



Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to subcriterion 1b).

Brief Measure Information

NQF #: 0542

Corresponding Measures:

De.2. Measure Title: Adherence to Chronic Medications

Co.1.1. Measure Steward: Centers for Medicare & Medicaid Services

De.3. Brief Description of Measure: The measure addresses adherence to three types of chronic medications: statins, levothyroxine, and angiotensin converting enzyme inhibitors (ACEIs)/angiotensin receptor blockers (ARBs). The measure is divided into three submeasures:

Measure A: The percentage of eligible individuals who had at least two prescriptions for statins and who have a Proportion of Days Covered (PDC) of at least 0.8 during the measurement period (12 consecutive months).

Measure B: The percentage of eligible individuals who had at least two prescriptions for levothyroxine and who have a PDC of at least 0.8 during the measurement period (12 consecutive months).

Measure C: The percentage of eligible individuals who had at least two prescriptions for ACEIs/ARBs and who have a PDC of at least 0.8 during the measurement period (12 consecutive months).

1b.1. Developer Rationale:

S.4. Numerator Statement: Numerator A: Individuals with at least two prescriptions for statins having a PDC of at least 0.8.

Numerator B: Individuals with at least two prescriptions for levothyroxine having a PDC of at least 0.8.

Numerator C: Individuals with at least two prescriptions for ACEIs/ARBs having a PDC of at least 0.8.

S.7. Denominator Statement: Denominator A: Individuals with at least two prescriptions for statins.

Denominator B: Individuals with at least two prescriptions for levothyroxine.

Denominator C: Individuals with at least two prescriptions for ACEIs/ARBs.

S.10. Denominator Exclusions: Not Applicable

De.1. Measure Type: Process

S.23. Data Source: Electronic administrative data/claims, Pharmacy data

S.26. Level of Analysis:

IF Endorsement Maintenance – Original Endorsement Date: Aug 05, 2009 **Most Recent Endorsement Date:** Aug 05, 2009

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results?

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all subcriteria to pass this criterion and be evaluated against the remaining criteria.**

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

[0542_Evidence_MSF5.0_Data.doc](#)

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- disparities in care across population groups.

1b.1. Briefly explain the rationale for this measure (e.g., the benefits or improvements in quality envisioned by use of this measure)

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. (This is required for endorsement maintenance. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included). This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (This is required for endorsement maintenance. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations.

1c. High Priority (previously referred to as High Impact)

The measure addresses:

- a specific national health goal/priority identified by DHHS or the National Priorities Partnership convened by NQF; OR
- a demonstrated high-priority (high-impact) aspect of healthcare (e.g., affects large numbers of patients and/or has a substantial impact for a smaller population; leading cause of morbidity/mortality; high resource use (current and/or future); severity of illness; and severity of patient/societal consequences of poor quality).

1c.1. Demonstrated high priority aspect of healthcare

1c.2. If Other:

1c.3. Provide epidemiologic or resource use data that demonstrates the measure addresses a high priority aspect of healthcare. List citations in 1c.4.

1c.4. Citations for data demonstrating high priority provided in 1a.3

1c.5. If a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the subcriteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. Subject/Topic Area (check all the areas that apply):

De.6. Non-Condition Specific (check all the areas that apply):

Safety, Safety : Medication

S.1. Measure-specific Web Page (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

S.2a. If this is an eMeasure, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

This is an eMeasure Attachment: [NQF542_-_Codes_Table.xls](#)

S.2b. Data Dictionary, Code Table, or Value Sets (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

Attachment:

S.3. For endorsement maintenance, please briefly describe any changes to the measure specifications since last endorsement date and explain the reasons.

S.4. Numerator Statement (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome)
IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

Numerator A: Individuals with at least two prescriptions for statins having a PDC of at least 0.8.

Numerator B: Individuals with at least two prescriptions for levothyroxine having a PDC of at least 0.8.

Numerator C: Individuals with at least two prescriptions for ACEIs/ARBs having a PDC of at least 0.8.

S.5. Time Period for Data (What is the time period in which data will be aggregated for the measure, e.g., 12 mo, 3 years, look back to August for flu vaccination? Note if there are different time periods for the numerator and denominator.)

Numerator time window: Any time during the measurement period.

S.6. Numerator Details (All information required to identify and calculate the cases from the target population with the target

process, condition, event, or outcome such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)
IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

The numerator is defined as individuals with a PDC of 0.8 or greater

The PDC is calculated as follows:

PDC Numerator for Each Individual in Each Drug Class:

The PDC numerator is the sum of the days covered by the days' supply of all drug claims for the specific drug class (statins, levothyroxine, or ACEI/ARBs). The period covered by the PDC starts on the day the first prescription is filled (index date) and lasts through the end of the measurement period, or death, whichever comes first. For prescriptions with a days' supply that extends beyond the end of the measurement period, count only the days for which the drug was available to the individual during the measurement period. If there are prescriptions for the same drug (generic name) on the same date of service, keep the prescription with the largest days' supply. If prescriptions for the same drug (generic name) overlap, then adjust the prescription start date to be the day after the previous fill has ended.

