

Quality Measures and Their Importance to Allergy/Immunology

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With the implementation of the Affordable Care Act, it is important for allergy/immunology providers to understand how quality measures and their reporting will affect the practice of medicine. In association with reforms of the health care system, and the transition to value-based reimbursement, there is a greater need for the introduction of clinical quality measures for a number of conditions within the spectrum of allergic and immunologic disorders.

A measure is defined as: “the extent, dimensions, quantity, etc., of something, ascertained especially by comparison with a standard.”¹ A key feature of quality measures is defining the “standard,” as well as confirming suitability, reliability, validity, and impact. Increasingly, quality measures are being selected for public reporting initiatives in the context of evidence or guidelines recommendations that demonstrate that adoption of these quality measures will translate into improved patient care outcomes.

Quality measures have been an important reporting tool for primary care physicians and various specialties for several years. There are approximately 254 quality measures available for use in the 2015 Physician Quality Reporting System (PQRS) and 1666 measures were finalized across federal quality reporting programs

in 2014 by the Centers for Medicare & Medicaid Services (CMS).^{2,3} These can be as simple as process measures (eg, did one measure a patient’s blood pressure during a clinical encounter), to more involved and complicated quality measures, which assess whether implementation of certain change(s) improves the outcome of a patient group (eg, did performing serial foot examinations on diabetics reduce hospitalizations for complications of diabetes). Process measures have become standard measures for CMS reporting programs such as PQRS, and there is a strong emphasis being placed on the development and implementation of outcomes measures moving forward. Quality measures are typically developed by specialty societies, hospital systems (eg, Mayo Clinic or Cleveland Clinic), and measure developing entities such as the American Medical Association-convened Physician Consortium for Performance Improvement (AMA-PCPI) or the National Committee for Quality Assurance (NCQA). Quality measures are developed from guidelines or other data-driven documents that represent standards of care. Such quality measures undergo a rigorous developmental process that includes demonstration of an opportunity for improvement: evidence that shows that there is a gap between optimal care and normative care. Measure testing is also performed to ensure reliability (precision of the measurement) and validity (correctness of the measurement). These are criteria that agencies such as CMS, the National Quality Forum (NQF), and the NCQA have in place to evaluate quality measures and ensure that they are methodologically sound. During the measure development process, quality measures are submitted for a period of public review by a variety of stakeholders and relevant specialties before final approval occurs. This process may span several years from the initial development of a measure to its implementation in clinical practice.

To demonstrate an example of how a measure is structured, below is a CMS approved asthma quality measure developed by the AMA-PCPI that is relevant for allergy/immunology practice.

Asthma: Pharmacologic Therapy for Persistent Asthma - Ambulatory Care Setting (PQRS #53):

Description = Percentage of patients aged 5 years and older with a diagnosis of persistent asthma who were prescribed long-term control medication.

Numerator = Patients who were prescribed long-term control medication.

Denominator = All patients aged 5 years and older with a diagnosis of persistent asthma.

Why should implementation of quality measures matter to allergy/immunology providers? Federal law has mandated downward payment adjustments for clinicians not reporting in programs such as PQRS and Meaningful Use that will be applied to Medicare Part B Fee-for-Service reimbursements. Performance in the context of these measures will affect physician income.

