acute Bacterial Sinusitis (Appropriate Use)	Process	American Academy of Otolaryngology - Head and Neck Surgery Foundation
Closing the Referral Loop: Receipt of Specialist Report	Process	CMS
Connection to Community Service Provider	Process	OCHIN
Documentation of Current Medications in the Medical Record	Process	CMS
Gains in Patient Activation Measure (PAM) Scores at 12 Months	Patient-reported outcome	Insignia Health, LLC, a wholly owned subsidiary of Phreesia
HIV Annual Retention in Care	Process	Health Resources and Services Administration
HIV Viral Suppression	Outcome	Health Resources and Services Administration
Optimal Asthma Control	Outcome	Minnesota Community Measurement
Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented	Process	CMS
Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention	Process	NCQA
Screening for Social Drivers of Health	Process	CMS
Use of High-Risk Medications in Older Adults	Process	NCQA

Inspection of the MIPS quality measure options reveals that none of the strong recommendations made by the JTFPP since 2020 applies directly to any of the current MIPS quality measures listed for Allergy-Immunology.[32] Only 3 of the measures are outcome measures, and most are not specific to Allergy-Immunology specialist care. A closer look at the quality outcome measure that could be most relevant to asthma specialists finds that "Optimal Control of Asthma" is the percentage of patients aged 5 to 50 years with asthma who have good control (using standardized questionnaires) and less than 2 emergency department/hospitalization events in 1 year for asthma.

The overall low applicability of available MIPS measures for Allergy-Immunology specialists, combined with an interest to provide evidence of the increased value of specialty care, drove an initiative to create Allergy-Immunology—specific quality measures housed in an Allergy-Immunology Quality Clinical Data Registry (QCDR), first offered and used for QPP reporting in 2014.[34] A Joint Task Force of Quality Performance Measures (ACAAI and AAAAI) predated the QCDR. Table II lists Allergy-Immunology—specific measures included in the QCDR in 2022. Notably, only the penicillin allergy measure is related to a JTFPP guideline statement made since 2020. The QCDR was closed in 2022 and is not a current option for Allergy-Immunology specialists for the QPP. A work group report from 2015 listed quality measures[35] developed by work groups and approved by the AAAAI/ACAAI in the past and is available online.[36]

The next iteration of quality measurement, added to Medicare in 2023, is the MVPs. MVPs were created in response to clinician concerns regarding confusing reporting requirements, with traditional MIPS including too much choice and complexity in selecting and reporting measures and activities.[37] MVPs use a subset of the most relevant quality measures available by specialty area, including foundational measures and a smaller selection of specialty-specific measures.[37] To participate, one must report on 4 of the measures available for the MVP, one of which must be an outcome measure. An advantage of MVPs is that providers report a reduced number of quality measures and improvement activities as compared with traditional MIPS.[29] The CMS has announced plans to fully transition from traditional MIPS to MVPs over coming years even as it issues annual calls for new quality measures for these programs.[37]

Although a likely improvement from MIPS for some specialties, MVP reporting for Allergy-Immunology is challenging given the lack of relevant reporting options currently. Despite advocacy from the AAAAI and the ACAAI, there is no MVP for Allergy-Immunology. The few measures relevant to allergy-immunology are scattered between MVPs for dermatology, infectious disease, otolaryngology, and pulmonology (Table III). As a stopgap, the ACAAI and the AAAAI have urged the CMS to incorporate immunization measures into the Pulmonary and Infectious Disorders MVPs and to consider creating an Allergy-Immunology MVP consisting of measures listed in other specialty MVPs. Under the CMS rules, at least 4 measures must be selected from a single MVP, and measures cannot be combined across MVPs (eg, dermatology and pulmonology). Thus, a dedicated Allergy-Immunology MVP is ultimately essential to enable optimal reporting.

The third option for QPP participation is the APMs used typically by large health systems, accountable care organizations, and multispecialty groups where quality is measured with an emphasis on outcomes including health and cost metrics at the population level.[38] These require higher financial risk-sharing in exchange for higher incentives typically beyond the risk tolerance of smaller practices. Under APMs, there is a predetermined set of quality measures that must be reported.[38] APMs are customized

TABLE II. Allergy-Immunology–specific measures listed in AAAAI-sponsored 2022 QCDA[35,36]

Measure specification	Owner	Measure type
Optimal asthma control	MIPS	Outcome
Assessment of asthma control	AAAAI	Process
Asthma control: minimal important difference improvement	AAAAI	Outcome
Assessment of response to allergen immunotherapy at 1 y	AAAAI	Process
Achievement of effective immunotherapy dose for 1+ y	AAAAI	Outcome
Appropriate confirmation or removal of penicillin allergy	AAAAI	Outcome
Overuse antibiotic prescribed for sinusitis	MIPS	Process
Appropriate antibiotic selection for sinusitis	MIPS	Process

TABLE III. MVPs with measures potentially relevant to Allergy-Immunology[37]

MVP	Potentially relevant measures to Allergy-Immunology
Dermatology*	Itch improvement in dermatitis, tobacco screening/intervention, documentation of medications, tuberculosis testing before immune modifier
Infectious disease	Appropriate upper respiratory infection treatment, documentation of medications, HIV viral suppression, HIV annual retention, HIV screening, childhood vaccinations, and adult vaccinations
Otolaryngology	Antibiotic overuse for sinusitis, amoxicillin/amoxicillin-clavulanic acid for sinusitis, tobacco screening/intervention
Pulmonology*	Optimal asthma control, spirometry and long-acting bronchodilator for chronic obstructive pulmonary disease, tobacco screening/intervention

*New in 2025.

