



Quality Measurement Manual

2017 UPDATE

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Purpose

This edition of the American Academy of Neurology's (AAN) Quality Measurement Manual outlines the AAN's approach to quality measure development for neurological conditions. This document supersedes information provided in the 2008 AAN Quality Measures Development Process, 2010 addendum, and 2014 manual update. This document:

- Provides an overview of quality measurement
- Provides the rationale for quality measure development by the AAN
- Outlines processes for development, testing, and evaluation of measures
- Outlines dissemination and implementation of quality measures in practice
- Explains the oversight role of the AAN's Quality and Safety Subcommittee (QSS)

Goals for AAN Quality Measure Development

- Develop measures to facilitate guideline implementation and improve quality of care provided to patients with neurological disorders and diseases
- Ensure that quality measures are understood as unique from guidelines and practice parameters
- Develop measures that demonstrate the value of specialist neurological care for patients
- Develop well-defined measure statements and technical specifications
- Define appropriate outcome measures and define necessary risk adjustment strategies
- Develop measures with appropriate stakeholder input
- Develop measures that are not burdensome for stakeholders to implement and measure in everyday practice
- Submit appropriate outpatient, individual provider measures for consideration in the AAN's Axon Registry®

AAN Quality Measures

- Have a strong evidence-base
- Address an objectively identified gap in patient care
- Are relevant to users and actionable in the clinical setting
- Are feasible to collect, measure, and track over time
- Directly measure health care outcomes or link processes of care closely to desired outcomes
- Improve or maintain health outcomes, patient safety, quality of life, cost of care, patient experience, or coordination of care
- Provide e-specifications when possible

AAN Quality Measures Are Not

- A statement of the standard of care
- A new clinical practice guideline for providers
- Mandates for clinical practice
- Required to have perfect performance rates all the time by 100% of clinicians
- An effort to penalize physicians
- Intended for use as practice standards in malpractice claims
- Intended for use to approve or deny insurance claims
- Intended to substitute for the independent professional judgment of the treating provider

Quality Measurement in Neurology

Quality measures assess the quality of patient care in an objective fashion. Though the principles of quality management and continuous quality improvement were formalized in the manufacturing and service industries as early as the 1940s, health care did not adopt formal principles of quality improvement until the 1980s, when the Joint Commission of Accreditation of Healthcare Organizations mandated quality improvement and measurement of outcomes and processes for hospital accreditation. (Bever CT, Holloway RG, Iverson DJ, et al. Invited article: Neurology and quality improvement – An introduction. *Neurology* 2008;70:1636-1640. “Bever 2008”) The 1980s also marked the start of evidence-based clinical practice guideline development, primarily under the aegis of medical specialty societies, professional associations, and some disease-specific organizations. In the 1990s, the concept of quality improvement first emerged in the outpatient setting, when managed care organizations began tracking performance measures such as immunization rates and mammography screening. (Bever 2008) In 1998, the federal government’s growing interest in quality improvement led to the development of a National Forum for Health Care Quality Measurement and Reporting, now known as the National Quality Forum (NQF). The NQF acts as the principal federal endorser of health care performance measures, quality indicators, and quality standards at the national level, and provides a liaison between the Centers for Medicaid & Medicare Services (CMS) and stakeholders within the health care sector, including medical specialty societies, provider groups, and consumer organizations. (National Quality Forum About Us. Available at: qualityforum.org/story/About_Us.aspx Accessed on April 27, 2017)

Cognizant of the potential impact of performance measurement on the practice of clinical neurology and of the need for neurology-specific quality measures developed by and for neurologists, the AAN incorporated quality measure development for neurological practice into its strategic plan in 2003. (American Academy of Neurology. Strategic Plan 2003, Practice and Patient Care) To spearhead this effort, the AAN established the Quality Measurement and Reporting (QMR) subcommittee and charged it with establishing the capacity to produce and serve as steward for quality measures for neurological conditions.

The Physician Consortium for Practice Improvement (PCPI), convened by the American Medical Association (AMA), took a national leadership role in developing evidence-based, physician-led, quality measures in the early 2000s. In 2016, the PCPI Foundation was established as an entity independent from the AMA. The PCPI Foundation focuses on three priority areas: quality improvement, measure development, and registry collaboration. (thepcpi.org Accessed on April 27, 2017) The PCPI Foundation primarily functions as a measure development contractor, but retains stewardship of numerous measures developed under its aegis that are updated on a regular basis, including a Dementia Cognitive Impairment measure originally developed in partnership with the AAN.

Beginning in 2008, the AAN participated in PCPI-led development of quality measurement sets for stroke and stroke rehabilitation and management of dementia. Recognizing the need for additional specialty-specific quality measures, the AAN began to develop measurement sets independently, (Cheng EM, Tonn S, Swain-Eng R, et al., Quality improvement in neurology: AAN Parkinson disease quality measures. *Neurology* 2010; 75:2021-2027) and the AAN measurement set catalog continues to grow. All AAN measures are available online at AAN.com/policy-and-guidelines/quality/quality-measures2/quality-measures/.

Quality Measurement Overview

Quality measures are one way that guideline recommendations are operationalized for use in clinical practice. Measures assess the degree to which physicians implement clinical practice guideline recommendations in practice. Ideally, specific processes of care should directly correlate to desired patient outcomes. However, at present the use of outcome measures continues to lag behind that of process measures. Process measures are easier to develop and do not require risk adjustment. It is via specification of the outcome measure, however, that the real power of the quality measurement enterprise will eventually be felt.

A quality measure (also called a quality indicator or performance measure) is an objective measurement of the proportion of patients who received the indicated process(es) of care and/or whether patients had the desired outcome(s) of care.

$$\text{Quality of Patient Care} = \frac{\text{patients who meet criterion}}{\text{eligible population-exclusions}}$$

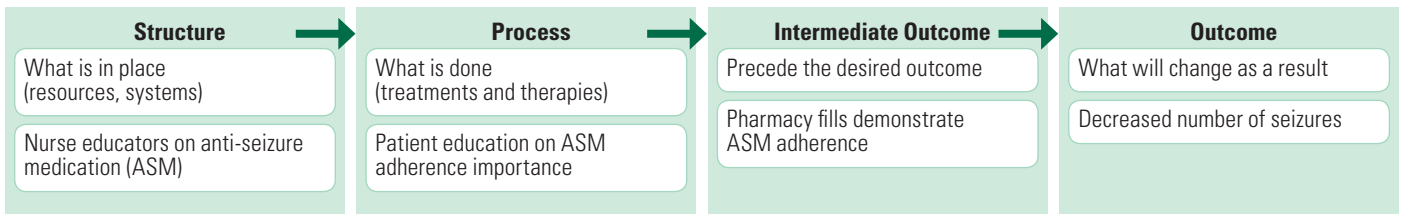
Quality measures are frequently reported as a percentage rate (or a score) derived by dividing the number of patients who meet a criterion for quality (the numerator) by the number of eligible patients within a given time frame (the denominator) where the numerator cases are a subset of the denominator cases. (AHRQ definition available at: qualitymeasures.ahrq.gov/about/glossary.aspx Accessed on June 13, 2017.)

Measure Types

Conceptually, quality measures in health care have been grouped into three main interrelated types: structural, process, and outcome measures. (Donabedian A. The role of outcomes in quality assessment and assurance. QRB Qual Rev Bull. 1992;18:356–360.) (See diagram below.)

Figure 1 demonstrates some of the more common measure types and shows how aspects of care progress from structure measures, to process, and then to measures of desired outcome.

Figure 1.



Structural measures emphasize innate features of a given health care system as a whole, such as policy guidelines, management systems, and resource allocation. Example: Percentage of physicians in a state who can send prescription information to a pharmacy electronically.

Process measures focus on the actions of health care professionals and evaluate whether these activities follow established evidence-based clinical guidelines, care protocols, and best practices. Example: Percentage of women with epilepsy provided counseling on how epilepsy and its treatment impacts contraception and pregnancy.

Outcome measures address critical endpoints that represent the culmination of an episode of care, defined as the entire spectrum of care related to a particular disease, disorder or condition, from the initial assessment through the final stages of care. Example: Percentage of patients diagnosed with Parkinson’s disease who fell during the measurement period.