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TABLE I. Asthma measures

Measure title	Measure description
Asthma: Pharmacologic Therapy for Persistent Asthma - Ambulatory Care Setting*	Percentage of patients aged 5 y and older with a diagnosis of persistent asthma who were prescribed long-term control medication. This measure will be calculated with 3 performance rates: 1. Patients prescribed inhaled corticosteroids (ICS) as their long-term control medication. 2. Patients prescribed alternative long-term control medications (non-ICS). 3. Total patients prescribed long-term control medication. [Note: This measure is currently approved by CMS for PQRS reporting, PQRS #53.]
Optimal Asthma Control†	Patients ages 5-50 (pediatrics ages 5-17) whose asthma is well-controlled as demonstrated by 1 of 3 age-appropriate patient reported outcome tools. [Note: This measure is approved by CMS for 2015 PQRS reporting, PQRS #398. Removal of the upper age limit has been recommended.]
Assessment of Asthma Control*	Percentage of patients aged 5 y and older with a diagnosis of asthma who were evaluated for asthma control (comprising asthma impairment and asthma risk) at least once during the measurement period.
Tobacco Smoke Exposure: Screening*	Percentage of patients aged 5 y and older with a diagnosis of asthma (or their primary caregiver) who were queried about tobacco smoke exposure at least once during the measurement period.
Tobacco Smoke Exposure: Intervention*	Percentage of patients aged 5 y and older with a diagnosis of asthma who are exposed to tobacco smoke (or their primary caregiver) who received tobacco use cessation intervention at least once during the measurement period.
Assessment of Asthma Risk*	Percentage of patients aged 5 y and older with an emergency department visit or an inpatient admission for an asthma exacerbation who were evaluated for asthma risk.
Asthma Discharge Plan*	Percentage of patients aged 5 y and older with an emergency department visit or an inpatient admission for an asthma exacerbation who are discharged from the emergency department OR inpatient setting with an asthma discharge plan.
Asthma Action Plan*	Percentage of patients aged 5 y and older with a diagnosis of asthma who received a written asthma action plan at one or more visits during the measurement period. [Note: This measure was developed and added to the set based on extensive comments received when the measure set initially went out for public comment in 2010. The draft included an upper age limit, but the measure was approved without that limitation.]
Asthma Medication Ratio‡	The percentage of patients 5-64 y of age who were identified as having persistent asthma and had a ratio of controller medications to total asthma medications of 0.50 or greater during the measurement year. [Note: Removal of the upper age limit has been recommended, NQF #1800.]

CMS, Centers for Medicare & Medicaid Services; PQRS, Physician Quality Reporting System; NQF, National Quality Forum.

*Measure steward: AMA-PCPI.⁴

†Measure steward: Minnesota Community Measurement.²

‡Measure steward: NCQA.⁵

TABLE II. Centers for Medicare & Medicaid Services (CMS) approved general measures

Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention*	Percentage of patients aged 18 y and older who were screened for tobacco use one or more times within 24 months and who received cessation counseling intervention if identified as a tobacco user. [Note: PQRS #226]
Documentation of Current Medications in the Medical Record§	Percentage of visits for patients aged 18 y and older for which the eligible professional attests to documenting a list of current medications using all immediate resources available on the date of the encounter. This list must include ALL known prescriptions, over-the-counters, herbals, and vitamin/mineral/dietary (nutritional) supplements and must contain the medications' name, dosage, frequency, and route of administration [Note: PQRS #130]
Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-up Plan§	Percentage of patients aged 18 y and older with a BMI documented during the current encounter or during the previous 6 months AND with a BMI outside of normal parameters; a follow-up plan is documented during the encounter or during the previous 6 months of the encounter Normal parameters: Age 65 y and older, BMI ≥ 23 and < 30 kg/m ² Age 18-64 y, BMI ≥ 18.5 and < 25 kg/m ² [Note: PQRS #128]

PQRS, Physician Quality Reporting System.

