American Academy of Neurology

Quality Improvement in Neurology: Implementation of Clinical Practice Guidelines
Phase I: Quality Measures Development
2010 Edition

Table of Contents

Purpose..................................................................................................................................................3

Definition of Quality Measure, Quality of Care, Measure Statement.................................................3

Goals......................................................................................................................................................4

Potential Uses for Quality Measures.................................................................................................4

Stakeholders in Quality Measures for National Endorsement.............................................................4
  Environmental Landscape
  AAN’s Response as a Medical Specialty Organization
  Established Physician-led Measure Development Organization and
    Code Assignment Authority
  Payer Perspectives
  National Quality Forum

Oversight Role of QMR and Facilitator Assignment..........................................................................6

Measure Development Approaches.....................................................................................................6
  Criteria for Topic Selection
  Physician Consortium for Performance Improvement® (PCPI)-led Measure
    Development (PCPI Collaborative Process)
  PCPI Independent Measure Development Process
  AAN as a Measure Steward

AAN as Measure Steward.......................................................................................................................9

Topic Nomination..................................................................................................................................9

Topic Selection.....................................................................................................................................10

Evidence-base to Support Development of Measures.......................................................................10
  Source from Existing Guidelines
  Evidence-base Search Strategy
  Documenting the Literature Search
  Evaluating the Evidence-base for Acceptability of Guidelines

Co-chair Selection.................................................................12

Construction and Writing of Candidate Measures...........................................13

Panel Formation...........................................................................13
  Conflicts of Interest
  Copyright Form

Refining Candidate Measures...............................................................14

30-day Public Comment Period..............................................................14

Technical Specifications of Measures.......................................................15
  Proposed Use of Measure
  Defining the Population of Patients to Which the Performance Measures Applies

Assignment of Coding........................................................................16

Approval ..........................................................................................16

Manuscript and Dissemination of Measures...............................................16

Periodic Review and Updating.................................................................17

References.........................................................................................18

**AAN QMR Subcommittee Members**

Christopher Bever, Jr., MD, MBA, FAAN (Chair)
Richard M. Dubinsky, MD, MPH, FAAN (Vice-Chair)
  John R. Abshir, MD, FAAN
  Eric Cheng, MD, MS
  Charles C. Flippen, MD
  Daniel B. Hier, MD, MBA
  Donald J. Iverson, MD
  Rita Richardson, MD
  David Z. Wang, DO

**AAN Staff**

Sarah T. Tonn, MPH, Associate Director, Clinical Quality and Performance Evaluation
Rebecca Swain-Eng, MS, Manager, Performance and Implementation
Gina Gjorvad, Project Manager, Performance Measurement
Purpose

This 2010 Edition of the American Academy of Neurology’s (AAN) Quality Measures Development Process is provided to communicate the three approaches to performance measure development applied to neurologic conditions. This document:

- Identifies the stakeholders,
- Explains the oversight role of the AAN’s Quality Measurement and Reporting Subcommittee (QMR), and
- Outlines the development process as adapted from an existing process used by the largest physician lead measure developer, the American Medical Association (AMA)-Physician Consortium for Performance Improvement ® (PCPI).¹

Communicating the adapted national framework is important as it explains what a quality measure is, why measure development is becoming an imperative, and it establishes content integrity of performance measures. Evaluating the evidence base (i.e., clinical practice guidelines), supporting well-designed measures statements, supporting technical specifications, and committing to periodic review and updating the measures promote standardization and it lessens the burden of implementation for physicians. The process is a commitment to develop measures suitable for national endorsement.

The following phases are requisites for implementation of clinical practice guidelines and support the larger goal of quality improvement in neurology. Phase I is quality measures development, Phase II is testing and evaluation of quality measures, and Phase III is integrating quality measures into performance in practice. The intended use of measures is to translate clinical practice guideline recommendations (i.e., the evidence) into practice for specific aspects of care which have direct implications for patient care.

This document introduces Phase I: Quality Measures Development.