Within the broader definition of outcome measures many subtypes can be defined:

- Intermediate outcome measures assess factors or short-term results that contribute to an ultimate outcome. Example: Percentage of patients diagnosed with a prior stroke who are maintaining their blood pressure within a healthy range.
- Patient Reported Outcome (PRO) measures (PROM) use an instrument or scale to directly assess any report of a patient’s health condition directly from that patient, without interpretation of the patient’s symptoms, feelings, or concerns by anyone else. Examples: PHQ-9, PROMIS, HIT-6
- PRO-Performance Measures (PRO-PM) are performance measures based on PROM. Example: Percentage of patients with diagnosis of major depression or dysthymia with an initial PHQ-9 score >9 with a follow-up PHQ-9 score <5 at 6 months.
- Health-related Quality of Life (HRQOL) is a concept that includes physical, mental, emotional, and social functioning domains, which focuses on the impact health status has on quality of life of the patient and/or caregiver.
- Economic or efficiency measures evaluate and compare health care outcomes based on cost. Historically, the AAN has not developed economic outcome measures given that cost information is not standardized and rarely available to providers in real time.

Unique Challenges to Outcome Measure Creation

There is increasing pressure to generate outcome measures for neurology as outcome measures 1) provide needed information to patients so they can make informed health care choices, 2) can be used by providers to drive improvement in care, and 3) are desired by accountability programs (i.e., pay for performance or public reporting) such as CMS' Merit-based Incentive Payment System (MIPS) to pay for quality rather than quantity. Subspecialty societies that develop measures have struggled to develop equitable outcome measures for disease states with long-term negative outcomes.

In August 2017, Baker and Chassin proposed four criteria for health care outcome measures that must be met to hold providers accountable in pay-for-performance or public reporting programs. (Baker DW and Chassin MR. Holding Providers Accountable for Health Care Outcomes. *Ann Intern Med.* 2017;167(6):418-423.) These four criteria are:

1. Strong evidence that good medical care leads to improvement in the outcome within the measurement period
2. The health care outcome should be measurable with a high degree of precision
3. Risk adjustment should include and accurately measure the risk factors most strongly associated with the health care outcome
4. Implementing the measure should have little chance of adverse consequences

The AAN hopes to adopt these criteria in the future. However, there remain limitations on the development of risk adjustment strategies as not all necessary data elements can be gathered for risk adjustment. As an example, disease severity is frequently not captured in neurologic populations and when captured is not gathered in a unified form. Frequently, information is being recorded in a physician note as mild, moderate, or severe and not as a numerical calculation using a standardized disease severity scale.

Composite measures combine multiple measures to produce a single score. Composite measures are valuable given their patient focus and indication of commitment to the highest quality of care. These measures are being adopted by federal, state, and private organizations for provider profiling and pay-for-performance programs. Given their complexity, composite measures require careful analysis to ensure sensitivity of results. There are multiple methods of calculation, such as equal weights, numerator-based weights, or all-or-nothing. (Shwartz M, Restuccia JD, Rosen AK. Composite Measures of Health Care Provider Performance: A Description of Approaches. *The Millbank Quarterly* 2015;93(4):788-825) An example of an all-or-none calculation composite measure created by the AAN is the percentage of patients aged 18 years and older with a diagnosis of ischemic stroke who were admitted to the hospital for inpatient care and received all appropriate intervention for optimal care (i.e., early antithrombotic administered, discharged on antithrombotic, and smoking cessation addressed) prior to discharge.

e-Measures (also known as eMeasures, Electronic Quality Measures, and eQMs) are health care quality measures standardized for data abstraction from any electronic health record. These measures utilize Quality Data Model (QDM), Health Quality Measure Format (HQMF), and the National Library of Medicine's Value Set Authority Center (VSAC) formats and models to establish a universal language for data collection.

Quality and Safety Subcommittee (QSS) Oversight

The AAN QSS was established in February 2014, with the merger of the former Patient Safety and the QMR subcommittees. QSS reports to the Practice Committee.

- QSS develops and maintains quality measures for neurological care and promotes improvements in clinical outcomes, patient safety, resource use, and patient experience.
- QSS oversees the development, testing and evaluation, and dissemination and implementation of quality measures.
- QSS increases the awareness of tools available to assist in quality reporting and measurement, and supports the integration of measures into qualified clinical data registries (including the AAN's Axon Registry®), pay-for-performance programs, and electronic health records.

- QSS develops the methodology for evaluating and rating externally generated quality measures as well as prioritizing and tracking measures affecting neurologists.

AAN Measure Development Process

The AAN quality measure development process starts once a topic is identified. The AAN commissions a multi-disciplinary measure development work group (Work Group) to evaluate available evidence and draft measure concepts. Figure 2. These Work Groups can be standing for a period of 2 years or ad hoc, terminating at time of measurement approval.

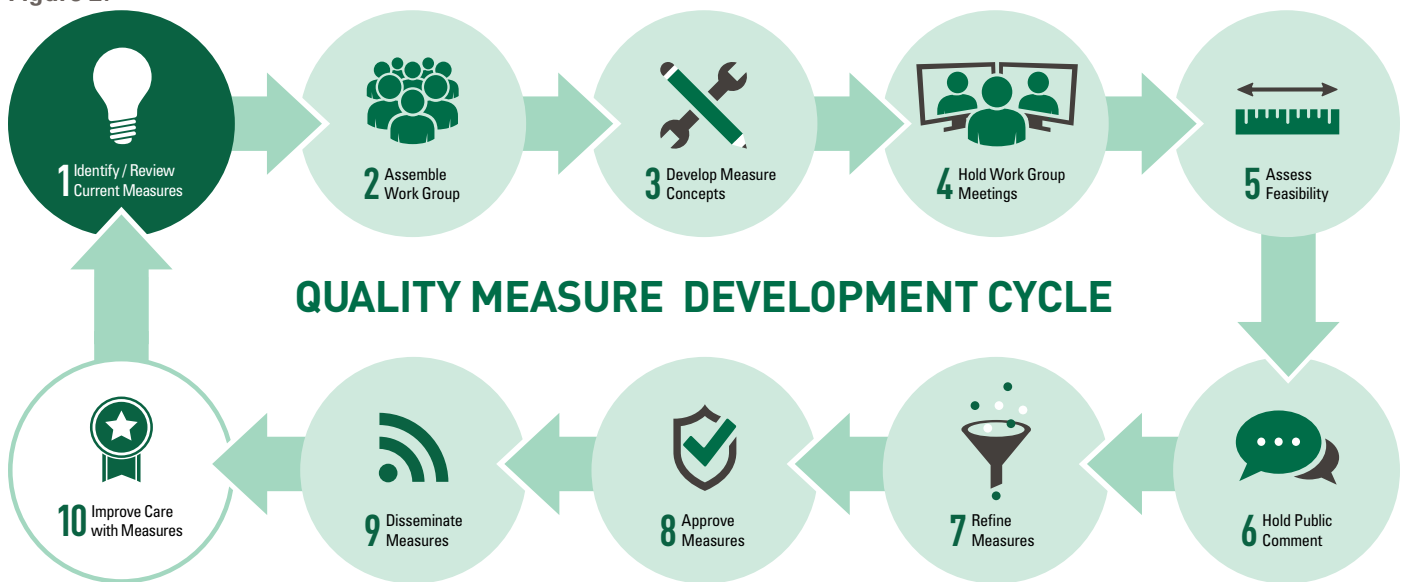
This process includes the following steps:

- Topic identification and selection
- Work Group formation
- Evidence identification

- Measure concepts drafted and refined
- Axon Registry review for feasibility
- Public comment
- Revisions
- Approvals
- Executive summary published

AAN measures undergo a regularly scheduled maintenance review, at which time decisions are made about retaining, retiring, or updating the measurement set, and whether changes to the evidence base suggest that new measures should be developed.

Figure 2.



Topic Identification and Selection

Any individual, AAN member, AAN committee, AAN section, government agency (i.e., CMS), non-governmental agency (i.e., PCPI and NQF), and employers or payers may submit a topic for measure development. Nominations are submitted in writing to QSS and should address the gap in care, potential impact, and evidence-base. Annually, an environmental scan is conducted to evaluate gaps in neurology-relevant measures, the evidence-base to support the development of measures, and the potential impact of topic area. QSS will review possible measure development topics, including those identified in the environmental scan and assign a topic for development dependent on available resources. QSS will determine the scope of the proposed measurement set, identify potential collaborating organizations or specialty societies, facilitator(s), and possible content experts to chair the Work Group.