*Measure steward: AMA-PCPI.²

§Measure steward: CMS and Quality Insights of Pennsylvania (QIP).²

TABLE III. Sinusitis measures||

Accurate Diagnosis of Acute Sinusitis: Distinguishing Viral vs Bacterial Sinusitis	Percentage of patients aged 18 y and older with a diagnosis of acute sinusitis whose symptoms were assessed (history and physical exam) AND were classified as either viral sinusitis or acute bacterial sinusitis at the time of diagnosis.
Plain Film Radiography for Acute Sinusitis (Overuse)	Percentage of patients aged 18 y and older with a diagnosis of acute sinusitis who had a plain film radiography of the paranasal sinuses ordered at the time of diagnosis or received within 28 d after the date of diagnosis.
Adult Sinusitis: Computerized Tomography (CT) for Acute Sinusitis (Overuse)	Percentage of patients aged 18 y and older with a diagnosis of acute sinusitis who had a CT scan of the paranasal sinuses ordered at the time of diagnosis or received within 28 d after the date of diagnosis. [Note: This measure is currently approved by CMS for PQRS reporting, PQRS #333.]
Appropriate Diagnostic Testing for Chronic Sinusitis (Underuse)	Percentage of patients aged 18 y and older with a diagnosis of chronic sinusitis who had either a CT scan or nasal endoscopy of the paranasal sinuses ordered at the time of diagnosis or received within 90 d of initial diagnosis of chronic sinusitis.
More Than One Computerized Tomography (CT) Scan Within 90 Days for Chronic Sinusitis (Overuse)	Percentage of patients aged 18 y and older with a diagnosis of chronic sinusitis who had more than one CT scan of the paranasal sinuses ordered or received within 90 d after the date of diagnosis [Note: This measure is currently approved by CMS for PQRS reporting, PQRS #334.]
Adult Sinusitis: Antibiotic Prescribed for Acute Sinusitis (Appropriate Use)	Percentage of patients aged 18 y and older with a diagnosis of acute sinusitis who were prescribed an antibiotic within 7 d of diagnosis or within 10 d after the onset of symptoms. [Note: This measure is currently approved by CMS for PQRS reporting, PQRS #331.]
Watchful Waiting for Acute Bacterial Sinusitis: Initial Observation Without Antibiotics for Patients With Mild Illness (Appropriate Use)	Percentage of patients aged 18 y and older with a diagnosis of acute bacterial sinusitis who have mild illness, who were initially managed by observation without the use of antibiotics within 7 d of diagnosis or within 10 d after the onset of symptoms.
Adult Sinusitis: Appropriate Choice of Antibiotic: Amoxicillin Prescribed for Patients With Acute Bacterial Sinusitis	Percentage of patients aged 18 y and older with a diagnosis of acute bacterial sinusitis who were prescribed amoxicillin, with or without clavulanate, as a first-line antibiotic at the time of diagnosis. [Note: This measure is currently approved by CMS for PQRS reporting, PQRS #332.]
Premature Changing of Initial Antibiotic for Acute Bacterial Sinusitis (Overuse)	Percentage of patients aged 18 y and older with a diagnosis of acute bacterial sinusitis, on an initial antibiotic, whose antibiotic prescriptions were changed before 5 d of use.
Patient-Reported Health Status for Chronic Sinusitis (Quality Improvement Measure): Completion of Validated Questionnaire of Health Status at Time of Diagnosis	Percentage of patients aged 18 y and older with a diagnosis of chronic sinusitis who completed a questionnaire about their symptoms of chronic sinusitis and health status at the time of diagnosis using a validated tool or instrument and had the results documented in the medical record.
Patient-Reported Health Status for Chronic Sinusitis (Quality Improvement Measure): Completion of Validated Follow-up Questionnaire of Health Status	Percentage of patients aged 18 y and older with a diagnosis of chronic sinusitis who completed a follow-up questionnaire about their symptoms of chronic sinusitis and health status using a validated tool or instrument and had the results documented in the medical record.

CMS, Centers for Medicare & Medicaid Services; PQRS, Physician Quality Reporting System.

||The listed sinusitis measures are stewarded by the AMA-PCPI and the American Academy of Otolaryngology - Head and Neck Surgery (AAO-HNS).⁶

Poor compliance will result in a decrease of income by 1.5% in 2015 (based on unsatisfactory measure reporting or not reporting in 2013), and will increase to 2% in subsequent years. This penalty could be as high as 8% in future years across several quality reporting programs. This implies that it would be in the best interest of allergy/immunology providers to begin participating in quality reporting initiatives such as PQRS and Meaningful Use to avoid a decline in reimbursement. With an increased emphasis on outcomes measures, reporting now has the added benefit of helping your practice prepare for future changes in the reporting programs. One argument against the need to

perform and report measures is that in the majority of allergy/immunology practices, Medicare represents only a small proportion of patient care income. Although this may be true in some instances, it is quite likely that other carriers beyond CMS/Medicare will adopt similar if not identical policies for reimbursement in the near future.

Another challenge presented to the allergy/immunology specialty is the lack of quality measures applicable to our patient population. Measures approved by CMS for public reporting programs do not exist for several allergic/immunologic disorders, including immune deficiency, eosinophilic esophagitis, or