Definition of Quality Measure, Quality of Care, Measure Statement

A quality measure (also called a quality indicator or performance measure) has been defined² as “…an objective measurement that is designed to evaluate the quality of patient care.” The quality of patient care is frequently reported as a rate or a score derived by dividing the number of cases that meet a criterion for quality (the numerator) by the number of eligible cases within a given time frame (the denominator) where the numerator cases are a subset of the denominator cases.² Measure statements provide the full measure description, a numerator (how to perform the measure), a denominator (eligibility of the measure), and applicable exclusions (patients who are not appropriate for the measure) with examples for medical, patient, and/or system reasons. More specifics on the development of the measure and the measure statement are provided in details within the process.

Goals for Quality Measures Development

- Establish AAN as a prominent measure steward and developer for neurologic conditions
- Provide measures with broad stakeholder input
- Provide measures related to services neurologists provide
- Support standardized evidence-based content development methodology
- Provide well defined measures statement and technical specifications
- Develop measures intended to support guideline implementation
- Promote use of measures to narrow the ‘evidence-practice gaps’

Potential Uses for AAN Quality Measures

- Document that care is evidence-based
- Improve health outcomes for patients
- Promote quality improvement
- Promote increasing underutilized services, prevent misuses, or decrease overuse
- Measure quality to establish performance standards, reach benchmarks
- Reduce practice and system variation
- Recognition and reward for high levels of performance or improvement
- Share data and engage patients
- Advocate for fair reimbursement
- Affirm the role of neurologists in the diagnosis and treatment of neurological disorders
- Influence public or hospital policy
- Promote efficient use of resources
- Engage patients

Stakeholders in Quality Measures for National Endorsement

Nationally, there are a number of stakeholders invested in performance measure development. The AAN has been monitoring the national landscape and responded by building the capacity to serve as a measure steward and developer. The roles of the organizational leaders in measure development and endorsement need be understood. This section outlines the stakeholders and their influential role affecting AAN’s quality measure development and national endorsement status.

Environmental Landscape

The use of quality measures in health care has been growing over the past 20 years. This has been driven by evidence of wide variations in care quality, studies showing that clinical practice guidelines have little effect on physician behavior, and evidence that measurement, particularly when linked to payment, can improve care quality. Based on this, some payers are beginning to link payment either to reporting of measures or performance of measures. In addition, performance on quality measures is being incorporated into programs for maintenance of specialty certification, and the Federation of State Medical Boards is considering the use of quality measures in newly mandated maintenance of licensure programs.
AAN’s Response as a Medical Specialty Organization
In response to these national developments, the Board of Directors of the AAN incorporated quality measures development for neurological practice into their 2003 strategic plan.\textsuperscript{17} In 2008, the AAN established the capacity to produce quality measures for neurological conditions as outlined through an approved Quality Measures Process Manual.\textsuperscript{18}

Established Physician-led Measure Development Organization and Code Assignment Authority
The AMA-convened PCPI is the largest and most established physician-led measure development organization. The PCPI consists of over 170 member organizations, including most medical specialty associations and state medical societies.\textsuperscript{1} The AAN adopted the existing national framework from PCPI for the development of quality measures for neurologic conditions.

In the development of measure statements and subsequent technical specifications, Current Procedural Terminology (CPT) Category II code assignments are specified. The AMA owns the CPT Category II codes which are reviewed and assigned by the Performance Measures Advisory Group (PMAG), an advisory body to the CPT Editorial Panel and the CPT/HCPAC Advisory Committee.\textsuperscript{19} The PMAG is comprised of performance measurement experts representing the Agency for Healthcare Research and Quality (AHRQ), the American Medical Association (AMA), the Centers for Medicare and Medicaid Services (CMS), the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), the National Committee for Quality Assurance (NCQA) and the PCPI.\textsuperscript{19} The PMAG seeks additional expertise and/or input from other national health care organizations; as necessary, including national medical specialty societies, other national health care professional associations, accrediting bodies and federal regulatory agencies.\textsuperscript{19}

Payer Perspectives
The Center for Medicare and Medicaid Services (CMS) is the largest payer of health care services. The CMS Physician Quality Reporting Initiative (PQRI), a pay-for-reporting program, currently pays a small bonus to participating physicians, but in 2015 will penalize physicians who do not participate.\textsuperscript{20} Recently passed health care reform legislation contains provisions where 0.5% of Medicare billing payments in 2011 will be for practitioners who participate in maintenance of certification programs, establishing a link between certification and payment.\textsuperscript{20}

To facilitate implementation of quality measures into CMS payment incentive programs, the CMS conducts a ‘call’ for fully specified, well-defined performance measures during the first quarter of every year. The submissions are published in the Proposed Rule of the Congressional Federal Register (CFR) for public comment in May-June of every year. Final measure names are published in the Final Rule of the CFR in November-December of every year. Typically, CMS only accepts National Quality Forum (NQF)-endorsed measures.