Criteria for Topic Selection

The AAN is committed to development of high-quality measures. Table 1 summarizes required characteristics for each measure to be developed by Work Groups.

Table 1. Required characteristics for topic development into quality measures

If a potential topic does not meet all the required characteristics, it will not be prioritized.

Gaps and Variations in Care	Documented evidence that current care practices deviate (or observed patterns of deviation) from established norms or desired standards of care. Gaps in care may be manifested by underuse, overuse, or misuse of health services.
Evidence Base	One or more national, widely accepted clinical guidelines OR One or more documented quality improvement (QI) initiatives or research projects that have demonstrated improvement in the quality of care (based on measures of access, processes, outcomes or the patient experience of care).
High Impact	High prevalence of the clinical problem or condition, significant burden of illness, high cost, or nationally identified clinical priority area (e.g., Institute of Medicine, National Priority Partners) OR evidence of high impact within neurological care.

Work Group Formation

A multi-disciplinary stakeholder work group (Work Group) is formed that includes content, methodological, and patient expertise. The AAN makes every effort to collaborate with other appropriate and relevant professional associations and patient advocacy organizations when developing measures. If possible, the AAN will partner with other specialty societies to co-lead and facilitate the development process and disseminate measurement sets. If other organizations are not interested, or the disease state is specific to neurology, the AAN will invite other specialty societies to participate as stakeholder representatives. See [Appendix A](#) for process map.

Chairs

QSS may seek out a content expert(s) who has experience leading Work Groups or consensus activities and has a strong understanding of evidence-based medicine to chair measure development Work Groups. Not all Work Groups will have Chair(s) identified. The Chair(s) is identified through the topic nomination process, outreach to AAN sections or subspecialty societies, or through partner specialty societies when jointly developing a measurement set. Chair responsibilities include:

- Guide Work Group members to consensus opinions, resolve conflicts, and ensure a collaborative process
- Serve as a content expert (understanding of evidence, gaps in care, and patient outcomes; familiarity with valid and reliable assessment tools, etc.)
- Lead the meeting(s) to ensure input from all members
- Ensure the Work Group adheres to project timeline and scope
- Represent disseminated measures for endorsement to external organizations, Axon Registry, and others as needed
- Lead the development of the executive summary, if agreeable and available

Facilitators

The process of taking clinical practice guideline recommendations and developing quality measures based on guideline recommendations requires an understanding of the clinical area involved and the technical aspects of measure development. QSS would prefer to assign a QSS member as methodological facilitator to guide the measure development Work Group through the measures process; however, resource limitations may prevent assignment of a QSS facilitator to every measure project. Facilitator(s) may also be seated from AAN's Practice Committee, Registry Committee, or a partnering organization. If there are no volunteers to facilitate, QSS measurement development leaders will assist in identifying QSS membership to serve as facilitator(s). Facilitators are non-voting members of the Work Group. Facilitator responsibilities include:

- Serve as a neutral advisory party to measure development Work Group
- Advance the project goals and adhere to project development timeline

- Serve as methodologist in measure development and specification
- Develop and host the pre-meeting webinar
- Resolve work group conflict(s)
- Ensure the finalized measures are high quality, valid, and implementable
- Participate in pre-and-post-meeting leadership calls, as needed
- Participate in the development of the executive summary
- Have no voting authority on proposed measures or approval of the finalized set

Staff

AAN staff provide expertise in all areas of measure development, including AAN's measure development process, meeting facilitation, methodology, and manuscript development and submission. Staff are accountable for resource allocation, project management, coordination with external organizations, and publication process and approval. If another organization is partnering on a measure development project, these duties will be shared among staff from both organizations.

Leadership Team

Chairs, facilitators, and AAN staff (and other association staff representatives if applicable) comprise the leadership team. The leadership team responsibilities include:

- Review project scope
- Develop project deliverables and timelines
- Identify appropriate stakeholder organizations for participation and finalize Work Group make-up
- Identify and summarize the subject matter evidence base
- Lead Work Group in prioritization of measures for development
- Produce executive summary for journal publication; leadership team may decline and alternate Work Group members may be sought to serve in this role
- Champion the measurement set as needed before committees, user groups, and external agencies

Work Group Members

The leadership team generates a list of potential stakeholders including relevant AAN sections, patient advocacy organizations, relevant medical specialty associations, large group health employers, and insurer representatives and sends a call for nominations to this list. Current employees of pharmaceutical companies or device manufacturers may not serve on Work Groups. Interested nominees submit their curriculum vitae (CV), a conflict of interest form, and a statement of interest or experience with performance measures, quality improvement, and guideline development.

The leadership team shall identify the appropriate number of potential AAN representatives needed to form a well-rounded Work Group. Efforts will be made to include at least one general neurologist on each Work Group unless no general neurologists express interest. Often there will be a limited number of AAN representative seats, and the leadership team will use submitted nomination materials to select Work Group members based on a ranking that assesses guideline development and implementation experience, quality measure development and implementation experience, clinical expertise, and leadership experience.

Work Group responsibilities include:

- Develop quality measures that address gaps in care by assessing improvements to current clinical practice and moving toward desired outcomes based on clinical evidence
- Propose new measure concepts and provide feedback on measure concepts developed
- Provide insights on the degree to which measures are high quality, valid, and implementable

Work Group members will:

- Adhere to timelines and respond to requests for information
- Attend an introductory webinar and meetings as needed; meetings may be virtual or in-person
- Review existing guideline and literature recommendations
- Assist in the development of draft process and outcome quality measures
- Respond to public comments received and revise measures as appropriate
- Give final Work Group approval on measures
- Assist in development of an executive summary for publication
- Assist with technical specification of the measurement set
- Develop quality improvement implementation tools, as appropriate, to assist measure users in collection of data and application of data in quality improvement projects

An introductory webinar is held for all Work Group members. This webinar provides an opportunity for Work Group members to learn more about measure development, the AAN's rationale and goals for developing measures, and review Work Group timeline, scope, and other specifics. The AAN pays for all costs associated with Work Group member attendance at face-to-face meetings, including airfare and accommodations.

Standing Work Group Measure Development Projects

In 2016, QSS approved pilot process changes to encourage more rapid development of measures with a continuous opportunity for updates. In 2017, the AAN launched two projects for headache and epilepsy seating small Work Groups of 11-13 individuals for two-year terms. These projects will be led by a content chair and a methodological chair, who is a non-voting Work Group member. Work Groups will meet virtually, sharing responsibilities equally during an initial update of the measurement sets. Following final Work Group approvals of these updates, the Work Group

will continue to meet every six months to review the evidence base, measure testing and use data if available, and measure development efforts by others in the field. The Work Group shall assist in development of additional quality improvement resources to supplement the initial release of updated measurement sets. See [Appendix B](#) Process Flow.

Work Group members are seated for two-year terms and are representatives of associations/organizations. If a Work Group member requests to resign prior to the end of his/her term, the nominating organization will be contacted to assist in identification of a replacement. The Work Group members will serve up to three terms with rotating membership to ensure Work Group stability and measure exposure.

QSS will continue to roll out standing Work Groups for other major disease states. A total of nine standing groups are planned:

- Epilepsy (2017)
- Headache (2017)
- Movement disorders (2018)
- Multiple sclerosis (2019)
- Stroke (2019)
- Child neurology (2020)
- Geriatric care (2020)
- All/Universal neurology and outcomes (2021)
- Brain injury and emergency (2021)

An additional Neurology Measurement Evidence Review Work Group (ERG) will be piloted in 2018 to review other AAN measure development sets on an ongoing basis. These topics include, but are not limited to neuro-oncology, neurotology, amyotrophic lateral sclerosis (ALS), muscular dystrophy, and distal symmetric polyneuropathy (DSP). Six to eight AAN members, including neurologists and two to three patients, will be seated to the ERG. As a measurement set approaches the three-year review window, the ERG will seek out additional content expertise from the identified disease state to provide a multi-disciplinary team review. The ERG with content experts will conduct a literature review assisted by a medical librarian (see evidence identification section). The ERG will review literature, measure performance rates, and testing data to identify if measures are appropriate to update, reaffirm, or retire. If the ERG identifies the need for an update, an ad hoc Work Group with appropriate subject matter experts will be seated to complete the measurement set update. The ERG is available to identify and respond as needed to breakthrough developments in neurology for disease states not addressed through other standing quality measure work groups (see above). Following the pilot, QSS will evaluate the frequency of ERG meetings, as well as ERG size and make-up.