TABLE IV. Allergen immunotherapy measures

Allergen Immunotherapy Treatment: Allergen Specific Immunoglobulin E (IgE) Sensitivity Assessed and Documented Prior to Treatment	Percentage of patients aged 5 y and older who were assessed for IgE sensitivity to allergens before initiating allergen immunotherapy and results documented in the medical record.
Documentation of Clinical Response to Allergen Immunotherapy Within One Year	Percentage of patients aged 5 y and older who were evaluated for clinical improvement and efficacy within 1 y after initiating allergen immunotherapy and assessment documented in the medical record.
Documented Rationale to Support Long-Term Aeroallergen Immunotherapy Beyond Five Years as Indicated	Percentage of patients aged 5 y and older who were assessed for clinical rationale before continuation of aeroallergen immunotherapy beyond 5 y and rationale documented in the medical record.
Achievement of Projected Effective Dose of Standardized Allergens for Patient Treated With Allergen Immunotherapy for at Least One Year	Proportion of patients receiving subcutaneous allergen immunotherapy that contains at least one standardized extract (mite, ragweed, grass, and/or cat) who achieved the projected effective dose for all included standardized allergen extract(s) after at least 1 y of treatment.
Assessment of Asthma Symptoms Prior to Administration of Allergen Immunotherapy Injection(s)	Percentage of patients aged 5 y and older who are receiving subcutaneous allergen immunotherapy with a documented assessment of asthma symptoms before administration of allergen immunotherapy injections.
Documentation of the Consent Process for Subcutaneous Allergen Immunotherapy in the Medical Record	Percentage of patients aged 5 y and older initiating subcutaneous allergen immunotherapy injections documented to have received education (or parents, legal guardian received education) about possible adverse reactions.

TABLE V. Food allergy measures

Measure #1: The physician should use an appropriate and thorough medical history to identify food allergy.
Measure #2: The physician should re-evaluate a patient's food allergy to determine if it has resolved.
Measure #3: The physician should address nutritional counseling for children with milk allergy or food allergies to multiple (at least 2) ubiquitous foods (milk, egg, soy, wheat).
Measure #4: The physician should inform and educate patients and/or families about avoiding the allergenic food(s).
Measure #5: The physician should provide a food allergy and/or anaphylaxis emergency plan in writing.
Measure #6: The physician should discuss the indications and technique of administering self-injectable epinephrine.
Measure #7: The physician should vaccinate or encourage vaccination of persons with egg allergy who meet medical indications to receive influenza vaccine.

stinging insect allergy.² Some current asthma quality measures are not approved for use in patients older than 50 years.² Moreover, several asthma quality measures may be regarded as rudimentary at best, as demonstrated in the measures described in Table I. Some asthma quality measures were developed for primary care providers. For the next several years, allergy/immunology providers will be able to report more general quality measures (Table II) while awaiting the development of additional quality measures that are more relevant and disease specific for our scope of practice.

As shown in the example above, quality measures consist of a measure description (Tables III-VII), a denominator that designates the proportion of patients eligible for a diagnostic or therapeutic intervention, and a numerator that defines the proportion for whom this intervention is implemented. Each quality measure also stipulates cases appropriate for exclusion from the quality measure. For instance, patients presenting with isolated angioedema (ie, without concomitant urticaria) were excluded from the overuse measure concerning laboratory

TABLE VI. Urticaria measures

Measure #1 Overuse: Laboratory Tests for Connective Tissue Disease: Percentage of patients seen at one or more visits within a 12-month period with a diagnosis of chronic urticaria and/or angioedema, who underwent diagnostic testing for connective tissue disease in the absence of a history or symptoms consistent with or suggestive of a connective tissue disease.
Measure #2 Overuse: Laboratory Tests for Food Allergy: Percentage of patients seen at one or more visits within a 12-month period with a diagnosis of chronic urticaria and/or angioedema, who underwent skin or <i>in vitro</i> testing for food allergies.
Measure #3 Overuse: Laboratory Tests for Inhalant Allergy: Percentage of patients seen at one or more visits within a 12-month period with a diagnosis of chronic urticaria and/or angioedema, who underwent skin or <i>in vitro</i> testing for inhalant allergens.
Measure #4 Overuse: Laboratory Tests for Hereditary or Acquired Angioedema: Percentage of patients seen at one or more visits within a 12-month period with a diagnosis of chronic urticaria with or without angioedema, who underwent diagnostic testing for a C1 inhibitor deficiency syndrome.
Measure #5 Underuse: Higher Doses of Antihistamines: The proportion of patients with chronic urticaria that is uncontrolled on monotherapy with approved doses of second-generation antihistamines, who are advanced as tolerated to one or more of the following: higher doses of second-generation antihistamines, addition of another second-generation antihistamine, addition of a leukotriene antagonist, addition of an H2 blocker, or addition of a first-generation antihistamine to be taken at bedtime.

testing for the C1 inhibitor level and C1 inhibitor function assay in patients with chronic urticaria with or without angioedema (Table VI).