to the specialty care provided, for example, the Oncology Care Model, and currently there is no dedicated APM for Allergy-Immunology. The ACAAI proposed an APM on asthma that was never approved. APMs are expected to encompass an increasingly larger fraction of US health care as individual practices and small groups continue to consolidate under large health care organizations.[39,40] Between 2017 and 2023, the percentage of providers who were qualifying participants in APMs rose from 7.7% to 29.3%, with a corresponding increase in the number of enrolled providers from 84,885 to 362,704.[41]

The process of creating and testing CMS quality measures begins with the CMS or specialty societies/professional organizations (eg, the AAAAI, the ACAAI, and the American College of Physicians) identifying a gap between optimal and existing care practices.[42] Measures are crafted by specialty societies, hospital systems, or measure developing entities such as the National Committee for Quality Assurance (NCQA) based on the latest data and expert opinion.[30] Technical expert panels composed of clinicians, quality improvement experts, patient advocates, researchers, and health care administrators review proposals and refine measures to ensure clinical relevance and feasibility. Measures then undergo pilot testing in real-world settings to ensure reliability (precision) and validity (accuracy and meaning). For measures to be considered by the CMS for inclusion in MVPs and other QPP reporting options, a 57-page template provided by it must be completed and testing data submitted.[43] Several fields require details about the association of the measure with a clinical guideline and medical evidence. The CMS considers measures for QPP inclusion annually. The review process alone takes a year. Finally, the CMS finalizes and publishes the measures, with ongoing monitoring and addition, revision, or retirement of measures each year as scientific evidence and the reporting experience on measures evolve. Since 2023, the independent nonprofit Batelle has held the CMS contract for endorsement and maintenance of quality measures.

HEALTH EFFECTIVE DATA AND INFORMATION SET QUALITY MEASURES

Health Effective Data and Information Set (HEDIS) quality measures are traditionally used by private payers (eg, commercial insurance plans) and select public payers (eg, Medicaid managed care and Medicare part C). More than 72% of the US population is enrolled in health plans that report quality results using HEDIS.[44] Private commercial plans such as United Healthcare, Cigna, Aetna, Blue Cross Blue Shield, and Humana represent the largest fraction (30%) of reimbursements to providers in the United States, with Medicare (21%), Medicaid (18%), and out-of-pocket spending (10%) representing other substantial contributors.[45] The NCQA is an independent nonprofit organization that evaluates and accredits health care organizations on the basis of quality standards.[42] The NCQA adopted HEDIS in the 1990s to provide a standardized way to measure the performance of health plans so that employers, consumers, and regulators could make more informed decision about health care quality.[42] By the mid-1990s, HEDIS had become part of the NCQA health care plan accreditation process. Thus, unlike CMS quality measures developed under federal programs to assess provider and practice performance, HEDIS quality measures have originated from private-sector collaboration, with primary emphasis on plan performance and accreditation. Health plans in turn apply HEDIS measures to determine provider reimbursements, the upshot being incentivization for providers to align practice patterns with quality measures, similar to the QPP.

HEDIS measure development is initiated by the NCQA on the basis of gaps in public health needs, variation in care, and input from stakeholders including clinicians, payers, and patients. Design involves collection of the latest evidence, expert consultation, technical specification development, and field testing for reliability and validity. Measures are subject to public comment before inclusion in the annual HEDIS set and are updated or retired on the basis of newest evidence each year. Previously, there was one HEDIS measure with some relevance to Allergy-Immunology: the Asthma Medication Ratio, which assessed the proportion of patients aged 5 to 64 years with persistent asthma who achieved a controller-to-total asthma medication canister ratio of 0.50 or higher during the measurement year.[46] Increasing use of inhaled corticosteroid–containing agents as relievers blurred the distinction between controller and reliever medications on which the Asthma Medication Ratio depended. As of January 1, 2026 (measurement year 2026), the Asthma Medication Ratio was retired by the NCQA and replaced by the HEDIS Follow-Up After Acute and Urgent Care Visits for Asthma

TABLE IV. Strong recommendations from JTFPP Grade Guidelines

Topic area	Guideline recommendation	Quality measure
Atopic dermatitis, 2023[13]	In patients with uncontrolled atopic dermatitis refractory to moisturization alone, the JTFPP recommends addition of a topical steroid over no topical steroid.	Dermatology MVP itch improvement in dermatitis (Outcome)
	In patients aged 3 mo or older with uncontrolled atopic dermatitis refractory to moisturizer alone, the JTFPP recommends addition of a topical calcineurin inhibitor over no added topical calcineurin inhibitor.	Dermatology MVP itch improvement in dermatitis (Outcome)
	In patients with atopic dermatitis and a relapsing course, the JTFPP recommends the use of proactive therapy to areas that frequently flare with a TCI or midpotency TCS over applying topical treatments only in reaction to flares.	Dermatology MVP itch improvement in dermatitis (Outcome)
	In patients aged 6 mo or older with moderate to severe atopic dermatitis refractory, intolerant, or unable to use midpotency or greater topical treatment, the JTFPP recommends adding dupilumab over continued standard topical treatment without dupilumab.	Dermatology MVP itch improvement in dermatitis (Outcome)
	In patients aged 12 y or older with moderate to severe atopic dermatitis refractory, intolerant, or unable to use midpotency topical treatment, the JTFPP panel recommends adding tralokinumab over continued topical treatment without tralokinumab.	Dermatology MVP itch improvement in dermatitis (Outcome)
	In adults and adolescents with moderate to severe atopic dermatitis refractory, intolerant, or unable to use mid- to high-potency topical treatment and systemic treatment including one of the biologics, the panel recommends against using baricitinib 1 mg daily	Potential process measure, using 2-4 mg of baricitinib instead
Chronic rhinosinusitis, 2023[12]	No strong recommendations made	Not applicable
Eosinophilic esophagitis, 2020[11]	In patients with EoE, the panel recommends topical glucocorticosteroids over no treatment	Potential process measure, using topical glucocorticosteroids for EoE. The measure would require that topical glucocorticosteroids are offered for patients with active EoE; using an alternative therapy such as dietary elimination, proton pump inhibitor therapy, or biologics would also meet the measure
Anaphylaxis, 2020[9]	No strong recommendations made	Not applicable
Peanut allergy, 2020[10]	No strong recommendations made	Not applicable
Rhinitis, 2017[8]	Should routinely prescribe monotherapy with an INCS rather than a combination of an INCS with an oral antihistamine	Potential process measure, INCS, and not INCS + oral antihistamine. The measure would require that *a patient with chronic allergic rhinitis symptoms who is on INCS is not treated with chronic oral antihistamine as add-on therapy for allergic rhinitis*. Outcome measures such as TNSS, RQLQ, and RCAT could be considered
	Should recommend an INCS over a leukotriene receptor antagonist (for age $\geq$15 y)	Potential process measure (intranasal steroid rather than leukotriene receptor antagonist). Could also consider outcome measures such as TNSS, RQLQ, or RCAT. May not be appropriate for pediatric patients