Relationships and Disclosures of Interest

The AAN is committed to producing independent, critical, and trustworthy quality measures. The AAN fulfills this commitment by convening experts that conduct in-depth review and develop measures based on the best available evidence in a manner that minimizes the influence of industry

and other relevant entities. The AAN makes best efforts not to include individuals with conflicts of interest in the development of AAN measures but recognizes that this is not always practicable and may preclude necessary thought leaders from participating. Therefore, management and disclosure of measure developer and reviewer relationships are conducted in compliance with the AAN Relationships & Conflicts of Interest Policy, Principles Governing Academy Relationships with External Sources of Support, and the Council for Medical Specialty Societies' Code for Interactions with Companies. The following procedures implement the relevant policies and outline the process followed through each phase of measure development and review.

Disclosing Relationships and Determining Relevance

Prospective Work Group members for AAN measure projects must disclose all financial and certain nonfinancial relationships with industry (including for-profit entities that develop, produce, market, or distribute drugs, devices, services, or therapies used to diagnose, treat, monitor, manage, or alleviate health conditions), as well as relevant relationships with other entities (including payers, government entities, and not-for-profit organizations) and intellectual biases by completing the AAN's Relationship Disclosure Form [AAN.com/AAN-Resources/Details/about-the-aan/relationships-and-conflicts-of-interest-policy/](https://aan.com/AAN-Resources/Details/about-the-aan/relationships-and-conflicts-of-interest-policy/) before commencing work on or reviewing an AAN measure. The form describes the categories or types of relationships to be reported. Members of QSS, other applicable AAN subcommittees and committees, and members of the Board of Directors who review AAN measures are required to make the same disclosures. The term relationship disclosure is preferred to conflict of interest disclosure, as not all relationships necessarily imply conflict or bias.

All relationships with industry must be disclosed regardless of the perceived relevance to the measure topic. However, to assist the reviewers, prospective Work Group members are asked to highlight relationships that they deem to be "relevant" to the measure's topic (see the following description of relevance). Regarding relationships with non-industry entities or intellectual biases, only those relationships or potential biases that are relevant to the measure topic must be disclosed. Intellectual biases may include "academic activities that create the potential for an attachment to a specific point of view that could unduly affect an individual's judgment about a specific recommendation" (Guyatt et al., 2010, *page 739*), examples of which are receipt of a grant or participation in research or article(s) directly related to the measure. In addition, a strong intellectual conflict would be judged to exist if a potential Work Group member had a strong preexisting opinion that would not be changed by strong evidence.

Project facilitators review each potential Chair(s) application before the prospective Work Group Chair(s) is officially invited to begin work on the measure project. QSS measure development leadership or project facilitators and chairs review each form before the prospective Work Group member is officially invited to begin work on the measure project. QSS measure development leadership or project facilitators and chairs review the relationship disclosures for any relevant relationships that may constitute a conflict of interest. Relevant relationships may include any of the following:

- A relationship or interest that relates to the same or similar topic, intellectual property or asset, or issue addressed in the measure
- A relationship of the person or an immediate family member having a reasonable possibility of financial, professional, or other personal gain or loss as a result of the measure
- A relationship with an "affected" company within industry, meaning there is a reasonable likelihood of direct regulatory or commercial impact (positive or negative) on the company as a result of care delivered in accordance with the measure. Affected companies will generally be identified before commencement of the measure project by QSS leadership and AAN staff, who will be assisted by the prospective Work Group members highlighting relationships they deem to be relevant, per the above disclosure process

QSS measure development leadership or project facilitators and chairs will consider the relevance of the relationship and the degree of influence when determining whether a conflict of interest exists. Depending on the severity of the conflict, mitigation or management steps may include not inviting the prospective Work Group member to participate or restricting the member's involvement in the development process (as described in the following paragraphs).

The relevance and severity of an intellectual bias can be difficult to objectively identify and measure. QSS measure development leadership or project facilitators and chairs will mitigate intellectual bias as much as possible.

Identifying Relationships Considered Conflicting That Preclude Work Group Involvement

Although some relationships may be appropriately managed with the mitigation techniques described in this section, others constitute conflicts of interest incapable of being managed and inconsistent with the AAN's goal of producing an independent measure set. Relationships that render an individual ineligible to serve on a measure Work Group include any of the following:

- Serving on a speakers bureau on behalf of an affected company in industry (this is a compensated role as a presenter for which any of the following circumstances are met: the company has a contractual right to dictate or control the content, the company created the slides/presentation for the speaker, or the presenter is expected to act as the company's agent or spokesperson for the primary purpose of disseminating company or product information)
- Being employed, or having been employed during the year before Work Group appointment, by a company in industry
- Holding significant ownership interest (shares greater than \$50,000 in value or an equity interest in a privately held company greater than five percent) in an affected company

In addition, QSS may choose not to appoint an individual as a lead author if the individual has any of the following relationships to the issues or products being assessed: having any stock or stock ownership, being compensated for expert testimony, being a pioneer or having any substantial direct or indirect compensation or other relationship that QSS deems as creating a conflict.

Understanding Work Group Composition and Responsibilities

The AAN requires that a majority (51 percent) of the members of a measure Work Group be free of conflicts of interest relevant to the subject matter of the measure.

If the Work Group has a chair/co-chair, the AAN requires chair (or at least one chair if there are co-chairs), be free of financial conflicts of interest relevant to the subject matter of the measure, and to remain free of such conflicts for at least one year after the measure is published.

Work Group members must update their Relationship Disclosure Form [AAN.com/AAN-Resources/Details/about-the-aan/relationships-and-conflicts-of-interest-policy/](https://aan.com/AAN-Resources/Details/about-the-aan/relationships-and-conflicts-of-interest-policy/) at least annually but also promptly at any time a relationship changes. All relationships that existed during the development of the measure will be disclosed as described in the following paragraphs.

The AAN prohibits measure developers from speaking about the measure they authored or serving as an expert witness about the measure on behalf of a company in industry, if that company could be positively or negatively affected by care provided in adherence with the measure, for a period of one year after the AAN's publication of the measure.

For measures of broad scope, Work Group members should not all be affiliated with the same institution or study group. If there is a recognized, credible controversy regarding the chosen measure topic, both perspectives should be represented on the Work Group.

The QSS reserves the right to make changes to the Work Group composition at any time to ensure balance and avoid bias.

Managing Conflicts for Measure Reviewers

AAN measures will be reviewed and approved only by committee and board members who do not have a conflict of interest, as determined by the Reviewing Authority in accordance with the AAN's Relationships & Conflicts of Interest Policy.

Disclosing Conflicts at Publication

The AAN's Relationships and Conflicts of Interest Policy and this section of the Quality Measurement Manual will be cited in the published measurement set, along with the relevant relationship disclosures of the Work Group members. In addition, to promote further transparency, a link to the full list of disclosed relationships will be included.

Identifying Violations of Conflict of Interest Policy for Measures

An AAN measure developer's or reviewer's failure to accurately, honestly and fully complete the Relationship Disclosure Form or adhere to the responsibilities described in this section of the manual may face sanctions by the AAN, including any or all of the following:

- Exclusion from developing future AAN measures
- Exclusion or removal from participation on AAN boards, committees, subcommittees, work groups, task forces, guideline or quality measurement panels, or other AAN positions
- Disciplinary action under the AAN's Disciplinary Action Policy at [AAN.com/membership/professionalism-and-disciplinary-program](https://aan.com/membership/professionalism-and-disciplinary-program)

Measure Concepts Drafted and Refined

Measure Development Evidence and Literature Requirements

The measure development process takes evidence-based guideline recommendations and uses them to support measure concepts. The measurement set is not a new guideline recommendation; rather, it is a way to operationalize existing recommendations for implementation into practice. The evidence behind AAN quality measures is not limited only to AAN guidelines, but also includes guidelines developed by other organizations and individuals as well as systematic reviews, meta-analyses, and clinical trials.