What is the status of measures for allergy/immunology? The Joint Taskforce on Quality and Performance Measures of the AAAAI and American College of Allergy Asthma and Immunology has dedicated its efforts over the past several years to developing a library of quality measures specific to our specialty. Although these currently available quality measures are

TABLE VII. Rhinitis measures

Measure #1: A patient with nasal symptoms not controlled on medication was evaluated by or referred for specific IgE testing to determine if there is aeroallergen sensitivity.

Measure #2: A patient with evidence of specific IgE to clinically relevant allergens and a history of rhinitis not well controlled on medications and environmental control measures should be considered for a course of allergen immunotherapy.

Measure #3: A patient with chronic rhinitis symptoms currently taking an oral antihistamine seeking care for uncontrolled rhinitis was prescribed an intranasal corticosteroid and/or an intranasal antihistamine.

Measure #4: A patient with allergic rhinitis with lower airways symptoms suggestive of asthma (cough, wheeze, shortness of breath, chest tightness) should be evaluated for asthma with pulmonary function testing (spirometry).

not endorsed by the NQF and are not currently accepted by CMS, it is hoped that as quality measures will be required in the future, our specialty will be able to self-implement these, developing full specifications with the goal of quality measure validation. In doing so, we will strive to meet the standards for acceptability from these organizations.

The current status of measures for our diseases is as follows:

Asthma: the measures in this table (Table I) have been developed by the AMA-PCPI, NCQA, and Minnesota Community Measurement.^{2,4,5} There is an ongoing attempt to increase the age of patients for whom these measures can be reported. The AAAAI has been asked to take over measure stewardship from the AMA-PCPI.

Sinusitis: quality measures for sinusitis have recently been developed and approved by the AMA-PCPI and AAO-HNS, and accepted by CMS for PQRS reporting (Table III).⁶

Allergen immunotherapy: quality measures were developed by the workgroup in 2011 (Table III). A registry is currently being implemented that will facilitate data entry for these quality measures.

Atopic dermatitis: this quality measure set was finalized by the AMA-PCPI in 2014. This will not be relevant to Medicare needs, but will be useful for Medicaid and other carriers.

Food allergy: quality measures were developed by the AAAAI (Table V).

Urticaria: quality measures for urticaria have been approved by the AAAAI and ACAAI.

Rhinitis: quality measures for rhinitis have been approved by the AAAAI and ACAAI.

Drug allergy: quality measures for drug allergy have been approved by the AAAAI and ACAAI.

The health care environment will be undergoing a radical change over the next several years. One of the factors that drive this change is the perception that a major obstacle to health care improvement is the lack of alignment of health care delivery with value. Although the process of aligning physician behavior with outcomes and value is imperfect, the process has nonetheless begun. In this climate, allergy/immunology providers need to demonstrate that what we do leads to improved patient care outcomes. The most effective strategy to achieve this goal will be

the implementation and validation of quality measures in our practices.

So what does one need to do now? It would be advisable to review the currently approved quality measures for CMS to determine which of these can be applied to your practice. As noted above, there will be a financial penalty implemented in 2015 based on 2013 reporting. Although initially this will likely represent a minimal financial burden to your practice, it is important to remember that CMS will be publically reporting on individuals who satisfactorily participate in PQRS (or other quality reporting programs) via the Physician Compare website (<http://www.medicare.gov/physiciancompare>). Physicians who are neither meeting measure standards nor reporting may be seen as “lower quality” providers. Being designated with such a label will not be desirable for you or your practice.

There is another potential benefit of collecting and measuring data from one’s practice. It is anticipated that, in the future, submission of measures for relevant allergic diseases may suffice for fulfilling requirements for part IV of the ABAI Maintenance of Certification process.

Many in the allergy/immunology community are quite familiar with practice parameters for our specialty, which have been developed by the Joint Practice Parameters Task Force. The allergy/immunology community is less familiar with quality measures, which are based on strong recommendations for diagnosis and management from these parameters. The implementation of these measures may appear daunting; however, the specialty of allergy/immunology will need to be actively engaged in the process of measures development and implementation in 2015 and beyond. Thankfully, every effort is being made by our specialty societies to enhance the quality measurement library for the allergy/immunology community. This will continue to be a major focus of the AAAAI, ACAAI, and ABAI during the next few years.

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