EoE, Eosinophilic esophagitis; *INCS*, intranasal corticosteroid; *RCAT*, rhinitis control assessment test; *RQLQ*, rhinoconjunctivitis quality of life questionnaire; *TCI,* topical calcineurin inhibitor; *TCS,* topical corticsteroid; *TNSS*, Total Nasal Symptom Score.

measure.[47,48] This new measure emphasizes timely outpatient follow-up after asthma-related acute or urgent encounters and is satisfied by completion of an outpatient visit coded with an asthma diagnosis, without requiring a specific pharmacologic adjustment or asthma-directed intervention. Because many qualifying visits will likely occur in primary care, its applicability to the Allergy-Immunology practice may be limited. Currently, the ACAAI and the AAAAI have only indirect involvement in HEDIS measure design via correspondence or objections and no formal or established position in the development process. This likely reflects a combination of factors, including the relatively small size of the Allergy-Immunology specialty and the historical prioritization of higher-volume conditions in HEDIS measure development, rather than a lack of engagement or interest from our specialty societies.

TABLE V. Strong recommendations from JTFPP Traditional Guidelines

Topic area		Guideline recommendation	Quality measure
IEI, 2025-2026[17]	1.	We recommend investigating for IEI diagnosis in patients with recurrent, severe, or rare infections, autoinflammation, autoimmunity, severe atopy, atypical malignancy, bone marrow failure, or combinations of these conditions	Potential process measure. IEI evaluation is intended for patients with recurrent (≥2 per year) infections with red-flag features (eg, pneumonias, opportunistic organisms, otherwise typical infections of unusual severity, poor response to standard therapy, requirement of intravenous antibiotics) and/or immune dysregulation that is severe, early-onset, or treatment-refractory. Any clinician (eg, pediatrician, internist, and rheumatologist) may order IEI workup provided they are comfortable interpreting the results and recognize when referral to an allergist-immunologist is indicated
	2.	We recommend obtaining a detailed family history to support the IEI diagnosis and to identify undiagnosed affected relatives	Potential process measure
	3.	We recommend an integrated approach for the diagnosis of a suspected IEI: clinical, immunologic, and genetic components	Potential process measure
	4.	We recommend that the evaluation of immunodeficiency should include testing for secondary causes of immunodeficiency	Potential process measure
	5.	We recommend TREC quantitation for newborn population-based screening for the early identification of newborns with SCID and complete athymia	All US states and territories perform newborn SCID screening; therefore, this is not a good target for a quality measure for Allergy-Immunology specialists
	6.	We recommend the urgent confirmation of an abnormal newborn screening for SCID (ie, TREC) with complete blood cell counts with differential and flow cytometric measurement of peripheral blood lymphocyte subset populations, including assessment of numbers of T, B, and natural killer subsets and naive T cells	Potential process measure, may be easier to measure than other process measures for IEI
	7.	We recommend that diagnostic evaluation for SCID and athymia include genetic testing, ascertainment of maternal T-cell engraftment, IgE levels, eosinophilia, T-cell oligoclonality, T-cell proliferation, and adenosine deaminase enzyme activity	Potential process measure, may be easier to measure than other process measures for IEI
	8.	We recommend urgent referral to centers with expertise in the care of severe immunodeficiency after SCID or athymia diagnosis is confirmed	Potential process measure
	9.	We recommend referral to clinicians with expertise in IEI for assessment and diagnosis of patients with non-SCID T-cell lymphopenia detected by NBS	Potential process measure
	10.	We recommend single-gene sequencing to test patients with suspected IEI who have a similarly affected family member with a known genetic defect or who present with a condition with a defect in a gene that might not be reliably analyzed using high-throughput massively parallel sequencing	Potential process measure
	11.	We recommend targeted gene panel sequencing including genes associated with IEI or exome sequencing as an initial step for genetic diagnosis, when a familial gene defect does not explain the patient's condition	Potential process measure
	12.	We recommend DNA copy number variant testing in patients with IEI with a suspected gene(s) deletion or duplication	Potential process measure
	13.	We recommend the American College of Medical Genetics and Genomics guidelines for evaluating gene variant pathogenicity	Potential process measure, unsure ease of measuring fidelity to this guideline

(continued)