PDC Denominator:

The PDC denominator is the number of days from the first prescription date through the end of the measurement period, or death date, whichever comes first

Optional Calculation Using More Than One Year of Data:

Optional PDC Numerator:

- For new users (individuals with no prescriptions for drugs in the respective drug class during the 180 days prior to the measurement period), the PDC numerator is the sum of the days covered by the days' supply of the prescriptions in the respective drug class (statins, levothyroxine, or ACEIs/ARBs) during the measurement period. The period covered by the PDC for new users starts on the day the first prescription is filled (index date) and lasts through the end of the measurement period, or death, whichever comes first. For prescriptions with a days' supply that extends beyond the end of the measurement period, count only the days for which the drug was available to the individual during the measurement period. If prescriptions for the same drug (generic name) overlap, then adjust the prescription start date to be the day after the previous fill has ended.
- For continuous users (individuals with 1 or more prescriptions for drugs in the respective drug class during the 180 days prior to the measurement period), the PDC numerator is the sum of the days covered by the days' supply of the prescriptions in the respective drug class (statins, levothyroxine, or ACEIs/ARBs) during the measurement period. The period covered by the PDC for continuous users is the number of days from the beginning of the measurement period through the end of the measurement period, or death, whichever comes first. For prescriptions with a days' supply that extends beyond the beginning or end of the measurement period, count only the days for which the drug was available to the individual during the measurement period. If prescriptions for the same drug (generic name) overlap, then adjust the prescription start date to the day after the previous fill has ended.

Optional PDC Denominator:

- For new users, the PDC denominator is the number of days that starts on the day the first prescription is filled (index date) and lasts through the end of the measurement period, or death, whichever comes first.
- For continuous users, the PDC denominator is the number of days from the beginning of the measurement period through the end of the measurement period, or death, whichever comes first.

Optional Calculation Adjusting for Hospitalizations (one year of data):

- If the individual is hospitalized between the index date and end date, each inpatient visit is treated as a prescription and as days covered for each drug class that the individual was prescribed before the hospitalization. The admit date becomes the prescription service date and the number of inpatient days becomes the days' supply.

Optional Calculation Adjusting for Hospitalizations (more than one year of data):

- If the individual is hospitalized between the index date and end date, each inpatient visit is treated as a prescription and as

days covered for each drug class that the individual was prescribed before the hospitalization. The admit date becomes the prescription service date, and the number of inpatient days becomes the days' supply.

S.7. Denominator Statement *(Brief, narrative description of the target population being measured)*

Denominator A: Individuals with at least two prescriptions for statins.

Denominator B: Individuals with at least two prescriptions for levothyroxine.

Denominator C: Individuals with at least two prescriptions for ACEIs/ARBs.

S.8. Target Population Category *(Check all the populations for which the measure is specified and tested if any):*

Elderly

S.9. Denominator Details *(All information required to identify and calculate the target population/denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*

For each drug class, identify individuals with at least two claims for any active ingredient in the drug class. There will be separate denominators, one for each drug class.

The following are the statin medications by Class for the denominator. The route of administration includes oral formulations of the medications listed below.

STATIN MEDICATIONS:

HMG-COA reductase inhibitors (statins):

atorvastatin
fluvastatin
lovastatin
pravastatin
rosuvastatin
simvastatin
pitavastatin

HMG-COA reductase inhibitor (statins) combinations:

amlodipine-atorvastatin
ezetimibe-simvastatin
niacin-lovastatin
niacin-simvastatin
sitagliptin-simvastatin

The following is the thyroid hormone medication for the denominator. The route of administration includes oral formulations of the medication listed below.

THYROID HORMONE MEDICATION:

Thyroid Hormone:

levothyroxine

The following are the ACEI/ARB medications by class for the denominator. The route of administration includes oral formulations of the medications listed below.

ACEI/ARB MEDICATIONS:

Angiotensin-converting enzyme inhibitors (ACEIs):

benazepril
captopril
enalapril
fosinopril
lisinopril
moexipril
perindopril
quinapril
ramipril
trandolapril

Angiotensin II receptor blockers (ARBs):

candesartan
eprosartan
irbesartan
losartan
olmesartan
telmisartan
valsartan
azilsartan

Antihypertensive combinations:

aliskiren-valsartan
amlodipine-benazepril
amlodipine-olmesartan
amlodipine -valsartan
amlodipine-valsartan-hydrochlorothiazide
benazepril-hydrochlorothiazide
candesartan-hydrochlorothiazide
captopril-hydrochlorothiazide
enalapril maleate-hydrochlorothiazide
enalapril-felodipine
eprosartan-hydrochlorothiazide
fosinopril-hydrochlorothiazide
irbesartan-hydrochlorothiazide
lisinopril- hydrochlorothiazide
lisinopril-dietary management product
losartan-hydrochlorothiazide
moexipril-hydrochlorothiazide
olmesartan-hydrochlorothiazide
olmesartan medoxomil-amlodipine-hydrochlorothiazide
quinapril-hydrochlorothiazide
telmisartan-amlodipine
telmisartan-hydrochlorothiazide
trandolapril-verapamil
valsartan-hydrochlorothiazide
amlodipine-olmesartan-hydrochlorothiazide
azilsartan medoxomil-chlorthalidone