The Healthcare Effectiveness Data and Information Set (HEDIS) is a tool used by more than 90% of America’s health plans to measure performance on important dimensions of care and service.\textsuperscript{21} Altogether, HEDIS consists of 71 measures across 8 domains of care. Because so many plans collect HEDIS data, and because the measures are so specifically defined, HEDIS makes it possible to compare the performance of health plans on an "apples-to-apples" basis.\textsuperscript{21}
Health plans also use HEDIS results themselves to see where they need to focus their improvement efforts.\textsuperscript{21}

\textit{National Quality Forum (NQF)}

The NQF mission is to improve the quality of American healthcare by setting national priorities and goals for performance improvement; endorsing national consensus standards for measuring and publicly reporting on performance; and promoting the attainment of national goals through education and outreach programs.\textsuperscript{22} NQF has served as 1) a convener of key public and private sector leaders to establish national priorities and goals to achieve healthcare that is safe, effective, patient-centered, timely, efficient, and equitable; 2) National endorsement organization striving to have NQF-endorsed standards be the primary standards used to measure and report on the quality and efficiency of healthcare in the United States; and 3) a major driving force for and facilitator of continuous quality improvement of American healthcare quality.\textsuperscript{22}

\textbf{Oversight Role of Quality Measurement and Reporting Subcommittee (QMR) and Facilitator Assignment}

The AAN QMR Subcommittee was established in March 2007 and was charged with developing and validating performance measures and preparing members to incorporate quality improvement and accountability into their practices. The QMR grew out of a working group of the Quality Standards Subcommittee (QSS), the AAN’s guideline development oversight group. The vision of the QMR is every neurologist provides value to patients by integrating quality improvement into daily practice. The mission is to develop and disseminate quality measures and tools and assure that quality measures are important, valid, feasible, and useable. The QMR oversees the development, beta testing, and supports the integration of quality measures into programs and electronic health records. The QMR is charged with developing the methodology for evaluating and rating externally generated quality measures as well as prioritizing and tracking measures affecting neurologists.

For every quality measures topic, a QMR facilitator is assigned by the QMR to guide the panel co-chairs, the AAN staff, and the measures process. The QMR facilitator serves as a voting member of the panel. The process of taking practice recommendations from clinical practice guidelines and developing measures requires an understanding of the clinical areas involved as well as the technical aspects of measure development.

\textbf{Measure Development Approaches}

There are three approaches to the development of measures using the national framework adapted from PCPI.

- PCPI Collaborative Process\textsuperscript{23}
- PCPI Independent Measure Development Process\textsuperscript{23}
- AAN as Measure Steward

Commonalities between PCPI Collaborative and PCPI Independent Processes (“PCPI Process”) 23

The PCPI promotes collaborative development of evidence-based clinical performance measures by convening topic-specific expert work groups or panels with multi-specialty and multi-disciplinary representation (“PCPI process”). The PCPI members may request to develop performance measures through either the PCPI process or through the independent measure development process. The PCPI conducts a call for topic nominations in September of every year.

The PCPI’s request form for measure development includes criteria for topic selection and the process description for approval of the topic. The request is evaluated and prioritized in the context of the PCPI criteria for topic selection which aids in prioritizing and directing the future activities of the PCPI.

The criterion for topic selection applies to all three approaches; however, the approval process description differs and is explained under the separate approaches.

Criteria for Topic Selection

<table>
<thead>
<tr>
<th>Required characteristics</th>
<th>Gaps and Variations in Care</th>
<th>Evidence Base</th>
<th>High Impact</th>
<th>If a potential topic does not meet all the required characteristics, it will not be prioritized.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required characteristics are those that must be in place prior to beginning work on any proposed measure development topic.</td>
<td>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.</td>
<td>One or more national, widely-accepted clinical guidelines that meet the standards set forth by the PCPI Position Statement – The Evidence Base Required for Measures Development 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)</td>
<td>High prevalence of the clinical problem or condition, significant burden of illness, high cost, or nationally identified clinical priority area (eg, Institute of Medicine, National Priority Partners) For the independent measure development process, measure topics may be considered that do not address a high prevalence condition or national priority, but should be a high impact area within a specialty area or medical domain.</td>
<td>If a potential topic does not meet all the required characteristics, it will not be prioritized.</td>
</tr>
</tbody>
</table>

High value characteristics

High value characteristics represent an overlap of priority areas that have been identified by the Institute of Medicine, National Priority Partners, and the PCPI ad hoc committee on priorities. Potential topics should feasibly foster measure development in these domains.

| Care Coordination | Care Coordination Improve coordination of care among a patient’s multiple providers and during entire episodes of illness addressing one of the following domains: healthcare “home” (ie, a source of usual care selected by the patient, integration of care |
### Patient Safety
- Reduce healthcare associated infections, including surgical site infection, catheter associated blood stream infections, catheter associated urinary tract infections, ventilator associated pneumonia.
- Reduce surgical mishaps: wrong site surgery, foreign objects retained after surgery, air embolism
- Reduce adverse drug events
- Reduce preventable complications: pressure ulcers, falls, blood product injury

### Appropriateness/Overuse
- Address at least one of nine targeted areas:
  - Inappropriate medication use
  - Unnecessary laboratory tests
  - Inappropriate maternity care interventions
  - Inappropriate diagnostic procedures
  - Inappropriate procedures
  - Unnecessary consultations
  - Preventable emergency department visits and hospitalizations
  - Inappropriate non-palliative services at end of life
  - Potentially harmful preventive services with no benefit

### Quality Improvement Collaboratives
- Measures that can be used in quality improvement collaboratives that can accelerate the spread of measures use.

---

**In addition to meeting the required characteristics, topics that would foster significant work in these domains will receive the highest priority.**

Once the criteria for selection has been completed for the desired topic for measure development, the information is forwarded to:

1) The PCPI Executive Committee (EC), for members interested in measure development through the PCPI process OR
2) The PCPI Measures Development, Methodology, and Oversight Advisory Committee (MDMO-AC), for members interested in the independent measure development process

The appropriate committee reviews the request and may 1) approve the submission [for submissions to the MDMO-AC, the development topic then is referred to the PCPI EC for additional review] 2) request more information from the submitting organization or 3) decline the submission.

If multiple development topics are submitted and approved, the PCPI EC prioritize topics based on the information provided in the request form and according to the criteria for topic selection.

**PCPI-led Measure Development (PCPI Collaborative Process)**

The benefits of PCPI-led measure development process are many: the PCPI staff verifies the criteria for selection and they augment the materials; the majority of the panel meeting costs are covered by the PCPI as well as the beta testing; the PCPI staff review and respond to public comments; notify the full voting membership of the set for public comments and process the set

©American Academy of Neurology. All rights reserved.
through approval; specify measures for administrative claims data and electronic health records; complete proposals for CPT-II codes, if applicable, and submit them for review; submit the measures for endorsement by the NQF, and propose, manage, and conduct the pilot test projects for measure validation. The PCPI takes on the review and updating responsibilities as the measure steward.

PCPI Independent Measure Development Process

For PCPI members choosing to develop measures through the independent process, a means for including PCPI representation and requesting PCPI review and approval of the completed measures is available. The independent process requires the measure developer to also be the measure steward. Additionally, for PCPI approval of measures developed through the independent measure development process, the following eligibility requirements apply:

- Developer must be full voting member of PCPI
- Developer must invite PCPI representation on the measure development panel at the beginning of the measure development process. Appropriate PCPI representation is determined by the PCPI Executive Committee and may include PCPI staff member(s) and/or PCPI representative(s) with relevant clinical or methodological experience
- Developer must defer publication of completed measures until the PCPI review process is completed
- The external development process must include all elements of the PCPI measure development methodology, including:
  - Multi-specialty, multi-disciplinary representation on the measure development panel
  - Consideration of all relevant clinical guidelines
  - Consideration of evidence ranking and strength of recommendation statements
  - Development of technical specifications
  - Consideration of potential use of measures for accountability
  - Solicitation of public comments for at least 30 days including notification to the PCPI members that public comment period is open
  - Timeline and procedures for periodic review, update and maintenance of measures

AAN as Measure Steward

The AAN’s process includes all elements of the PCPI measure development process (e.g., multi-specialty and multi-disciplinary inclusiveness of the measure development panel), consideration of existing guideline recommendations and the strength of evidence, development of technical specifications, consideration of potential uses of measures for accountability, solicitation of public comments, periodic review and maintenance of measures as outlined in Appendices I, II, and III of the PCPI’s Rules and Procedures. The topic selection criteria is the same as the “Criteria for Topic Selection” outlined above. This process ensures relevance for development of a specific topic as well as helps set priorities for the QMR.

AAN as Measure Steward

The following process outlines in more detail AAN’s process when serving as the measure steward.

**Topic Nomination**

Any AAN member, AAN Committee, AAN Section, individual neurologist, subspecialty, government agency (i.e., CMS), nongovernmental agencies (i.e., PCPI, AQA Alliance, and the NQF), payers including large self-insured employers or measure vendors may submit a topic for measure development. Nominations must be received in writing and address the evidence-base when reviewing guideline and other evidence sources using the same topic selection criteria outlined earlier. The QMR may also request claims data from private payers and other insurers, if a topic warrants this approach.

The requirements for submission of a topic demonstrate the availability and strength of evidence on the topic of interest. Topics for measure development are identified and ranked by the QMR Subcommittee based on the selection criteria, measures up for review, measures in development, and need. In particular, practice parameters, practice advisories and technology assessments with high level recommendations developed by the QSS and the Therapeutics and Technology Assessment (TTA) Subcommittee may be a suitable topic for measure development. Appropriate recommendations for consideration are ones which when converted into statements of quality are likely to improve health outcomes, patient safety or coordination of care, and that are valid and practical to implement.

The assignment of a topic for development is also dependent on the resources available to the QMR.

**Topic Selection**

Topic selection is informed through the literature review demonstrating gaps in care (either room for improvement or unexplained variation in care), the evidence-base to support the development of measures (existing evidence based practice recommendations and/or measures); and the potential impact of topic area to include prevalence, burden of illness (estimates of morbidity and mortality), cost, or the national identification as clinical priority area.  

AAN staff review the evidence and information submitted or commissioned by QMR. The QMR assigns a QMR facilitator who works with AAN staff to conduct a thorough review of the nominator’s application. A QMR conference call is scheduled to review the results of the application, review for prioritization, and timeline for the topic. The call with QMR is used to also determine the scope of panel representation (the organizations both within and outside of the AAN that should be represented) and the recommendations for co-chairs. A preliminary list of organizations and co-chair recommendations is generated as well as the panel charge, work plan, and timeline.

**Evidence-base to Support Development of Measures**

*Source from Existing Guidelines*

The evidence-base required for measures development is based on principles of evidence-based medicine which involves clinical expertise and best available clinical evidence from systematic and transparent research. A brief review of guideline development methodology is warranted.
Clinical practice guidelines are systematically developed statements that assist practitioners and patient decisions about appropriate health care for specific clinical circumstances. Their purpose is to make explicit recommendations with a definite intent to influence clinicians.

The AAN practice guideline process completes a systematic review of the literature and formulates recommendations. The AAN guidelines process also uses a classification of evidence rating scheme which assigns a ‘grade’ or ‘level’ to the evidence based on the type and quality of the research. The guideline expert panel determines the reference standard or how to transform the data to a new standard.

The measure development process takes evidence-based recommendations and uses them to develop performance measurement sets. The AAN’s QSS and the TTA Subcommittees develop evidence-based practice parameters (guidelines). Both subcommittees form expert panels to critically assess all of the relevant ‘original source’ literature on a given topic or technology using a focused clinical question.

Evidence from the peer-reviewed literature is rated based on quality of study design and the level of inherent bias. Clinical practice recommendations are developed and stratified to reflect the quality and the content of the evidence. The QMR Subcommittee takes high level recommendations from both the QSS and TTA to develop performance measures. Sources of existing guidelines may also come from other organizations that are guideline developers. The review is not limited to AAN guidelines.

In summary, the AAN quality measures development process derives performance measures from the ‘evidence-base’ derived from clinical practice guidelines. Guideline development methodology varies widely across guideline developers (i.e., medical specialty societies). The PCPI promotes greater consistency in guideline development methodology and continues to facilitate the measures development process to evaluate the acceptability of guideline for measure development.

**Evidence-base Search Strategy**
A comprehensive search strategy to identify published guidelines, measures, and consensus recommendations from 5-10 years prior to current year is conducted using the National Guidelines Clearinghouse, the National Measures Clearinghouse, PubMed, MEDLINE, EMBASE, and the Cochrane Library. Internet searches are also carried out on relevant websites.

A medical librarian contracted by the AAN assists the staff and the QMR facilitator 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.). The AAN staff and QMR facilitator perform a quick review of the results to ensure that the measures, guidelines, and consensus papers thought to be pertinent to the search are identified. All results are compiled into an Endnote® library and sent to AAN staff for upload into the AAN measure database.

**Documenting the Literature Search**
The literature search is kept on file at the AAN. The following criteria are captured:

- Date searches were conducted
- Search terms/strategy used
- Databases searched
- Dates included in the search
- Explicit description of the criteria and terms used

Documenting this information ensures the methods presented in manuscripts are transparent and reproducible.

Evaluating the Evidence-base for Acceptability of Guideline

AAN staff review each selected full-text guideline or consensus paper against the PCPI framework for determining the acceptability of guidelines and other evidence review documents (herein, Evidence Checklist). If, the inclusion of an article based on eligibility criteria is unclear then co-chairs and facilitators are consulted. From eligible guidelines and consensus papers, the recommendation statements and their corresponding level of the evidence as defined by the guideline developers’ rating scheme methodology is extracted. Each ‘guideline’ or consensus paper ‘Evidence Checklist’ is catalogued and kept on file as evidence for inclusion of the recommendation statements as candidate measures.

Co-chair Selection

The AAN staff or the QMR facilitator contacts the recommended content experts to inquire about interest in serving as co-chairs for the panel. Once co-chairs are established, the staff, facilitator, and co-chairs review the material:

- Existing relevant practice guideline recommendations including levels of evidence
- Existing measures and indicators in the topic area
- A compilation of available analyses of gaps in care
- A compilation of available analyses of practice variability
- A compilation of available analyses of cost variability
- Expected purpose (for quality improvement versus accountability)
- Relevance for development of the topic based on the topic nomination criteria
- Expected level of measure (patient encounter, individual provider, or system)

The team also reviews:

- The preliminary list of organizations and approach to panel formation
- Summary of comprehensive topic guidelines and measure search results
- Recommendation for focused measures work
- Guideline/measures summary chart
- Sample AAN guideline with PCPI’s evidence-base summary checklist for evidenced based guidelines

Prior to the convening of the full panel and the face-to-face measure development meeting, the co-chairs, QMR facilitator, and AAN staff review the content of the items for the panel meeting and develop a list of narrowed candidate measures. Candidate recommendations are established,
reviewed, and ranked by the co-chairs and facilitators based on validity, feasibility, and gap in care. This results in winnowing out measures from a list of many to a select few, 8-12 candidate measures.

After ranking and winnowing the measures to a narrow few, measure statements are drafted with an experienced methodologist to include a full measure description, a numerator (how to perform the measure), a denominator (eligibility of the measure), and applicable exclusions (patients who are not appropriate for the measure) with examples for medical, patient, and/or system reasons.

The conference call agenda pre-face-to-face meeting reviews the following items:

- Context and parameters
- Candidate measures
- Organization of the face-to-face meeting
- Finalizing the panel charge
- Finalizing the panel work plan/timeline
- Finalizing the face-to-face meeting agenda
- Discussing other questions for discussion

**Construction and Writing of Candidate Measures**

Desirable attributes of physician level measures are that they address a gap in care, are evidence-based and linked to outcomes, actionable, feasible to collect, and have well-defined specifications. The specifications should include a definition of the desired action or outcome and the patient population to which it applies, which may include subpopulations that should be excluded.