TABLE V. *(Continued)*

Topic area	Guideline recommendation	Quality measure
	14. We recommend familial genetic testing to aid in gene variant pathogenicity resolution	Potential process measure
	15. We recommend investigating multiple genetic diagnoses when a monogenetic diagnosis does not explain all the patient clinical characteristics	Potential process measure
	16. We recommend that genetic testing for patients with IEI can be ordered by clinicians with expertise in IEI and not limited to geneticists	Potential process measure
	17. We recommend that patients with suspected antibody deficiencies be evaluated with immunoglobulin measurement, antigen-specific antibody responses and lymphocyte phenotyping, and exclusion of secondary causes of antibody deficiency	Potential process measure, may be easier to measure than other process measures for IEI
	18. We recommend the diagnosis of agammaglobulinemia for patients with low or undetectable serum immunoglobulin concentrations *and* low or undetectable circulating B lymphocytes *and* normal total $CD3^+$ T-cell numbers	Potential process measure
	19. We recommend the diagnosis of CVID for patients with low serum IgG *and* low serum IgA and/or low IgM levels *and* demonstrated impaired antibody response to infection or immunization	Potential process measure, may be easier to measure than other process measures for IEI
	20. We recommend the diagnosis of selective IgA deficiency for patients older than 4 y with serum IgA below the limit of detection *and* normal serum IgG and IgM levels	Potential process measure, may be easier to measure than other process measures for IEI
	21. We recommend that patients with low serum IgG and IgA levels *and* normal or elevated serum IgM level be given the diagnosis of immunoglobulin class-switch defects after ruling out combined immunodeficiencies that present with similar laboratory findings	Potential process measure
	22. We recommend considering the diagnosis of transient hypogammaglobulinemia of infancy, for infants and children with low serum IgG level *and* normal antibody response to immunizations *and* absent evidence of secondary causes	Potential process measure
	23. We recommend immunologic investigations in patients with infectious manifestations, autoimmunity, malignancy, or organ-specific pathologies, suggesting cellular and humoral immunodeficiency	Potential process measure
	24. We recommend the diagnosis of combined immune deficiency for patients with impairment (quantitative or functional) of both cellular and antibody immune functions	Potential process measure
	25. We recommend immunologic investigations and testing of diagnostic biological markers in patients with suspicion of CID *and* certain specific clinical findings in nonimmunologic organs and systems (syndromic features)	Potential process measure
	26. We recommend that patients with suspected quantitative neutrophil defects be screened with serial complete blood cell counts with differential	Potential process measure
	27. We recommend that patients with suspected LAD be tested with flow cytometry analysis of relevant phagocyte surface molecules for LAD I and II, and targeted genetic testing for LAD I, II, III, and IV	Potential process measure
	28. We recommend that patients with suspected CGD have measurement of phagocyte oxidase activity *and* genetic testing for CGD-associated gene defects	Potential process measure

(continued)

TABLE V. *(Continued)*

Topic area	Guideline recommendation	Quality measure
	29. We recommend that patients with pulmonary alveolar proteinosis be tested for pathogenic variants in the genes encoding the GM-CSF receptor and for autoantibodies to GM-CSF	Potential process measure
	30. We recommend that patients with suspected inherited susceptibility to a specific pathogen(s) be investigated for associated gene defects of innate immunity in addition to exclusion of adaptive immune defects and secondary causes of immune defects	Potential process measure
	31. We recommend that patients with recurrent or severe infections by encapsulated bacteria *and* with normal antibody responses be evaluated for complement deficiency	Potential process measure
	32. We recommend that patients presenting with thrombocytopenia, microangiopathic hemolytic anemia, *and* acute renal failure be screened for abnormalities of complement regulatory proteins and/or autoantibodies against complement factor H and related proteins 1 and 3 (CFHR1/CFHR3)	Potential process measure
	33. We recommend genetic testing when complement function screening is abnormal	Potential process measure
	34. We recommend evaluation for IEI in patients with clinical manifestations of immune dysregulation, such as immunodeficiency, autoimmunity, lymphoproliferation, and autoinflammation	Potential process measure
	35. We recommend the assessment of cellular and humoral immunologic functions in patients with suspected immune dysregulation disorders	Potential process measure
	36. We recommend that patients with periodic fevers and chronic systemic inflammation should be evaluated for IEI and secondary causes such as infection, autoimmune disease, or malignancy	Potential process measure
	37. We recommend that patients who exhibit lymphoproliferation and autoimmunity be evaluated for primary and secondary immune dysregulation syndromes	Potential process measure
	38. We recommend the assessment of complete blood cell counts with differential in patients with IEI	Potential process measure, complete blood cell counts with differential at baseline and periodically thereafter (typically every 12 mo in stable patients, or every 3-6 mo if cytopenias, immune dysregulation, or immunomodulatory therapy are present)
	39. We recommend *against* routine screening for autoantibodies, given the high proportion of asymptomatic patients with autoantibodies in circulation	Potential process measure, may be easier to measure than other process measures for IEI
	40. We recommend the evaluation for major organ system functions and screening for cancer and mental health disorders in patients with IEI	Potential process measure
	41. We recommend IgGRT for patients with IEI with antibody deficiency	Potential process measure (patient receipt of IgGRT); potential outcome measure (infection frequency and severity)
	42. We recommend that initial dosing of immunoglobulin for replacement therapy be at 400-600 mg/kg per month, followed by dose adjustment, if necessary	Potential process measure
	43. We recommend the monitoring of serum IgG levels, complete blood cell counts with differential, and serum chemistry for patients on IgGRT	Potential process measure
	44. We recommend maintaining serum IgG levels at >800 mg/dL to improve outcomes	Potential process measure, may be easier to measure than other process measures for IEI

(continued)

TABLE V. *(Continued)*

Topic area		Guideline recommendation	Quality measure
	45.	We recommend that IgGRT be indicated as a continuous therapy for IEI with antibody deficiency	Potential process measure
	46.	We recommend that a low or absent IgA, in the setting of low IgG levels, is not a contraindication for IgGRT	Potential process measure
	47.	We recommend targeted antimicrobial prophylaxis for patients with IEI and increased susceptibility to infections	Potential process measure
	48.	We recommend using only irradiated, cytomegalovirus-negative, lymphocyte-depleted blood products for administration to patients with cellular or combined IEI	Potential process measure
	49.	We recommend educating patients regarding environmental exposures that may increase the risk of infections for patients with IEI	Potential process measure
	50.	We recommend prompt management of cytopenia(s) or malignancies in patients with IEI	Potential process measure
	51.	We recommend the use of vaccine recommendations provided by public health experts for patients with IEI	Process measure, can model from Infectious Disease MVP (childhood and adult vaccinations)
	52.	We recommend that patients with typical SCID or leaky/atypical SCID receive definitive therapy with allogeneic HSCT or gene therapy	Potential process measure
	53.	We recommend that patients with congenital athymia disorders be treated with CTTI	Potential process measure
	54	We recommend that patients with CID disorders who have severe cellular immune defects or who manifest severe or refractory disease complications be considered for allogeneic HSCT	Potential process measure
	55.	We recommend that patients with primary hemophagocytic lymphohistiocytosis disorders and patients with X-linked lymphoproliferative disease type 1 be evaluated for HSCT	Potential process measure
	56.	We recommend HSCT for patients with defects in neutrophil number or function associated with severe clinical phenotypes	Potential process measure
	57.	We recommend that any patient with IEI who receives definitive treatment with HSCT, CTTI, or gene therapy receive life-long follow-up by clinicians experienced in evaluating immune reconstitution and monitoring for long-term complications of these procedures	Potential process measure
	58.	We recommend the use of targeted therapies to treat IEI based on either an identified molecular defect or a clinical phenotype suggestive of a defective immune function	Potential process measure
	59.	We recommend performing QoL measurements in patients with IEI, inclusive of patient-reported outcome measurements conducted with a validated tool	Potential process measure and potential outcome measure (achieving certain QoL score or improvement in that score); *ideally, 1 agreed-upon instrument would be selected to track for this measure*
Anaphylaxis, 2023[16]	60.	We recommend obtaining a bST in patients presenting with a history of recurrent, idiopathic, or severe anaphylaxis, particularly those presenting with hypotension	Potential process measure, may be easier to measure than other anaphylaxis process measures
	61.	We recommend clinicians counsel patients at high risk of anaphylaxis always to carry self-injectable epinephrine and teach patients proper indications and use	Potential process measure
	62.	We recommend clinicians educate patients on avoidance of potential exposure to allergen(s)	Potential process measure

(continued)

TABLE V. *(Continued)*

Topic area		Guideline recommendation	Quality measure
	63.	We recommend clinicians educate patients that the main route of food-induced anaphylaxis is by ingestion and not contact or inhalation	Potential process measure
	64.	Serious adverse reactions to intramuscular epinephrine are very rare and should not pose a barrier to the prescription or early administration of EAIs when indicated. To manage the risk of adverse events, we recommend that clinicians counsel patients and caregivers on the proper use of EAIs, the common adverse effects, and the need for immediate evaluation and treatment when signs or symptoms of serious adverse events develop	Potential process measure, may be easier to measure documentation of self-administered epinephrine instruction than other process measures
	65.	During visits with patients who have been prescribed EAIs, we recommend that clinicians routinely review the essentials of EAI carriage, storage, and use; encourage patients to regularly practice EAI administration with a trainer device; and discuss strategies to manage barriers to adherence that patients may have experienced	Potential process measure, may be easier to measure documentation of self-administered epinephrine instruction than other process measures
	66.	We recommend clinicians order a bone marrow biopsy with staining for tryptase, CD25 immunohistochemistry and flow cytometry, and the KIT D816V mutation when there is strong suspicion for systemic mastocytosis	Potential process measure
	67.	We recommend clinicians should not rely on serum tryptase levels alone for diagnostic assessment of the likelihood that a patient does or does not have a clonal mast cell disorder	Potential process measure
	68.	We recommend measurement of bST in patients with severe insect sting anaphylaxis, particularly those who had hypotension and/or absence of urticaria; in all cases of recurrent unexplained mastocytosis; and in patients with suspected mastocytosis	Potential process measure, may be easier to measure than other anaphylaxis processes
Drug allergy, 2022[15]	69.	We recommend that a proactive effort should be made to delabel patients with reported penicillin allergy, if appropriate	Appropriate confirmation or removal of penicillin allergy (AAAAI). This is best classified as a process measure; an outcome measure may be use of appropriate first-line β-lactam antibiotics, effective treatment of sepsis, no surgical-site infection, or *decreased hospital days compared with expected*
	70.	We recommend against any testing in patients with a history inconsistent with penicillin allergy (such as headache, family history of penicillin allergy, or diarrhea), but a 1-step amoxicillin challenge may be offered to patients who are anxious or request additional reassurance to accept the removal of a penicillin allergy label	Potential process measure, *inclusive of 1- or 2-step challenge*
	71.	We recommend against the routine use of multiple-day challenges in the evaluation of penicillin allergy	Potential process measure
	72.	We recommend against penicillin skin testing before direct amoxicillin challenge in pediatric patients with a history of benign cutaneous reaction (such as maculopapular drug exanthem and urticaria)	Potential process measure
	73.	We recommend that allergist-immunologists collaborate with hospitals and health care systems to implement beta-lactam allergy pathways to improve antibiotic stewardship outcomes	Potential process measure, may not be feasible for practices who are not connected with larger health care systems. Antibiotic stewardship (eg, rates of antibiotic resistance) could be an alternative outcome measure

(continued)

TABLE V. *(Continued)*

Topic area		Guideline recommendation	Quality measure
	74.	We recommend against an oral aspirin challenge to confirm the diagnosis of AERD in cases of high diagnostic certainty based on clinical history; however, aspirin desensitization remains a therapeutic option when indicated	Potential process measure, may not be feasible for practices with lower volumes of patients with AERD
Rhinitis, 2020[14]	75.	We recommend that the clinician complete a detailed history and a physical examination in a patient presenting with symptoms of rhinitis	Potential process measure
	76.	We recommend that for patients presenting with rhinitis symptoms, a review of all current medications should be completed to assess whether drug-induced rhinitis may be present	Potential process measure
	77.	We recommend that aeroallergen skin prick testing or sIgE testing be completed to confirm the diagnosis of AR in a patient with a history consistent with AR	Potential process measure
	78.	We recommend that the clinician not perform food skin prick testing or sIgE for foods in their routine evaluation of a patient presenting with the signs and symptoms compatible with the diagnosis of AR	Potential process measure
	79.	We recommend against prescribing a first-generation antihistamine and are in favor of a second-generation antihistamine when prescribing an oral antihistamine for the treatment of AR	Potential process measure
	80.	We recommend that the clinician offer INAH as an initial treatment option for patients with SAR	Potential process measure, should be phrased as INCS or INAH as initial treatment option 81 for SAR. Could consider outcome measures such as TNSS, RQLQ, or RCAT
	81.	We recommend that the clinician offer INAH as a first-line monotherapy option for patients with NAR	Potential process measure. Could consider outcome measures such as TNSS, RQLQ, or RCAT. Using INCS or intranasal anticholinergic would also meet the measure
	82.	We recommend that when choosing monotherapy for persistent AR, INCS be the preferred medication	Potential process measure. Could consider outcome measures such as TNSS, RQLQ, or RCAT
	83.	We recommend that for the initial treatment of moderate/severe SAR in patients age >15 y, the clinician use an INCS over a leukotriene receptor antagonist	Potential process measure. Could consider outcome measures such as TNSS, RQLQ, or RCAT
	84.	We recommend that oral decongestants be avoided during the first trimester of pregnancy	Potential negative process measure
	85.	We recommend that the clinician not prescribe, as initial treatment, a combination of an oral antihistamine and an intranasal steroid in preference to monotherapy with an intranasal steroid in patients age >12 y with symptoms of SAR	Potential negative process measure

AERD, Aspirin-exacerbated respiratory disease; *AR*, allergic rhinitis; *bST*, basal serum tryptase; *CFH*, complement factor H; *CGD*, chronic granulomatous disease; *CID*, combined immunodeficiency; *CTTI*, cultured thymus tissue implantation; *CVID*, common variable immunodeficiency; *EAI*, epinephrine autoinjector; *HSCT*, hematopoietic stem cell transplantation; *IgGRT*, immunoglobulin replacement therapy; *INAH*, intranasal antihistamines; *LAD*, leukocyte adhesion deficiency; NAR, nonallergic rhinitis; *NBS*, newborn screening; *QoL*, quality of life; *RCAT*, rhinitis control assessment test; *RQLQ*; rhinoconjunctivitis quality of life questionnaire; *SAR*, seasonal allergic rhinitis; *SCID*, severe combined immunodeficiency; *sIgE*, specific IgE; *TNSS*, Total Nasal Symptom Score; *TREC*, T-cell receptor excision circle.

CHALLENGES WITH QUALITY MEASURES

Broad evaluation of the impact of quality measurement shows inconsistent influence on clinical practice improvement.[49] The administrative burden of reporting quality measures is an important downside to participating in quality measurement programs. The financial incentives tied to quality measurement may be insufficient to drive meaningful change, and quality data remain underused in guiding referrals to high-performing practitioners or systems. Without better alignment of patient flow with high-value care, the cost-saving potential of quality measurement may not be realized, contrary to CMS goals. Another challenge may be clinician awareness, especially at larger institutions where they are not directly involved in the quality measurement process. Meanwhile, smaller practices may have fewer resources to capture the data needed to submit and higher cost burden of reporting. For Allergy-Immunology, an immediate bottleneck in the quality measure program is the lack of quality measures that are specific to our specialty and that offer opportunities to report across the breadth of the specialty (eg, specialists who focus on specific areas such as clinical

immunology), and a particular paucity in outcome measures that are needed for MVP reporting. Therefore, we believe there is an opportunity for developing, prioritizing, and advocating for Allergy-Immunology quality measures, specifically for inclusion in the CMS value-based care outcomes and HEDIS programs.

USING JTFPP GUIDELINES TO PRIORITIZE QUALITY MEASURE DEVELOPMENT FOR ALLERGY-IMMUNOLOGY

Following GRADE methodology, the JTFPP assigns a strength rating to each recommendation in its guidelines, either strong or conditional.[50] A strong recommendation means that, for patients, all or almost all would prefer the recommended course of action, with only a small minority disagreeing. For clinicians, it means that all or almost all would follow the recommendation, and formal decision aids are unlikely to be needed to help patients make decisions consistent with their values. For policymakers, the recommendation may be suitable for adoption as policy and can serve as a credible quality or performance measure. For researchers, it means that the recommendation is supported by credible evidence, making further research unlikely to change the actual measure. D&I science could assist earlier and broader adoption. Strong recommendations carry high benefit-risk ratios and stakeholder endorsement, making them well suited for quality measurement. Strong recommendations from the JTFPP parameters are made for both GRADE and traditional (non-GRADE) guidelines. The main difference between strong recommendations for GRADE, compared with traditional parameters, is the process used to arrive at strength and direction of the guideline statements.