AAN staff, in conjunction with a medical librarian, conduct a comprehensive search to identify published guidelines, extant measures, and consensus recommendations from five years prior to current year or, in the case of the standing Work Group, search is conducted from the time of the last search to present date, using the National Guidelines Clearinghouse, the National Measures Clearinghouse, PubMed, MEDLINE, EMBASE, and the Cochrane Library. The medical librarian assists Work

Group leadership in identifying appropriate search terms, key words, search filters, and databases. The librarian conducts the searches on at least three major databases (MEDLINE®, Web of Science, EMBASE®, etc.). AAN staff reviews the results to ensure that the measures, guidelines, and consensus papers pertinent to the search are identified. All results are compiled into an Endnote® library. The literature search results are kept on file at the AAN. The following data are captured:

- Date(s) searches were conducted
- Search terms/strategy used
- Database(s) searched
- Date ranges included in search
- Explicit description of the inclusion and exclusion criteria

Appropriate Work Group experts review the selected abstracts and further refine the literature base according to relevance. To ensure that each measure has a solid base in current evidence, the AAN has implemented a set of requirements for the type and strength of literature that can be used. ([Appendix C](#))

Evidence requirements:

- Minimum requirement for literature to be considered to support a measure
 - Systematic review
 - Must meet AGREE II requirements
 - Guideline
 - Housed on AHRQ Guideline Clearinghouse
 - Or meets all the requirements to be on the website
 - Clinical trials
 - Articles rated based on AAN classification system
 - Case series and case reports cannot be used to support a measure

Measure Specification

Appendix D includes the current AAN measure specification template. Measure concepts are drafted by Work Group members and technical specifications included following finalization. Following the introductory webinar, Work Group members are encouraged to draft proposed measure concepts for the Work Group to review. Draft measure concepts include the following components:

- Measure Title: Specificity to disease state should be given to reduce confusion when possible (e.g., Falls for Patients with Multiple Sclerosis versus Falls Rate or Falls Assessment)
- Measure Description
- Eligible Population
 - Eligible Providers
 - Care Setting: Outpatient, inpatient, emergency department, etc.
 - Ages
 - Triggering Event
 - Diagnosis
- Denominator: Specifies the target population and time period. This is accomplished by referring back to the case definition used in the studies that led to the high-level recommendations. The definition should include inclusion criteria, such as the diagnosis, diagnostic subgroup, and acuity of diagnosis, age ranges, and other positive selection factors.
- Numerator: Specifies action needed to meet the measure
- Required and Allowable Exclusions:
 - In 2016, the AAN replaced the term exception with allowable and required exclusions to provide users with more direction and to adhere to standards in the field.
 - A denominator required exclusion is a factor supported by the clinical evidence that removes a patient from inclusion in the measure population. For example, if the denominator indicates the measure is for all patients aged 0 to 18 years of age, a patient who is 19 years of age is excluded. A required exclusion prevents the patient from entering the denominator population.
 - Allowable Exclusion: Is a factor supported by the clinical evidence that removes a patient from the denominator

population and prevents them from entering the numerator population. An example of an allowable exclusion is a patient refusal to complete a validated screening tool on a depression assessment measure. This patient would be removed from the denominator.

- Exclusion Rationale
- Measure Scoring: Usually recorded as percentage or proportion
- Interpretation of Score: Historically a higher score reflects better quality of care. Occasionally, inverse measures are created where a lower score is indicative of better quality of care. Example: Percentage of patients prescribed a dopamine-blocking medication. A lower score indicates higher quality of care.
- Measure Type: See [page 4](#) for further details
- Level of Measurement: Provider, practice, or system
- Risk Adjustment: See [Appendix E](#) AAN Statement on Comparing Outcomes of Patients. Outcome measures will address risk adjustment. The denominator should incorporate dimensions of risk for the outcome, where applicable, and must minimize the potential for gaming or affecting patient access to neurological care. To alleviate data burden, AAN measures should seek to avoid complex risk adjustment methodologies. ([Appendix E](#))
- For Process Measures, the Relationship to Desired Outcomes: A brief statement of the relationship to the desired outcome (for process measures only), which should provide evidence linking the process to improved outcomes.
- Opportunity to Improve Gap in Care: Evidence supporting variation in care that can be improved through measurement.
- Measure Harmonization: A Work Group may recommend the creation of a measure that may be similar to an existing measure. The measure specifications will address steps taken to harmonize the AAN measure with existing measures, as well as the rationale for development of a separate measure. As illustrated below in Table 2, a measure harmonization matrix, the AAN will not create measures in direct conflict with other measures. When possible, the AAN will partner with measure developers to include neurological conditions in existing and endorsed measures, as appropriate.

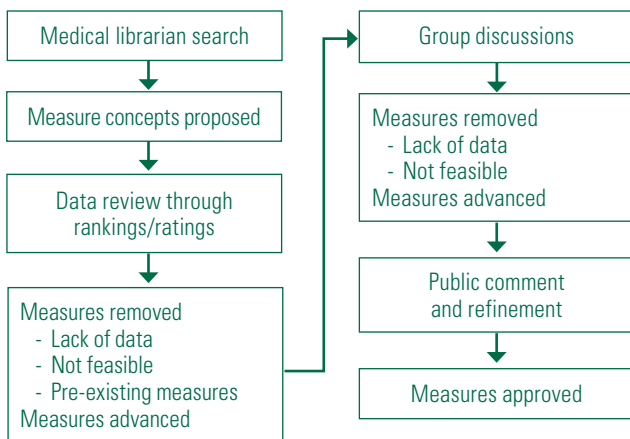
Table 2.		
	Same numerator focus	Different numerator focus
Same denominator	Competing measures. AAN refrains from developing measure	Related measures. Efforts taken to harmonize.
Different denominator	Related measures. Efforts taken to harmonize.	No competition. No need to harmonize. AAN develops measure.

- Measure Designation: All of AAN's measures are applicable for quality improvement, but may also be applicable for accountability programs.
- References: The evidence-base guidelines will be cited in each individual Measure Specification.
- e-Specifications are released once finalized and available online with individual measure specifications

Refining Candidate Measures

Work Group members review and then rate or rank these concepts for validity, feasibility, and gaps in care. (Figure 3.) This results in winnowing down to measures with a strong evidence base, demonstrated link to improved outcomes, and demonstrated opportunity to address a gap in care to be reviewed during Work Group meetings. During meetings members engage in an interactive discussion to review and edit the desired outcomes and candidate measures, review candidate measure specifications and rationale, and consider new measures. Following measure discussion, Work Group members vote to approve, not approve, or abstain for each measure. A simple majority is required to approve a measure. If approved, the measure is included in the draft measurement set for public comment. A modified Delphi process may be used to reach measure consensus if the Work Group has concerns regarding the level of evidence, link to health outcomes, existence of a gap in care, or other measure specification concerns.

Figure 3.



Measure Prioritization

Beginning in 2017, Work Groups will be encouraged to reduce the overall number of measures developed, focusing on areas with strong evidence, feasible data elements, and opportunity to address practice variation. The reason for this change is a result of concerns that multiple measures pose a burden on providers to report, and an increased focus to equitably distribute measure testing resources. CMS and NQF have moved to require measure testing data prior to use or endorsement of measures. To meet external program needs, the AAN will focus on creating smaller measure sets. It is impossible for one measurement set to meet the needs of all patients and providers impacted by a disease. Work Groups must focus on areas where variation in practice exist despite strong guideline statements to support a standard of care. QSS will continue to evaluate the potential to use measure testing data in advance of measure specifications release to winnow down measure concepts, but this will require advances in the field and creation of a nimble testing process.

Currently, the AAN does not require outcome measures be included in each measurement set, however, the AAN does require that each Work Group consider outcome concepts during their process. Following discussion, if an outcome concept is not approved, an explanation shall be provided in the measure specifications and manuscript.

QSS continues to evaluate the changing measurement landscape and places value in continuing to develop measures for quality improvement only. QSS notes creation of measures for the AAN ties directly to the AAN mission and such measures continue to have value for providers. QSS also notes an awareness that quality improvement measures may evolve into accountability measures at future updates.

Work Groups are encouraged to prioritize measures that can be e-specified into eMeasures.

For patient reported outcome performance measures (PRO-PM), Work Groups can provide a gamut of PRO tools or instruments for use in quality improvement specifications, however, for use in accountability programs Work Groups should identify one tool only. When a PRO-PM is submitted for use in an accountability program, the AAN will submit specifications with only one tool. Applicability to the National Quality Strategy (NQS) Domains is provided for measures during technical specification for use in CMS programs. Table 3 details CMS criteria. (More information on the NQS can be found at AHRQ.gov/workingforquality/ Accessed on August 29, 2017.) These criteria replace the previously utilized high priority areas of care coordination, safety, appropriateness/overuse, and quality improvement collaborative. The previous priority areas have extensive overlap with the NQS Domains and continue to be important drivers to meaningful measures.

Table 3.

National Quality Strategy Domain	Capture or reflect
Person and Caregiver-Centered Experience	a. the experience of each person and their family; or b. the extent to which the person and their family are engaged as partners in their care.
Patient Safety	a. structures or processes that are designed to reduce risk in the delivery of care; or b. an outcome that results from the presence or absence of structures or processes designed to reduce risk in the delivery of care.
Communication and Coordination of Care	a. the promotion of effective communication and coordination of care; or b. the communication and coordination of care.
Community/ Population Health	a. working with communities, a community being defined as a group of people who have a common characteristic such as geographic proximity, race, ethnicity, age, occupation, or other similar bonds (but is distinct in that the denominator is community based rather than utilization based – those seeking care); b. a practice to enable healthy living, an intervention to improve the health behaviors or health of a group of individuals; or c. measurement of a process focused on primary prevention of disease or general screening – examples include immunizations, smoking cessation, and age-based colon cancer screening.
Efficiency and Cost Reduction	a. measures focused on the appropriateness of care; or b. measures focused on the affordability of care for individuals, families, employers, or governments.
Effective Clinical Care	measures not otherwise categorized in the above described domains.

Axon Registry Review for Feasibility

AAN staff coordinates review of approved measure specifications with the AAN's Registry Committee prior to public comment. Registry Committee feedback is focused on identifying feasibility concerns

that would prevent collection of data, reduction of ambiguity in measure specifications, and harmonization with measure components similar to those being collected in the Axon Registry.

Public Comment and Revisions

Staff posts the approved measures on the AAN website for a minimum 21-day public comment period permitting interested individuals, groups, outside organizations, and stakeholders to comment and suggest changes to the measures. Staff sends a public comment notification to the AAN leadership, key subcommittees, sections, and the AAN membership. All patient advocacy organizations, relevant associations, large group health employers,

and insurer representatives are also contacted and encouraged to engage their members in the public comment period. After the public comment period, the leadership team will review each comment and consider measure revisions to improve clarity or modify content. All public comments receive a written response composed by the leadership team. Comments and responses are released to the public once a publication date has been established.

Approval and Endorsement

After the measurement set is revised post public comment period, the Work Group votes to approve a finalized version. A simple majority is required for approval. The measurement set, the comments, the response to those comments, and changes to the measurement set are submitted to QSS for review and approval (simple majority); facilitators who were non-voting members of the Work Group can and are encouraged to vote at the QSS approval stage. If approved by QSS, the measurement set goes to the Practice Committee and the

AAN Institute (AANI) Board of Directors for approval. If not approved by QSS, Practice Committee, or AANI Board, the measurement set will be returned to the Work Group for further action that may include modification or termination of further development. If a measurement set is developed in partnership with another organization, simultaneous Board of Director approval is sought to the AANI Board of Director approval. Upon approval from the AANI Board, the measurement set is final.

Executive Summary

An executive summary of the measurement set is prepared to publish in *Neurology*[®] and/or partnering organization journals. The leadership team will be asked to draft the manuscript. Work Group members may be approached to participate in drafting the manuscript if a member of the leadership team is not able or declines this role. The first author of the manuscript will be the individual who has written the majority of the manuscript. The manuscript highlights the final measures and rationales, and discusses how providers can implement the measures in practice. The manuscript will link to the full measurement set. All papers submitted to *Neurology*[®] undergo a separate peer review in accordance with the customs and practices of the Editorial Board. Editorial decisions are final. Following publication, AAN staff will coordinate dissemination activities.

In some instances, the Work Group members, QSS members, and Practice Committee members may disagree substantially with requested changes received from *Neurology*[®] peer review that cannot be resolved

with manuscript revisions. In cases of disagreement, the QSS Chair, a methodologist representative from QSS' measure development leadership team, and *Neurology*[®] Editor-in-Chief will convene a meeting to discuss whether the disagreement warrants publication of a report or editorial companion piece on the pertinent area(s) of controversy. If these individuals determine such a report is needed, the Work Group generates a discussion section or editorial content for inclusion in the final publication to highlight the point of disagreement. The *Neurology*[®] journal may choose to write a separate editorial or companion document for simultaneous publication that articulates how the areas of controversy related to the quality measures affect the field.

Periodic Review and Update

At a minimum, every three years the measurement set undergoes a full topic search for new evidence. QSS convenes an evidence review group (i.e., content experts, facilitators, and staff) to make recommendations on updating a measurement set. Chairs who previously demonstrated strong leadership skills will be asked if they are available to lead the evidence review. This group will review the previously used literature search criteria and update search terms as needed and will use the same evidence-base search process described above to identify relevant guidelines and evidence. Following a review of the evidence base, the evidence review group will make a recommendation to reaffirm, partial update, full update, or retire the measurement set. The appropriate AAN section executive leadership team reviews the recommendation and provides its input. QSS will vote for approval (a simple majority) on the recommendation. Figure 4 summarizes recommendations that can be made.

Reaffirmation

Following evidence review, if the recommendation is made to reaffirm a measurement set, the decision is forwarded to QSS for approval. No further review by Practice Committee and the AAN Institute (AANI) Board of Directors is warranted. The AAN will update dissemination information, including the *AAN.com* website to reflect the date of reaffirmation approval.

Update

Following evidence review, if the recommendation is made for partial a partial or full update, the decision is forwarded to QSS for approval. QSS will approve a measure development project and use the development process outlined above to update the measurement set.

Retirement

Following evidence review, if the recommendation is made to retire a measurement set, the decision is forwarded to QSS for approval. If approved for retirement by QSS, the measurement set goes to the Practice Committee and the AAN Institute (AANI) Board of Directors for further approval of retirement

Figure 4.

Reaffirm

- Recommend QSS reaffirm with no changes made to the set.
 - There has been no new literature published or changes to the literature that would indicate a need for new process or outcome measures, OR
 - There is new literature that supports the current process or outcome measures.
- Following AANI governance vetting, measure dissemination activities may occur if warranted.

Update

- Recommend QSS update select measures and/or develop new outcomes measures.
 - Partial Update may occur if the existing measures remain relevant and supported by literature BUT there is new literature that indicates the potential to develop one or two new outcome measures to supplement the existing measurement set.
 - Full Update may occur if there are reliability, validity, feasibility, and/or evidence concerns. The majority of measures warrant attention and review.
- Measure concepts are developed using process outlined above.
- Draft measures undergo public comment review and measures are vetted by AANI governance.

Retire

- Recommend QSS retire measures.
 - There is new literature that refutes or does not support all or select processes or outcomes in the set,
 - There is testing data indicating measures are not reliable, valid, or feasible, OR
 - There is no longer a gap in care for all or select measures or evidence measures are not meaningful in practice.
- Leadership team has option of recommending to retire select measures, the full set, or to conduct a full update. Retirement recommendations are reviewed with appropriate AAN section leadership and organizations that participated in development are asked to comment on this recommendation.

AAN Measure Testing and Evaluation Process

The AAN is currently unable to test all measures it develops due to the significant costs associated with testing. Testing preference will be given to outcome measures and measures that can be e-specified. Measures that have a high likelihood of being endorsed or incorporated into accountability programs will also be given priority. The AAN will test measures for reliability, validity, and feasibility.

Reliability

Reliability relates to the overall consistency of a measure and includes a review of:

- Data collection methodology, an analysis of data submitted and consultation with data abstractors
- Measure specification precision
 - Able to query denominator to whom the measure applies in data set
 - Able to identify those who achieved the specific measure focus in data set
- Distribution of missing data in data set
- Measure time window can be captured (12 month retrospective)
- Analysis of exclusion clarity and ability to find in data set
- Analysis of definition clarity
- Code lists with descriptors are accurate
- Scores are able to be computed from data set
- Inter-rater/abstractor or intra-rater/abstractor reliability (site-to-site comparisons of results above)

Validity

Validity is the extent to which a measure measures what it is intended to measure and includes a review of:

- Data collection methodology, an analysis of data submitted
- Calculation of scores across sites for each measure
 - Identify gaps in care across sites for each measure and calculate statistical significance of the gaps
 - Analysis of exclusions (frequency, rates)
- Justification for no risk adjustment/ stratification
 - For each measure stratify results by payer type, race/ethnicity, gender, geographic area
 - This stratification occurs to evaluate specific treatment gaps that might be occurring based on payer type, race/ethnicity, gender, or geographic area

Feasibility

Feasibility is the extent to which a measure is capable of being implemented in practice and includes a review of:

- Data collection methodology, a consultation with data abstractors
 - Data can be implemented and are available or could be captured without undue burden
 - Data availability
 - Frequency

The AAN has historically limited testing to measure data obtainable through an EHR.

AAN Measure Dissemination and Implementation Process

Technical Specifications of Measures

For each measure, a description and instructions are provided for how the measure is intended to be captured and reported. (See [Appendix D](#)) The AAN develops technical specifications for measures for inclusion in:

- Electronic Health Record (EHR) Data
- Chart Review
- Registry

The AAN is committed to development of EHR usable data measures. However, the Work Group may develop measures that cannot be e-specified. In such cases, registry and chart review may be

recommended. The AAN stopped developing administrative claims specifications in 2014 following the announcement that the American Medical Association is no longer supporting CPT-II code development, as CPT-II codes are vital to claims specifications.

The AAN is in the process of creating code value sets as well as the logic required for electronic capture of the quality measures with EHRs. A listing of the quality data model elements, code value sets, and measure logic (through the CMS Measure Authoring Tool) for appropriate measures will be made available when it is possible.

Implementation of Measures

The AAN will draft measure implementation tools to support quality improvement efforts for neurologists and notify the public

of measurement release in multiple formats that may include social media, [AAN.com](#), or webinars.

Disclaimer

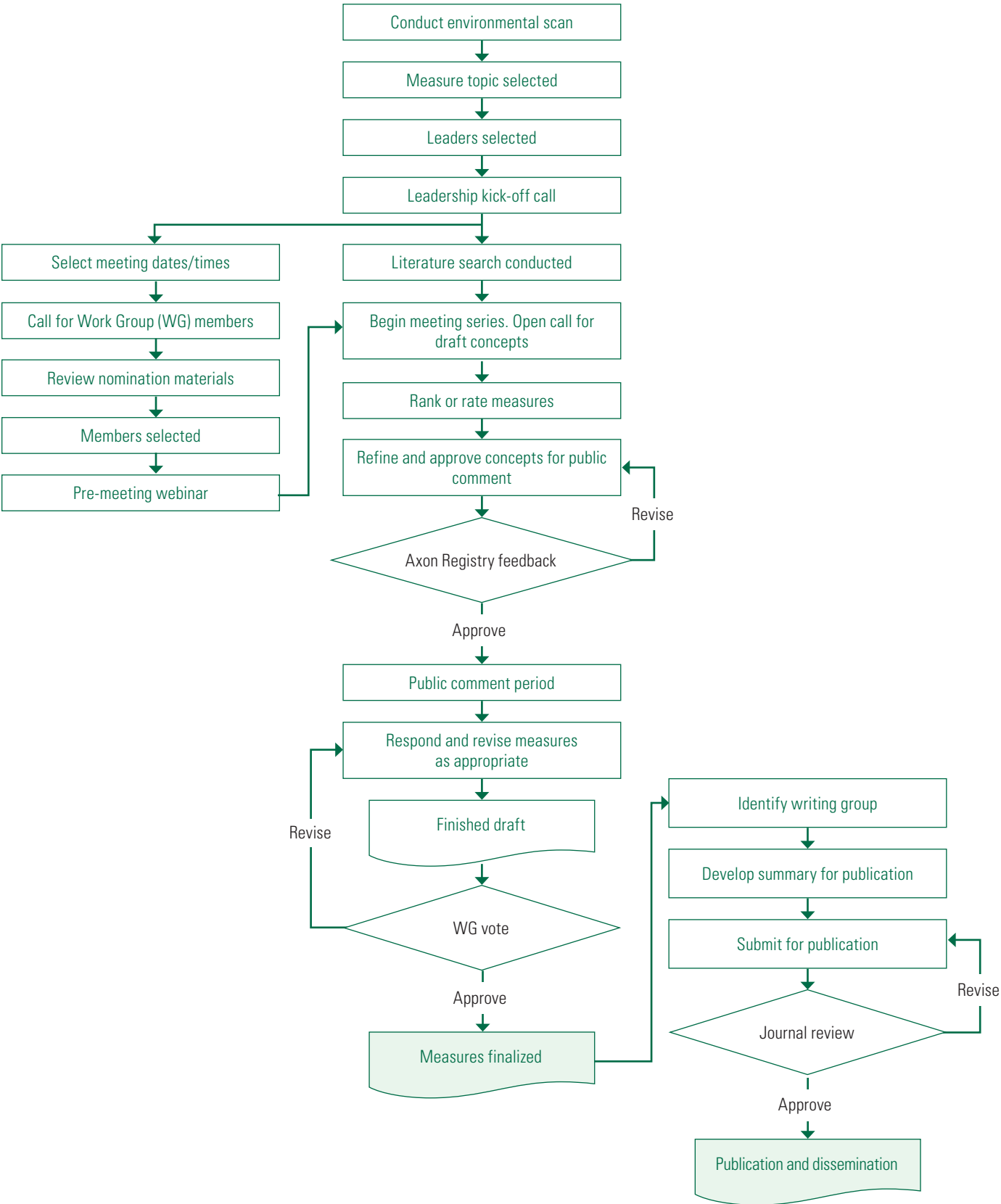
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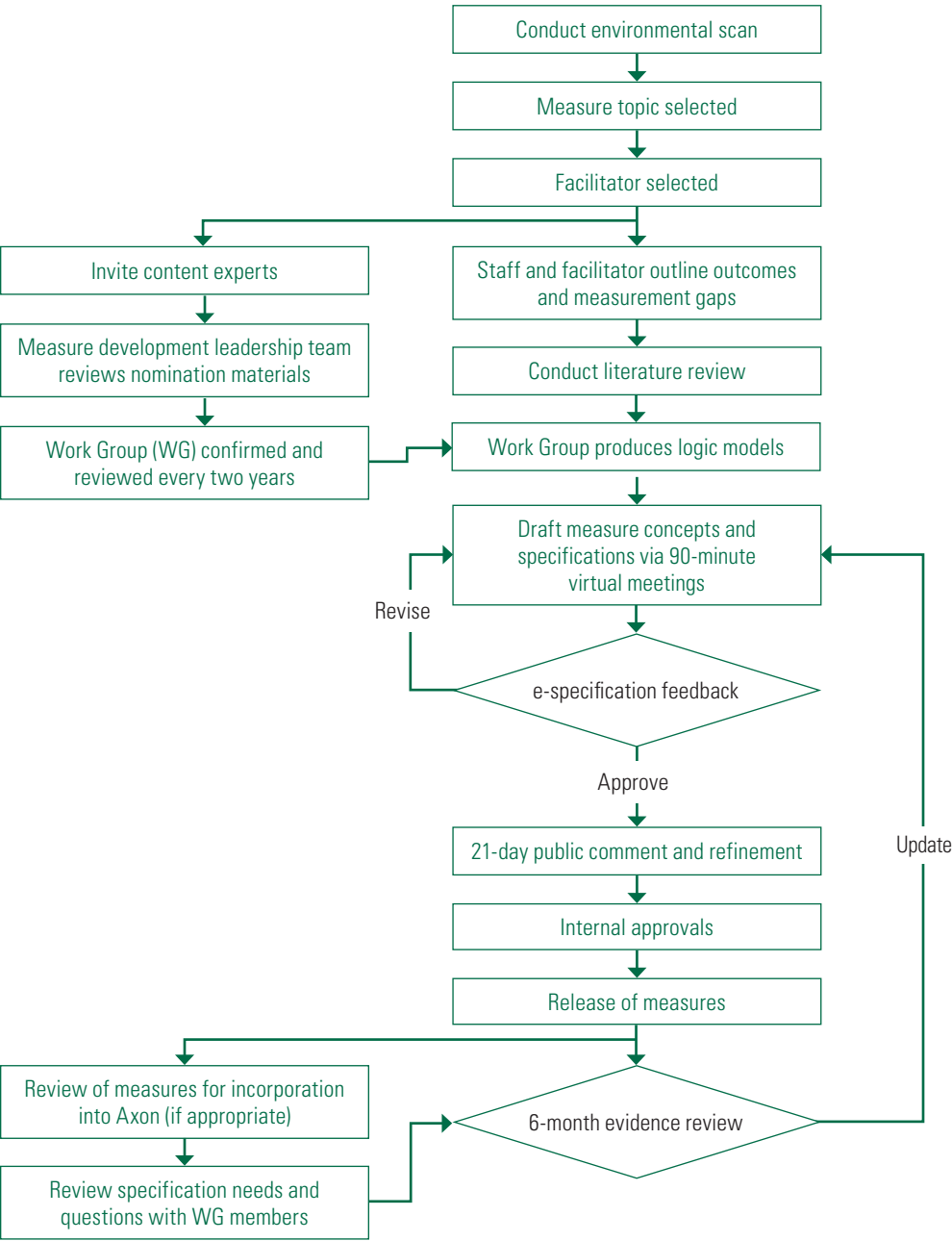
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Appendices