Each measure statement has a numerator statement (specifications for meeting the measure) and a denominator statement (specifications for inclusion in the measure). The denominator specifies the target population and timeframe. Denominator exclusions include medical reasons, patient reasons, and system reasons. Documentation in the medical record links the exclusion to measured process and is required. Measure examples for exclusions are to avoid “acceptable” exclusion list.

Codes are developed for each measure to define the denominator population in terms of ICD-9CM and Evaluation and Management (E/M) codes. The documentation burden for physicians remains. The well designed measure statements allow for standardized reporting of measures.

**Panel Formation**

A “call” for members for the measures topic panel includes AAN appropriate sections, patient advocacy organizations, relevant physician associations, large group health employers, and insurer representatives. Panel members generally consist of 15-25 individuals because of the large number of vested stakeholders. Technical expertise is secured such as a methodologist experienced in construction of measure statements as well as coding experts. Panel members are sent a letter of interest and are asked to submit their curriculum vitae (CV) and statement of interest or experience with performance measures, quality improvement, and guideline.
development. The co-chairs use the CV and statement of interest to rank panel members. The AAN count of representatives is 5-9 members per panel and often more nominations are received than can serve on the panel. Once selected the QMR facilitator, topic nominator, co-chairs, and panel members complete a conflict of interest and copyright form.

**Conflicts of Interest**
Potential work group members are required to submit a disclosure form prior to performing any work on a measure topic and are required to review and update their disclosures on a yearly basis. The disclosure forms are reviewed by the co-chairs and the QMR facilitator. Upon approval, panel members are provided with a welcome letter outlining the expectations, timelines, tasks, activities, meeting dates, and conference call schedules.

**Copyright Form**
Panel members must complete a copyright form to ensure AAN has the full copyright and ownership of the measures. The AAN is responsible for maintaining and updating measures and, thus, needs to own full copyright for the measures.

**Refining Candidate Measures**
The panel meets in-person for a half day meeting. The meeting is critical in order to engage all panel members in an interactive discussion to review and edit the candidate performance measures, consider new measures (not identified by AAN staff or co-chairs), consider exclusions for each measure, and consider appropriate settings for each measure. Panelists are given the opportunity to revise measure statements or recommend that measures be dropped. Each measure statement is projected for all panel members to view and the revised wording is captured after consensus is reached.

**30-day Public Comment Period**
The final measures selected by the expert panel are posted on the AAN website for a 30-day public comment period. Measures are required to undergo a 30-day public comment period whereby interested individuals and stakeholders have an opportunity to comment and suggest changes to the measures. This requirement is needed in order to assure that the measures have been fully vetted and suitable edits are made to the measures.

The AAN leadership, key subcommittees, sections, and the membership as a whole are sent notification of the public comment period and encouraged to submit comments. All patient advocacy organizations, relevant physician associations, large group health employers, and insurer representatives are contacted and encouraged to engage their members in the public comment period. A critical step is to alert and request that the PMAG members review and respond to the measure statements during public comment. This latter step enables critical coding advice in structuring the final measures statements in preparation for technical specifications for implementation of the measures.
After the public comment period, the co-chairs and facilitators review each comment and consider rewording measures to improve clarity or modify content. All public comments receive a written response and remain a product of the measurement set.

**Technical Specifications of Measures**

Ownership and technical specifications are the responsibility of the measure developer. As a measures steward, the AAN operates under the PCPI’s national framework which promotes standardization of measures; applies a rigorous measure development process; recognizes measures developed ‘by physicians for physicians’ and others; and promotes a multi-disciplinary approach and engagement of stakeholders.

*Proposed use of measure*

The proposed use of a measure or indicator has a major effect on its specifications. If the intention is to measure outcomes for large numbers of patients, providers or encounters then, in general, the measures have to be specified in a way that they can be applied in a readily accessible database (such as administrative data). Because of the difficulty in applying inclusion and exclusion criteria in these data sets the results are only likely to be valid in large numbers of patients and not applicable to individual patients, providers or encounters. If the intention is the latter, then performance measures including detailed specifications of inclusions and exclusions are needed and implementation will likely involve retrospective chart review by trained reviewers or reporting on an encounter-by-encounter basis by the provider or their staff. Because of this trade off, it is important to specify at the outset how the measure is to be used.

*Defining the population of patients to which the performance measures applies*

For a performance measure to be valid, the target patient population must be specified in detail. 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, acuity of diagnosis, age ranges, and other positive selection factors. Exclusion criteria, such as drug sensitivities, complicating co-morbid conditions, patient preference and other factors that would not allow the indicator to be applied must also be specified.

For each measure, a description and instructions are provided for how the measure is intended to be captured and reported. Additionally, each measure has a numerator and a denominator. Exclusions from the numerator or denominator include patient reasons, medical reasons, and system reasons. For each measure, examples must be given to apply exclusions. Each measure also has clinical recommendation statements that are quoted verbatim from the referenced clinical guidelines and represent the evidence base for the measure. A rationale for each measure is also provided. ICD-9CM and E/M codes drive the denominator description. CPT II codes are created for the numerator description. CPT II codes are copyrighted by the AMA and AAN submits requests for new CPT II codes to the PMAG.

©American Academy of Neurology. All rights reserved.

Assignment of Coding

The AMA PMAG creates CPT codes for performance measures called CPT-II codes. The CPT-II codes are used in administrative claims data to record participation in the measures. The PMAG makes comments on the measures during the public comment period and then holds a half day meeting for PMAG members to discuss any edits to the measures. The PMAG comments are administrative data collection and feasibility questions, questions regarding the exclusion(s) for each measure, clarifications to grammatical issues, and measure standardization questions. Once the PMAG approves the measures, the PMAG assigns CPT-II codes for each measure in the measurement set. Once the measure steward (the AAN) and the CPT Editorial board have given approval of the codes, the measures and corresponding CPT codes are posted on the AMA website and in the CPT Editorial Book.

Approval

After the panel members have completed and approved the revision to the measurement set and approved responses to all the comments; the measurement set is submitted to the QMR. The QMR reviews the measurement set, the comments, the response to those comments, and the changes to the measurement set. Once approved by QMR, the measurement set goes through the following governance bodies for approval: Practice Committee and the AAN Board of Directors. Upon approval of the measurement set, it becomes official.

The goal for most measure sets developed by this process is for them to become the measures used to evaluate neurological care in individual clinical performance improvement programs and government and payer quality improvement programs. Because the PCPI is the entry into the national vetting process for measures for medical and surgical physician specialties, all AAN measure sets are developed using the PCPI compatible processes with every effort to submit to the PCPI for review by their membership.

Manuscript and Dissemination of Quality Measures

The level of dissemination of performance measures is a medium plus level. Partnerships are involved in the development of the measures and these continue through dissemination. The QMR works closely with the Practice Improvement Subcommittee (PI) to develop and disseminate appropriate tools. A dissemination plan is drafted with the support of AAN’s marketing department.

A manuscript is prepared for submission to Neurology®. The co-chairs of the panel, facilitator and AAN staff form the basis of the manuscript writing group. All papers submitted to Neurology® undergo a separate peer review done following the journal’s customary review process. Neurology® selects topic experts and a general neurologist to critically review the paper. It is expected that the measure authors and the Neurology® reviewers exchange comments to improve the paper. Once all reviewers are satisfied, Neurology® acceptance is anticipated.

The responses to all the comments are posted on the AAN website with the full measurement set after publication of the measures in Neurology®. Publication precedes posting of the codes in
PMAG’s process as well. Once the measure steward (the AAN) gives the approval of the codes, the measures and corresponding CPT codes for publication release, the measures are posted on the AMA website and in the CPT Editorial Book.

**Periodic Review and Updating**

Each measure set will be reviewed annually for currency and either certified for continued use or retired. In the latter case, the QMR Subcommittee determines the priority of revisions. Priority is determined using the criteria for initial evaluation. Every three years the measurement set undergoes a full search for new evidence.
References