Conditional recommendations call for shared decision making between the health care professional and their patient. Conditional recommendations are more common than strong recommendations in Allergy-Immunology guidelines and therefore are especially important for our specialty. The ability to measure shared decision making for conditional recommendation is an exciting future area for both process and outcome measurement.

In Tables IV and V we present strong recommendations from GRADE and Traditional Practice Parameters starting in 2017 and list existing or potential future quality measures that are or could be associated with that specific recommendation. Of note, the CMS stipulates a minimum denominator of 20 patients per year for rare diseases. This is likely most relevant to proposed measures for inborn error of immunity (IEI). Allergy-Immunology practices with low volumes of patients with IEI may find it difficult to meet the minimum denominator threshold of 20 patients per year, of which 75% or more must have performance data available. Therefore, some of the IEI measures may be more applicable to referral centers where larger volumes of people with IEI are seen.

A PATH FORWARD FOR ALLERGY-IMMUNOLOGY QUALITY MEASURES

First, this group recommends the formation of an Allergy-Immunology MVP that includes relevant measures from currently existing MVPs. This will serve as an immediate improvement to the current MVP situation, where none of the existing MVPs has adequate relevant measures to meet the needs of the measures-reporting Allergy-Immunology specialist.

Second, there are future opportunities to integrate new quality measures into reimbursement and recognition structures. The CMS is issuing annual calls for new quality measures as MIPS is expected to be discontinued and MVPs phased in. APMs for Allergy-Immunology remain to be developed even as APMs grow to a larger fraction of provider reimbursements at a time of practice consolidation. Greater efforts are warranted in working with the private sector to bring Allergy-Immunology quality measures into HEDIS, which covers the largest fraction of patients in the United States. This may mean greater interaction between the AAAAI/ACAAI and the NCQA including advocating for a formal role in HEDIS measure development.

The key step to achieve a successful quality measurement framework for Allergy-Immunology specialists is to prioritize measures that are strongly based on evidence, are the most meaningful to our patients, and have the lowest barriers to implementation, documentation, and submission for reimbursement. Currently, there are only a small number of Allergy-Immunology quality measures in existing structures (MIPS, MVPs, HEDIS) and most quality measures are process rather than outcome measures. After considering recent JTFPP strong recommendations and currently existing measures, this workgroup recommends the following measures be considered for prioritization, development, and validation:

1. Appropriate confirmation or removal of penicillin allergy (AAAAI): This outcome measure was included in the AAAAI QCDR. The AAAAI Quality Measures Committee is analyzing QCDR data, which could allow for some of the validation steps necessary to prepare this measure to be included in future quality measure sets such as an MVP.
2. Asthma control: minimal important difference improvement (AAAAI measure): This measure existed within the AAAAI QCDR and is risk-stratified by allowing for a significant change in patients who have severe baseline manifestations of asthma. The ongoing analysis of the QCDR data could allow for some of the validation steps necessary to prepare for this measure to be included in future quality measure sets such as an MVP. The Optimal Asthma Control measure (MIPS, Pulmonary MVP) could also be considered and includes a domain for asthma exacerbation. The limitation of the Optimal Asthma Control measure that exists in MIPS and within the Pulmonary MVP is that it does not adjust for the underlying severity and/or difficult-to-control patients who are more often managed by specialists. The JTFPP guideline on severe and difficult-to-control asthma is forthcoming and the recommendations made will focus on improving asthma outcomes with various interventions, thus making an outcome measure such as asthma control and exacerbations relevant. Outcome measures are highly valued by MVP structure; 1 of the 4 reporting elements must be an outcome measure. Thus, "asthma control: minimal important difference improvement" or "optimal asthma control" could count as an outcome measure potentially included within a menu of options in an Allergy-Immunology MVP. There may be Allergy-Immunology specialists who do not care for patients with asthma. Therefore, it will be important to have other nonasthma outcome measures available in the future Allergy-Immunology MVP.

3. Itch improvement in dermatitis (Dermatology MVP): This is quality ID #485[51] and is the percentage of patients aged 8 years and older with a diagnosis of dermatitis who at an initial visit have a patient-reported itch severity assessment performed, score greater than or equal to 4, and who achieve a score reduction of 3 or more points at a follow-up visit. The numeric itching rating score involves assessing pruritus on a scale from 0 (no itch) to 10 (worst itch imaginable) based on the previous 24 hours. Like the asthma minimal important difference measure, this itch measure starts with a risk-stratified baseline value that reduces the measurement bias against specialists who manage the most severe cases. The itch in dermatitis measure links to several strong recommendations from the 2023 JTFPP atopic dermatitis guidelines that describe interventions that increase the likelihood of achieving favorable clinical outcomes. A key limitation of this measure is the age restriction to 8 years and older. Finally, this measure would add another outcome measure to a future Allergy-Immunology MVP menu and has already been cleared by MVP review.
4. Rhinitis control: minimal important difference improvement (proposed new measure): This is a newly proposed outcome measure to be considered for an Allergy-Immunology MVP and ties into recommendations made in the 2017 and 2020 JTFPP guidelines on rhinitis. A primary limitation is that it has not yet been validated as a formal quality measure. However, a robust psychometric literature supports the reliability and responsiveness of several rhinitis patient-reported outcome instruments. An argument in favor of using the Total Nasal Symptom Score minimal important difference is its established role in regulatory trials and its use by the U.S. Food and Drug Administration for new drug approval. The major disadvantage of this measure is that it has not been validated as a quality measure. However, a strong psychometric testing literature exists for many rhinitis patient-reported outcome questionnaires.[52]
5. Allergen immunotherapy efficacy for allergic rhinitis (proposed new measure): This outcome measure would assess the efficacy of allergen immunotherapy for allergic rhinitis using validated patient-reported outcomes (eg, change in Total Nasal Symptom Score), reduction in rhinitis medication use, and improvement in a validated disease-specific quality-of-life instrument (eg, rhinoconjunctivitis quality of life questionnaire). Outcomes would be assessed at baseline before allergen immunotherapy initiation and longitudinally at regular intervals (eg, every 6 months) during treatment. We recognize that periodic Total Nasal Symptom Score or other outcomes measurement may not be feasible for patients who do not consistently receive care within the prescribing practice (eg, attending college, receiving interim care from a primary care provider or other external provider, or using sublingual immunotherapy outside structured visits). Implementation may therefore require flexible data capture strategies, such as electronic patient-reported outcome tools or coordinated documentation across care settings. This measure would address an important evidence gap regarding the efficacy of multi-allergen immunotherapy as commonly practiced in the United States and could integrate with other proposed rhinitis measures to support the development of a future Allergy-Immunology MVP. A complementary longitudinal measure assessing durability of response through and after treatment represents a logical future direction.
6. Follow-up of abnormal newborn screening for severe combined immune deficiency (proposed new measure): This is a proposed process measure based on the JTFPP 2025 Inborn Errors of Immunity guideline that recommends the urgent confirmation of an abnormal newborn screen for severe combined immune deficiency with complete blood cell counts with differential and flow cytometric measurement of peripheral blood lymphocyte subset populations, including assessment of numbers of T, B, and natural killer subsets and naive T cells. This measure would be important to include in an Allergy-Immunology MVP to help capture the members of the specialty who have a heavy practice focus on clinical immunology.
7. Maintenance of serum IgG levels higher than 800 mg/dL in patients on IgG replacement therapy (proposed new measure): This is a process measure based on the JTFPP 2025-2026 Inborn Errors of Immunity guideline that recommends maintaining serum IgG levels at higher than 800 mg/dL with an understanding that not all patients require or can attain this serum level and denominator exclusions would need to be allowed. Denominator exclusions for this measure add operational complexity but are necessary to preserve individualized, guideline-concordant care. This measure would be important to include in an Allergy-Immunology MVP to help capture the members of the specialty who have a heavy practice focus on clinical immunology.
8. Child and adult vaccinations (Immunology MVP and MIPS individual measurement for adult vaccinations under the Allergy-Immunology category): This process measure links to the JTFPP 2025-2026 Inborn Errors of Immunity guideline recommendation to use vaccine recommendations provided by trustworthy organizations for patients with IEI. Although this measure may draw from the existing MIPS collection or the infectious disease MVP, it should reside within a dedicated Allergy-Immunology MVP, because CMS reporting rules do not permit selection of measures across multiple MVPs.
9. Urticaria control: minimal important difference improvement (proposed new measure): This outcome measure will be responsive to an upcoming JTFPP guideline for chronic spontaneous urticaria. Challenges will include limited prior measure validation data; strengths include strong psychometric validation data from literature.[53]

The administrative, cost, and technology burden of any quality measure must be considered in the overall decision to adopt it. Artificial intelligence may be helpful in decreasing reporting burdens, for example, integrating into electronic health record systems to automatically compile and prepare data for CMS and HEDIS reporting. Large language models have already been shown to efficiently and accurately abstract complex sepsis data and assign quality measure categories, in some cases even identifying errors made by manual abstractors.[54] As these technologies move from research to clinical practice, we believe they will enable practices to assess their performance across a broader range of quality measures with relatively minimal additional time and resources. This would facilitate identification of high-yield areas for improvement and high-performing areas most favorable for reporting to quality

measurement programs, ultimately benefiting both patients and practices. Still, leveraging artificial intelligence for quality measures reporting is contingent on development and implementation of relevant quality measures. The costs associated with integrating artificial intelligence into electronic health record systems represent an additional barrier to its adoption for quality measure reporting.

Conclusion

Quality measures in the field of Allergy-Immunology stand at an exciting moment where there are state-of-the-art GRADE guidelines generated by the JTFPP coinciding with the US health care system's continued focus on quality measurement. Living guidelines by the JTFPP will continue to fuel quality measures with up-to-date best evidence and optimal decision making. Quality measures are a natural fit with D&I efforts because testing current and future knowledge transfer strategies is needed to bring timely impact to patient care. Current bottlenecks to better quality measurement in Allergy-Immunology are the paucity of updated quality measures and the challenges with incorporation into reimbursement and recognition programs. This report links JTFPP guidelines to specific quality measures and outlines a strategy to enhance quality measurement within Allergy-Immunology, including operationalization of specialty-specific measures and a call for a dedicated Allergy-Immunology MVP. Linking quality measurement to board (re)certification via the American Board of Allergy and Immunology provision of quality improvement credit and partnering with societies and fellowship programs in a specialty-wide quality agenda are additional important strategies for more effective quality measurement programs if made equitable and seamless to obtain and report. The AAAAI Measures Stewardship Committee appreciates these challenges and will continue to work with stakeholders to improve the quality measurements landscape for Allergy-Immunology specialists.

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