Appendix A: Process Map



Appendix B: Pilot Standing Work Group Process Map



Appendix C: Measure Development Evidence and Literature Requirements

Evidence requirements

1. Guidelines

Either housed on AHRQ guideline clearinghouse (www.guideline.gov) or meets the criteria to be housed on AHRQ guideline clearinghouse:

- a. The clinical practice guideline contains systematically developed statements including recommendations
- b. The clinical practice guideline was not created or funded by a pharmaceutical/industry organization
- c. The clinical practice guideline is based on a systematic review of evidence as demonstrated by documentation of each of the following features in the clinical practice guideline or its supporting documents
 - i. An explicit statement that the clinical practice guideline was based on a systematic review
 - ii. A description of the search strategy that includes a listing of database(s) searched, a summary of search terms used, the specific time period covered by the literature search including the beginning date (month/year) and end date (month/year), and the date(s) when the literature search was done
 - iii. A description of study selection that includes the number of studies identified, the number of studies included, and a summary of inclusion and exclusion criteria
 - iv. A synthesis of evidence from the selected studies, e.g., a detailed description or evidence tables
 - v. A summary of the evidence synthesis included in the guideline that relates the evidence to the recommendations, e.g., a descriptive summary or summary tables
- d. The clinical practice guideline or its supporting documents contain an assessment of the benefits and harms of recommended care and alternative care options
- e. The guideline is the most recent version published. The guideline must have been developed, reviewed, or revised within the past five years, as evidenced by appropriate documentation (e.g., the systematic review or detailed description of methodology)

2. Systematic Reviews

Meet the AGREEII requirements:

- a. Scope and Purpose
 - i. The overall objective(s) of the systematic review are specifically described
 - ii. The health questions covered by the systematic review are specifically described
 - iii. The population to whom the guideline is meant to apply is specifically described (PICO formatted questions – Patient, Intervention, Co-intervention, Outcome)
- b. Stakeholder involvement
 - i. The guideline development group includes individuals from all relevant professional groups
 - ii. The views and preferences of the target population (patients, public, etc.) have been sought
 - iii. The target users of the guideline are clearly defined
- c. Rigor of development
 - i. Systematic methods were used to search for evidence
 - ii. The criteria for selecting the evidence are clearly described
 - iii. The strengths and limitations of the body of evidence are clearly described
 - iv. The systematic review has been externally reviewed by experts prior to its publication
- d. The views of the funding body have not influenced the content of the systematic review
- e. COIs for authors have been recorded

3. Clinical Trials

No case series or case reports allowed.

Appendix D: Measure Specification Template

Measure Title		
Description		
Measurement Period		
Eligible Population	Eligible Providers	Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN)
	Care Setting(s)	[Outpatient, Inpatient, ED or Urgent Care, Residential (SNF, home care)]
	Ages	
	Event	
	Diagnosis	
Denominator	[Target population and time period]	
Numerator	[Action needed to meet the measure]	
Required Exclusions		
Allowable Exclusions	[Condition that should remove a patient, procedure, or unit of measurement from the denominator ONLY if the numerator criteria are not met.]	
Exclusion Rationale	[Explanation of exclusions]	
Measure Scoring		
Interpretation of Score		
Measure Type	[Process, Outcome]	
Level of Measurement	Individual Provider, Practice, System	
Risk Adjustment		
For Process Measures Relationship to Desired Outcome		
Opportunity to Improve Gap in Care	[Documented evidence of deviation (or observed patterns of deviation) in care from established norms or standards of care. Gaps in care may be manifested by underuse, overuse, or misuse of health services.]	
Harmonization with Existing Measures	[Work Group may recommend the creation of a measure that may be similar to an existing measure. Work Group should address steps taken to harmonize with existing measures or rationale for development of a separate measure.]	
References		

Flow Chart Diagram

Measure Codes

Code System	Code	Code Description

Appendix E: Statement on Comparing Outcomes

AAN Statement on Comparing Outcomes of Patients

Why this statement: Characteristics of patients can vary across practices and differences in those characteristics may impact the differences in health outcomes among those patients. Some examples of these characteristics are: demographics, co-morbidities, socioeconomic status, and disease severity. Because these variables are typically not under the control of a clinician, it would be inappropriate to compare outcomes of patients managed by different clinicians and practices without accounting for those differences in characteristics among patients. There are many approaches and models to improve comparability, but this statement will focus on risk adjustment. This area continues to evolve (1), and the AAN will revisit this statement regularly to ensure accuracy, as well as address other comparability methods (2) should they become more common.

AAN quality measures are used primarily to demonstrate compliance with evidence-based and consensus-based best practices within a given practice as a component of a robust quality improvement program. The AAN includes this statement to caution against using certain measures, particularly outcome measures, for comparison to other individuals/practices/hospitals without the necessary and appropriate risk adjustment.

What is risk adjustment: Risk adjustment is a statistical approach that can make populations more comparable by controlling for patient characteristics (most commonly adjusted variable is a patient's age) that are associated with outcomes but are beyond the control of the clinician. By doing so, the processes of care delivered and the outcomes of care can be more strongly linked.

Comparing measure results from practice to practice: For process measures, the characteristics of the population are generally not a large factor in comparing one practice to another. Outcome measures, however, may be influenced by characteristics of a patient that are beyond the control of a clinician.(3) For example, demographic characteristics, socioeconomic status, or presence of comorbid conditions, and disease severity may impact quality of life measurements. Unfortunately, for a particular outcome, there may not be sufficient scientific literature to specify the variables that should be included in a model of risk adjustment. When efforts to risk adjust are made, for example by adjusting socioeconomic status and disease severity, values may not be documented in the medical record, leading to incomplete risk adjustment.

When using outcome measures to compare one practice to another, a methodologist, such as a health researcher, statistician, actuary, or health economist, ought to ensure that the populations are comparable, apply the appropriate methodology to account for differences or state that no methodology exists or is needed.

Use of measures by other agencies for the purpose of pay-for-performance and public reporting programs: AAN measures, as they are rigorously developed, may be endorsed by the National Quality Forum or incorporated into Centers for Medicare & Medicaid Services (CMS) and private payer programs.

It is important when implementing outcomes measures in quality measurement programs that a method be employed to account for differences in patients beyond a clinician's control such as risk adjustment.

References and Additional Reading for AAN Statement on Comparing Outcomes of Patients

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