S.10. Denominator Exclusions *(Brief narrative description of exclusions from the target population)*

Not Applicable

S.11. Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*

Not Applicable

S.12. Stratification Details/Variables (All information required to stratify the measure results including the stratification variables, definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b)

S.13. Risk Adjustment Type (Select type. Provide specifications for risk stratification in S.12 and for statistical model in S.14-15)

No risk adjustment or risk stratification

If other:

S.14. Identify the statistical risk model method and variables (Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development and testing should be addressed with measure testing under Scientific Acceptability)

Not Applicable

S.15. Detailed risk model specifications (must be in attached data dictionary/code list Excel or csv file. Also indicate if available at measure-specific URL identified in S.1.)

Note: Risk model details (including coefficients, equations, codes with descriptors, definitions), should be provided on a separate worksheet in the suggested format in the Excel or csv file with data dictionary/code lists at S.2b.

S.15a. Detailed risk model specifications (if not provided in excel or csv file at S.2b)

S.16. Type of score:

If other:

S.17. Interpretation of Score (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)

S.18. Calculation Algorithm/Measure Logic (Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.)

S.19. Calculation Algorithm/Measure Logic Diagram URL or Attachment (You also may provide a diagram of the Calculation Algorithm/Measure Logic described above at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

S.20. Sampling (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

IF a PRO-PM, identify whether (and how) proxy responses are allowed.

S.21. Survey/Patient-reported data (If measure is based on a survey, provide instructions for conducting the survey and guidance on minimum response rate.)

IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.

S.22. Missing data (specify how missing data are handled, e.g., imputation, delete case.)

Required for Composites and PRO-PMs.

S.23. Data Source (Check *ONLY* the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.24.

[Electronic administrative data/claims](#), [Pharmacy data](#)

S.24. Data Source or Collection Instrument (Identify the specific data source/data collection instrument e.g. name of database, clinical registry, collection instrument, etc.)

IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.

S.25. Data Source or Collection Instrument (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

S.26. Level of Analysis (Check *ONLY* the levels of analysis for which the measure is SPECIFIED AND TESTED)

S.27. Care Setting (Check *ONLY* the settings for which the measure is SPECIFIED AND TESTED)

[Ambulatory Care : Clinic](#), [Other](#)

If other:

S.28. COMPOSITE Performance Measure - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

2a. Reliability – See attached Measure Testing Submission Form

2b. Validity – See attached Measure Testing Submission Form

[0542_MeasureTesting_MSF5.0_Data.doc](#)

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. Data Elements Generated as Byproduct of Care Processes.

If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. To what extent are the specified data elements available electronically in defined fields? (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields)

3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.

3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL.

Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.

IF a PRO-PM, consider implications for both individuals providing PROM data (patients, service recipients, respondents) and those whose performance is being measured.

3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Planned	Current Use (for current use provide URL)
Public Reporting	
Quality Improvement (Internal to the specific organization)	

4a.1. For each CURRENT use, checked above, provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included

4a.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

4a.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

4b. Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b.1. Progress on Improvement. (Not required for initial endorsement unless available.)

Performance results on this measure (current and over time) should be provided in 1b.2 and 1b.4. Discuss:

- Progress (trends in performance results, number and percentage of people receiving high-quality healthcare)
- Geographic area and number and percentage of accountable entities and patients included

4b.2. If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4c. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4c.1. Were any unintended negative consequences to individuals or populations identified during testing; OR has evidence of unintended negative consequences to individuals or populations been reported since implementation? If so, identify the negative unintended consequences and describe how benefits outweigh them or actions taken to mitigate them.

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

5.1a. List of related or competing measures (selected from NQF-endorsed measures)

5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

5a. Harmonization

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications completely harmonized?

5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on

interpretability and data collection burden.
5b. Competing Measures The measure is superior to competing measures (e.g., is a more valid or efficient way to measure); OR Multiple measures are justified. 5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s): Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

Appendix
A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed. Attachment:
Contact Information
Co.1 Measure Steward (Intellectual Property Owner): Centers for Medicare & Medicaid Services Co.2 Point of Contact: Corette, Byrd , corette.byrd@cms.hhs.gov , 410-786-8532- Co.3 Measure Developer if different from Measure Steward: Centers for Medicare & Medicaid Services Co.4 Point of Contact: Elizabeth, Ricksecker , Elizabeth.Ricksecker@cms.hhs.gov , 410-786-6723-
Additional Information
Ad.1 Workgroup/Expert Panel involved in measure development Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
Measure Developer/Steward Updates and Ongoing Maintenance Ad.2 Year the measure was first released: Ad.3 Month and Year of most recent revision: Ad.4 What is your frequency for review/update of this measure? Ad.5 When is the next scheduled review/update for this measure?
Ad.6 Copyright statement: Ad.7 Disclaimers:
Ad.8 Additional Information/Comments: