NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0076 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Optimal Vascular Care
De.2 **Brief description of measure**: Percentage of adult patients ages 18 to 75 who have ischemic vascular disease with optimally managed modifiable risk factors (LDL, blood pressure, tobacco-free status, daily aspirin use).
1.1-2 **Type of Measure:** Outcome De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** This is a composite "all or none" measure calculated at the patient level. Each individual patient needs to meet all four component targets to be considered to be numerator compliant. All components are contained within this measure and the measure is not paired with another measure. Please note that while the all-or-none composite measure is considered to be the gold standard, reflecting best patient outcomes, the individual components may be measured as well. This is particularly helpful in quality improvement efforts to better understand where opportunities exist in moving the patients toward achieving all of the desired outcomes. Please refer to the additional numerator logic provided for each component.
De.4 **National Priority Partners Priority Area:** Patient and family engagement De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes	**A** **Y**☐ **N**☐

A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:** NQF Signed Steward Agreement_2010-634242029046564828.pdf	
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Payment Program	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**) Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, Severity of illness 1a.2 1a.3 **Summary of Evidence of High Impact:** According to the MN Department of Health, vascular disease is a high impact clinical condition in Minnesota. More than 20% of all deaths in Minnesota are due to heart disease and more than 6% are due to stroke, making them the second and third leading causes of death, respectively, in the state behind cancer. Inpatient hospitalization charges alone in Minnesota were more than $1.85 billion for heart disease patients and $362 million for stroke patients in 2008. Risk factors reported by Minnesotans include 34% high blood cholesterol, 22% high blood pressure, 16.7% cigarette smoke, 6.7% diabetes, 62% overweight, and 16% physical inactivity. 1a.4 **Citations for Evidence of High Impact:** Minnesota Department of Health 2010 Fact Sheets on Heart Disease and Stroke in Minnesota; http://www.health.state.mn.us/divs/hpcd/chp/cvh/Data.htm	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement	**1b** C☐

Comment [KP1]: 1a. The measure focus addresses:
•a specific national health goal/priority identified by NQF's National Priorities Partners; OR
•a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

1b.1 Benefits (improvements in quality) envisioned by use of this measure: The intermediate physiological and biochemical outcomes included in this composite measure are modifiable lifestyle risk factors that can ultimately decrease the incidence of long term catastrophic events and chronic illness associated with cardiovascular disease.

P☐ M☐ N☐

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
For 2010 (2009 dates of service), 33.8% of the patients met all four component targets in the composite measure and were considered optimally managed. This rate is a weighted average of the total population of patients for clinics submitting data (Total Population = 95,751, Submitted = 63,241). 79% of the clinics submitted full population data, the remaining clinics provided a random sample. Of the clinics that were reportable (patient n >= 30), there was a wide range of variability with the lowest scoring clinic at 1.7% and the highest scoring clinic at 68.3%.

The trends for this measure have remained relatively unchanged:
2008 (2007 dates of service) = 33%
2000 (2008 dates of service) = 34%
2010 (2009 dates of service) = 34%

Percentage of Clinics within each Optimal Rate Range (reportable clinics)
0%-9.9% 4.4%
10%-19.9% 14.3%
20%-29.9% 21.9%
30%-39.9% 28.2%
40%-49.9% 22.2%
50%-59.9% 7.9%
60%-69.9% 1.2%

Individual rates of the components are as follows:
LDL <100 = 64%
Blood Pressure <130/80 = 58% *
Daily Aspirin Use = 92%
Tobacco Non-user = 81%
Please note that while the all-or-none composite measure is considered to be the gold standard, reflecting best patient outcomes, the individual components may be measured as well. This is particularly helpful in quality improvement efforts to better understand where opportunities exist in moving the patients toward achieving all of the desired outcomes. Please refer to the additional numerator logic provided for each component.

* Note for Blood Pressure: Historically and in currently reported data, the target was <130/80 for all IVD patients. For 2011 reporting (2010 dates of service) the target will be modified to <140/90 for IVD patients with a co-morbidity of diabetes and <130/80 for all other IVD patients. For 2012 reporting (2011 dates of service) the target will be < 140/90 for all patients with IVD.

Mean: 32.4%
Median: 33.3%
Standard Deviation: 0.13063 (13.1%)
Min: 1.7%
Max: 68.3%
(reflects reportable clinics, patient n >= 30)

Publicly reported data with clinic level rates is available on the MN HealthScores website www.mnhealthscores.org. Additionally, for more detailed information including highlights of top performers, breakdown by clinic site with confidence intervals please refer to our Health Care Quality Report posted on our corporate website at: www.mncm.org/site/?page=our_work&view=2

1b.3 Citations for data on performance gap:
In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data:

Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2,700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

1b.4 Summary of Data on disparities by population group:
The ischemic vascular disease population is not currently stratified when publicly reported by population group. MN Community Measurement plans to report statewide optimal vascular rates on Minnesota Health Care Program patients in our 2010 Health Care Disparities Report. MNCM does collect the following fields that will allow for future stratification:
Insurance coverage code (used to determine public and private purchasers): from list of MNCM-designated codes
Patient's health plan member ID (used to determine public and private purchasers): unique patient health plan member ID
Date of birth: (MM/DD/YYYY)
Race/ethnicity: from list of MNCM-designated codes
Primary language: from list of MNCM-designated codes
Country of origin: from list of MNCM-designated codes
Zip code: 5-digit zip code of patient
Gender: M (male), F (female), U (unknown)
Co-morbidity of diabetes: 1 (yes), 2 (no)
Co-morbidity of depression: 1 (yes), 2 (no)

In 2010 (2009 dates of service), the proportion of medical groups that submitted Race/Ethnicity, Language and Country of Origin data to MNCM was as follows: 17% of medical groups submitted 100% REL data, 46% submitted partial REL data, 65% submitted no REL data.

1b.5 Citations for data on Disparities:
In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the

patient's medical record.

Characteristics of the entities reporting data:

Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2,700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

1c. Outcome or Evidence to Support Measure Focus

1c.1 **Relationship to Outcomes** (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** The intermediate physiological and biochemical outcomes included in this composite measure are modifiable lifestyle risk factors that can ultimately decrease the incidence of long term catastrophic events and chronic illness associated with ischemic vascular disease.

1c.2-3. **Type of Evidence:** Evidence-based guideline, Randomized controlled trial, Meta-analysis, Other Consensus Statement

1c.4 **Summary of Evidence** (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Evidence based guidelines fully support this measure, please see detail following.

1c.5 **Rating of strength/quality of evidence (***also provide narrative description of the rating and by whom***):**
ICSI Evidence Grading System www.icsi.org/guidelines_and_more/evidence_grading_system_6/. Please see section below for the narrative rating of strength/quality of evidence.

1c.6 **Method for rating evidence:** ICSI Evidence Grading System
A. Primary Reports of New Data Collection:
Class A: Randomized, controlled trial
Class B: Cohort study
Class C: Non-randomized trial with concurrent or historical controls Case-control study Study of sensitivity and specificity of a diagnostic test Population-based descriptive study
Class D: Cross-sectional study Case series Case report
B. Reports that Synthesize or Reflect Upon Collections of Primary Reports:
Class M: Meta-analysis Systematic review Decision analysis Cost-effectiveness analysis
Class R: Consensus statement, consensus report narrative review
Class X: Medical opinion
Citations are listed in the guideline utilizing the format of (Author, YYYY [report class]).
A full explanation of ICSI´s Evidence Grading System can be found at
http://www.icsi.org/evidence_grading_system_6/evidence_grading_system__pdf_.htm

1c.7 **Summary of Controversy/Contradictory Evidence:** Currently there is no controversial or contradictory evidence related to the composite outcome measure or any of its components.

1c.8 **Citations for Evidence (***other than guidelines***):** Please see citations within guideline quotes.

1c.9 **Quote the Specific guideline recommendation (***including guideline number and/or page number***):**
ICSI Stable Coronary Artery Disease April 2011
Address Modifiable Risk Factors and Comorbid Conditions:
Comorbid conditions that could affect myocardial ischemia may include hypertension, anemia, thyroid

1c
C☐
P☐
M☐
N☐

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess – evidence that an association exists between access to a health service and the outcomes of, or experience with, care. ... [1]

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

disease, hypoxemia and others. Modifiable risk factors for coronary heart disease need to be evaluated and may include smoking, inadequate physical activity, stress, hyperlipidemia, obesity, hypertension and diabetes mellitus.
Intervention involving any risk factor pertinent to the patient is encouraged and may include education, goal setting, and follow-up as necessary (Rutherford, 1992 [R]; Shub, 1990 [R]).
Hyperlipidemia:
A fasting lipid profile should be evaluated for appropriate patients with stable coronary artery disease. Secondary prevention is important in these patients, who should be treated aggressively for hyperlipidemia. Many patients will require both pharmacologic and non-pharmacologic interventions to reach target goals.
Target goals for hyperlipidemic patients with coronary artery disease include:
LDL – less than 100 mg/dL
HDL – 40 mg/dL or greater
Triglycerides – less than 150 mg/dL
(ALLHAT, 2002 [A]; Cannon, 2004 [A]; Downs, 1998 [A]; Heart Protection Study Collaborative Group, 2002 [A]; LaRosa, 1999 [M]; Lipid Research Clinics Program, 1984 [A]; Nissen, 2004 [A]; Pignone, 2000 [M]; Sever, 2003 [A]; Shepherd, 2002 [A]; Shepherd,1995 [A]; Topol, 2004 [R]; Goldberg, 1998 [A]; LIPID Study Group, 1998 [A]; Scandinavian Simvastatin Survival Study Group, 1994) [A].
Please also refer to the ICSI Lipid Management in Adults Guideline
Hypertension and Cardiovascular Disease:
Stable Coronary Artery Disease, ICSI Guideline (April 2011);
General health measures include the treatment of hypertension, which is not only a risk factor for development and progression of atherosclerosis, but also causes cardiac hypertrophy, augments myocardial oxygen requirements, and thereby intensifies myocardial ischemia in patients with obstructive coronary disease.
Please refer to the ICSI Hypertension Diagnosis and Treatment guideline for recommendations regarding blood pressure management. The recommended target blood pressure is 140/90 mmHg or less. Based on current evidence, pursuing blood pressure goals lower than < 140/90 should be considered on an individual patient basis based on clinical judgment and patient preference (ACCORD Study Group, 2010 [A], Cooper-DeHoff, 2010 [M]). Please see ICSI Hypertension Diagnosis and Treatment guideline for more information.
Hypertension Diagnosis and Treatment, ICSI Guideline (November 2010);
A reappraisal of evidence from randomized trials in patients with chronic heart disease or previous stroke does not show consistent evidence that cardiovascular disease risk is further reduced by more intensive lowering of blood pressure (Zanchetti, 2009 [R]). This evidence is not definitive, i.e., limitations include few trials designed to evaluate specific blood pressure goals, small differences in achieved blood pressure in many trials, and the use of active agents and corresponding placebo on top of multiple antihypertensive and other cardiovascular therapies. American Heart Association/American College of Cardiology guidelines published in 2007 called for goal office blood pressures less than 130/80 mmHg in patients with coronary disease, carotid disease, peripheral artery disease, abdominal aortic aneurysm, or a 10-year Framingham risk score of > 10% (Rosendorff, 2007 [R]). These recommendations are based on expert opinion and limited clinical evidence. A subgroup analysis of 6,400 participants of the International Verapamil SR-Trandolapril Study (INVEST) who had diabetes and coronary artery disease assessed the relationship between the degree of blood pressure control and adverse cardiovascular outcomes (Cooper-DeHoff, 2010 [M]). Tight control defined as systolic blood pressure to < 130 mmHg was not associated with fewer adverse cardiovascular outcomes compared to usual control (< 140-130 mmHg). Based on current evidence, pursuing blood pressure goals lower than < 140/90 should be considered on an individual patient basis based on clinical judgment and patient preference.
Please also refer to ICSI Hypertension Diagnosis and Treatment Guideline
Tobacco Use:
Cigarette smoking may cause an acute cardiac ischemic event and may interfere with the efficacy of medications to relieve angina. Please also refer to the ICSI Preventive Services for Adults Guideline
Antiplatelet Therapy:
The use of one aspirin tablet daily (81-162 mg) is strongly recommended unless there are medical contraindications (Antiplatelet Trialists´ Collaboration, 1994 [A]; CAPRI, 1996 [A]; Fuster, 1993 [R]; Juul-Möller, 1992 [A]; Kurth, 2003 [A]; Ridker, 1991 [A]).The Antithrombotic Trialists´ Collaboration is a meta-analysis that analyzed 287 studies involving 135,000 patients for different aspects of antiplatelet therapy. When comparing the 500-1,500 mg versus 160-325 mg versus 75-150 mg daily regimens of aspirin in multiple trials, there was a trend of reduction in vascular events with decreased dose (odds reduction: 19% versus 26% versus 32%, respectively) (Antithrombotic Trialists Collaboration; 2002 [M]). Although the meta-analysis concludes that risk of gastrointestinal bleed was similar among doses 325 mg or less, other studies such as the CURE study

showed increased bleeding risk with increasing the dose, without any increase in efficacy (Peters, 2003 [A]). The authors conclude that aspirin dose in the range of 75-150 mg should be given for the long-term prevention of serious vascular events in high risk patients, and that there may be a reduced benefit when increasing the dose over 150 mg daily. Doses available to most clinicians are in increments of 81 mg; therefore, the recommended dose range is 81-162 mg daily.

1c.10 Clinical Practice Guideline Citation: Institute for Clinical Systems Improvement (ICSI)
ICSI Stable Coronary Artery Disease April 2011
http://www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/coronary_artery_disease/coronary_artery_disease__stable__3.html
ICSI Lipid Management in Adults October 2009
http://www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/lipid_management_3/lipid_management_in_adults__4.html
ICSI Hypertension Diagnosis and Treatment November 2010
http://www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/hypertension_4/hypertension_diagnosis_and_treatment__11.html
ICSI Preventive Services for Adults September 2010
http://www.icsi.org/guidelines_and_more/gl_os_prot/preventive_health_maintenance/preventive_services_for_adults/preventive_services_for_adults__11.html
1c.11 National Guideline Clearinghouse or other URL: Please note that all of the ICSI guidelines referenced are also listed in the National Guideline Clearinghouse: http://www.guideline.gov/browse/by-topic.aspx

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom***):**
Management of lipid levels: Patients with risk factors for coronary heart disease but no history of disease who receive lipid-lowering therapy are likely to experience a decreased risk of coronary heart disease. Conclusion Grade I [ICSI Lipid Management in October 2009 page 11]

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**
ICSI´s Conclusion Grade definitions parallel with USPSTF ratings of High, Moderate & Low.
CONCLUSION GRADES
Key conclusions (as determined by the work group) are supported by a conclusion grading worksheet that summarizes the important studies pertaining to the conclusion.
Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.
Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.
Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results from different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.
Grade Not Assignable: There is no evidence available that directly supports or refutes the conclusion.

1c.14 Rationale for using this guideline over others:
The Institute for Clinical Improvement (ICSI) is a unique organization that is widely respected for its collaborative efforts with guideline development. ICSI´s purpose is to help improve patient care in Minnesota through collaboration and innovations in evidence-based medicine. The collaborative is unique in that it brings medical organizations, health plans and business representatives into the decision-making process. Providers in MN are engaged and respect this process and the resulting guideline recommendations.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?* **1**

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, **met?** **Rationale:**	**1** **Y☐** **N☐**
2. 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. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Patients ages 18 to 75 with ischemic vascular disease (IVD) who meet all of the following targets from the most recent visit during the measurement period: LDL less than 100, Blood Pressure less than 140/90, Tobacco-Free Status, Daily Aspirin Use (unless contraindicated). Please note: On 7/27/2010, the blood pressure component of this measure was changed for patients with a co-morbidity of diabetes (target less than 140/90). MNCM's technical advisory group recommended this changed based on ACCORD results, ICSI's most recent guideline changes (July 2010), and the national meaningful use measures for diabetes blood pressure control. A target of less than 140/90 allows for individualization of patient goals. On March 9 2011, the measurement and reporting committee reviewed recent ICSI guideline changes for blood pressure targets for stable coronary artery disease and hypertension and additionally considered the request of the NQF cardiovascular committee and decided to change the blood pressure target to < 140/90 for all IVD patients. Values are collected as the most recent during the measurement period (January 1 through December 31), with the exception of the LDL value which is collected over a 15 month time span to allow a greater window of time for patients that may not complete a cholesterol test within the 12 month time frame, but do complete a cholesterol test within 15 months (October 1 of the previous year through December 31 of the measurement year). **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** Values are collected as the most recent during the measurement period (January 1 through December 31), with the exception of the LDL value which is collected over a 15 month time span to allow a greater window of time for patients that may not complete a cholesterol test within the 12 month time frame, but do complete a cholesterol test within 15 months (October 1 of the previous year through December 31 of the measurement year). **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Numerator for the LDL Component: LDL Date [Date (mm/dd/yyyy)] AND LDL Value [Numeric] Numerator calculation: numerator compliant is LDL during the last 15 months AND LDL value is less than 100. Enter the date of the most recent LDL test prior to and including 12/31/YYYY (measurement period). Enter the value of the most recent LDL test prior to and including 12/31/ YYYY (measurement period). Numerator for the Blood Pressure Component: Blood Pressure Date [Date (mm/dd/yyyy)] AND BP Systolic [Numeric] AND BP Diastolic [Numeric] Numerator calculation: numerator compliant is BP during the measurement period AND the following targets: Systolic <140 AND Diastolic <90.	**2a-specs** **C☐** **P☐** **M☐** **N☐**

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

Enter the date of the most recent Blood Pressure (BP) test prior to and including 12/31/YYYY (measurement period).

Numerator for the Tobacco Component:
Tobacco Status Documentation Date [Date (mm/dd/yyyy)] AND
Tobacco Status [Numeric]
1 = Tobacco Free (patient does not use tobacco) 2 = No Documentation 3 = Current Tobacco User
Numerator calculation: Numerator compliant is Value 1 = Tobacco Free AND valid date
Enter the most recent date (prior to and including 12/31/YYYY (measurement period) that the patient's tobacco status was documented.

Numerator for the Aspirin Component:
Aspirin Use or Documented Contraindication for the use of aspirin.
Aspirin (ASA) Date [Date (mm/dd/yyyy)]
Enter the most recent date of documented ASA or anti-platelet prior to and including 12/31/YYYY (measurement period).
FYI: any documented date in the measurement period of ASA or an anti-platelet is acceptable; the date does not need to be the most recent.
The following are accepted ASA or anti-platelet medications
• Aspirin (ASA)
• Plavix (clopidogrel)
• Ticlid (ticlopidine)
• Pravigard (aspirin/pravastatin)
• Aggrenox (aspirin/dypyridamole)
• Low dose enteric-coated 81 mg ASA (Ecotrin or Bayer)
OR
Aspirin (ASA) Contraindication Date [Date (mm/dd/yyyy)]
If patient has a documented contraindication to ASA, enter the date of the contraindication. Any valid contraindication date will be given credit. Auditor must be able to validate this date.
Accepted contraindications:
• Anticoagulant use, Lovenox (Enoxaparin) or Coumadin (Warfarin)
• Any history of gastrointestinal (GI)* or intracranial bleed (ICB)
• Allergy to ASA
*Gastroesophogeal reflux disease (GERD) is not automatically considered a contraindication but may be included if specifically documented as a contraindication by the physician.
The following may be exclusions if specifically documented by the physician:
• Use of non-steroidal anti-inflammatory agents
• Documented risk for drug interaction
• Uncontrolled hypertension defined as >180 systolic, >110 diastolic
• Other provider documented reason for not being on ASA therapy

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Patients ages 18 to 75 with ischemic vascular disease who have at least two visits for this condition over the last two years (established patient) with at least one visit in the last 12 months.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Ages 18 to 75 during the measurement period

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
Patients with ischemic vascular disease (IVD) with two or more visits with IVD codes in the last two years and at least one visit in the last 12 months. Medical groups perform the visit count and exclusions prior to file creation (excluded patients are not submitted in the direct data submission file). MNCM requires an upfront denominator certification process to ensure that the medical group is identifying the population correctly. Data collection or extraction cannot occur prior to MNCM approval of the denominator.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**

Birth date [Date (mm/dd/yyyy)]
Ischemic vascular disease ICD-9 codes:
410 – 410.92 Acute Myocardial Infarction (AMI)
411 – 411.89 Post Myocardial Infarction Syndrome
412 Old AMI
413 – 413.9 Angina Pectoris
414.0 – 414.07 Coronary Arthrosclerosis
414.2 Chronic Total Occlusion of Coronary Artery
414.8 Other Chronic Ischemic Heart Disease (IHD)
414.3 Atherosclerosis due to lipid rich plaque
414.9 Chronic IHD
429.2 Cardiovascular (CV) disease, unspecified
433 – 433.91 Occlusion and stenosis of pre-cerebral arteries
434 – 434.91 Occlusion of cerebral arteries
440.1 Atherosclerosis of renal artery
440.2 – 440.29 Atherosclerosis of native arteries of the extremities, unspecified
440.4 Chronic Total Occlusion of Artery of the Extremities
444 – 444.9 Arterial embolism and thrombosis
445 - 445.8 Atheroembolism

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Valid exclusions include patients who only had one coded visit to the clinic during the last two years, patients who had died during the measurement period, patients who were in hospice during the measurement period, patients who were permanent nursing home residents during the measurement period, or patients who were coded with IVD in error.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Patient was a permanent nursing home resident home during the measurement period
Patient was in hospice at any time during the measurement period
Patient died prior to the end of the measurement period
Documentation that diagnosis was coded in error

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
The ischemic vascular disease population is not currently stratified when publicly reported on MNCM's consumer website, MN HealthScores. MNCM does collect the following fields that will allow for future stratification:
Insurance coverage code (used to determine public and private purchasers): from list of MNCM-designated codes [number]
Patient's health plan member ID (used to determine public and private purchasers): unique patient health plan member ID [text]
Date of birth: [MM/DD/YYYY]
Race/ethnicity: from list of MNCM-designated codes [number]
Primary language: from list of MNCM-designated codes [number]
Country of origin: from list of MNCM-designated codes [number]
Zip code: 5-digit zip code of patient [text]
Gender: M (male), F (female), U (unknown) [text]
Co-morbidity of diabetes: 1 (yes), 2 (no) [number]
Co-morbidity of depression: 1 (yes), 2 (no) [number]

2a.12-13 Risk Adjustment Type: Case-mix adjustment

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
Risk adjustment for this measure is based on case mix (health plan product). Health plan product was selected because it can serve as a proxy for socioeconomic status, if more specific variables are not available. Socioeconomic status can be a variable in a patient's ability to comply with a treatment plan for achieving the intermediate outcomes that can postpone or prevent the long term complications of cardiovascular disease. The overall average state-wide distribution of patients across three major insurance types (Commercial,

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

Medicare and MN Healthcare Programs plus Self-pay/Uninsured) is calculated and then each reporting site's patient distribution is adjusted to match the average mix. Rates are re-weighted based on the new distribution of patients and then rates are re-calculated.
Background and Evolution of Risk Adjustment:
MN Community Measurement has been publicly reporting unadjusted ambulatory outcome rates at the clinic site level for several years dating back to 2004. Currently, the lowest level of reporting is at the clinic site and we do not publicly report any practitioner level information. As our state begins moving towards utilizing cost and quality measures to demonstrate value and utilizing these measures for incentive based payment and tiering by health plans, we began to explore risk adjustment of measures used for these purposes.
Our subcommittee of the Board of Directors, the Measurement and Reporting Committee (MARC) has reviewed several methods for risk adjusting these measures. Part of their discussion included the potential use of the risk adjusted measures for public reporting to consumers on our MN HealthScores website. The group agreed that risk adjustment would be more beneficial for tiering and incentive based programs and that there was value in reporting the unadjusted clinic site level rate for consumers for the following reasons: rates reflect actual performance, confusion for consumers in terms of explaining risk adjustment or displaying two rates (adjusted and unadjusted), or creating a mindset that it is acceptable for patients in public programs to have different treatment standards than those with commercial insurance.
There are no current plans to report risk adjusted data on our consumer facing website; however we will provide both adjusted and unadjusted clinic site level rates on our corporate website (pdf format).

2a.15-17 Detailed risk model available Web page URL or attachment: Attachment MNCM Case Mix Risk Adjustment June 2010-634242034150216836.docx

2a.18-19 Type of Score: Weighted score/composite/scale
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
This measure is calculated by submitting a file of individual patient values (e.g. blood pressure, LDL value, etc) to a HIPAA secure data portal. Programming within the data portal determines if each patient is a numerator case and then a rate is calculated for each clinic site.
If any component of the numerator is noncompliant for any one of the four components, then the patient is numerator noncompliant for the composite all or none optimal vascular care measure.
Numerator logic is as follows:
Is Blood Pressure date in the measurement year? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
Is BP Systolic <140? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
Is BP Diastolic <90? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
Is LDL date in the measurement period (e.g., from 10/01/2009 to 12/31/2010)? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
Is Tobacco Status = 1 (Tobacco Free) and Tobacco Assessment Date a valid date? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
Is Aspirin Date in the measurement period? OR, Is Aspirin Contraindication Date a valid date? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.
If all of the above numerator components are compliant, then the patient is calculated as a numerator case for the optimal vascular care measure.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Medical groups are encouraged to submit their full population of patients when possible. In 2010 (2009 dates of service), 79% of clinics in our state submitted full population for this measure; 21% submitted a random sample of no less than 60 patients at each clinical site location. This is to ensure that we have an adequate denominator at each clinic site location to accurately report rates at each clinic site location. We also calculate confidence intervals for each site. High performers are defined as clinics with rates and confidence intervals fully above the overall clinic average. For clinics whose total population is less than 60 patients, our policy is that they submit all patients. For the purpose of public reporting, we require that there be at least 30 denominator cases per clinic site location. If there are fewer than 30 patients in the denominator, the rates are not reported publicly.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

MNCM encourages medical groups to submit total population instead of sample when possible. Optimal care rates based on total population submission more precisely reflect the clinic's performance. In MNCM's annual Health Care Quality Report, the upper and lower confidence interval (CI) around the rate is displayed (this shows both a lower rate and an upper rate that would be possible if another random sample of patients was pulled for the measure). By submitting total population, the CI is more likely to be narrower. Clinics with a rate and CI that are fully above the statewide average are highlighted by MNCM as High Performers. If a clinic submits a sample, it is likely that the CI would be wider, and if the CI crosses the statewide average, the clinic would not achieve the designation of High Performer.

Submitting a sample is also an option (e.g., for clinics that use paper records or for clinics that do not have a fully implemented EMR). The requirements for submitting a sample are:
• Each clinic must submit a sample.
• If a clinic has less than 60 patients in the population for the measure, submit ALL patients (e.g., if a total of 59 patients are in the population for the measure, submit all 59 patients).
• If a clinic has 60 or more patients, first consider submitting all patients, otherwise a sample may be submitted. The minimum required sample is 60 patients per clinic site (e.g., if there are 79 eligible patients in the population, first consider submitting all 79 patients, otherwise submit a sample of at least 60).

Excel Random Number Generator:
For patient lists generated in Excel, use the "RAND" function to assign a random number to each record (please also see Microsoft Excel Help, topic RAND for more information):

1. Insert a blank column on the leftmost side of the spreadsheet
2. Label new column "RAND"
3. Place cursor in the first blank cell (A2) and type =RAND()
4. Press enter (a number like 0.793958 will appear)
5. Place the cursor back into this cell; resting over the corner to have the pointer change to a black cross, double click or drag the formula down to the last row/patient
6. Highlight the whole column and click Edit, Copy, Paste Special = Values to freeze the random number (otherwise it will change with every click on the spreadsheet)
7. Sort entire patient population by this new random number
8. Work down the list row by row, starting with row 1 until the number of records in the sample is met for submission (at least 60 patients per clinic, per measure)
9. If a patient meets one of the accepted exclusions, note this on the exclusions spreadsheet and keep working down the list. Use oversample records following the last record/row of the original sample. For example, if 60 records will be submitted and exclusions were found in the first 60 records/rows, use patients from rows 61, 62, and so forth to replace the excluded records.

Paper List Sample Selection:
For paper-generated lists, complete the following steps:

1. Start with a list that has patients sorted by some unique patient related variable.
a. Identifying number like a medical record number [MRN] or chart number is ideal.
b. Sorting alphabetically is the least desirable in terms of randomness, however, this may be used when there is no other alternative.
2. Select every Nth patient for the number of patients that will be reported.
a. N should equal the clinic site's total population divided by the number of patients that will be submitted (if needed, round down to the nearest whole number). Highlight or mark every Nth patient on the list. This is the sample.
b. Example: If a clinic site has 600 diabetes patients and 60 patients will be submitted, divide 600/60 = 10. Select every 10th patient on the list.
3. If a patient meets one of the accepted exclusions, note this on the data collection form and exclusions spreadsheet and select the very next patient on the list (just below the excluded patient).

Missing records: If a record in the sample is not available or "missing," do not exclude this record. Either locate the record and complete the data collection, or include the record and leave the data fields blank if the record cannot be located.

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
An excel template with formatted columns for data fields is provided. Many medical groups extract the information from their EMR. Registries can be used as a source of information to create the data file; however groups must ensure that all of their eligible patients are included. Paper abstraction forms are provided for those clinics who wish to use them as an interim step to creating their data file. All data is uploaded in electronic format (.csv file) to a HIPAA secure, encrypted and password protected data portal.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL www.mncm.org/site/?p=resources

2a.29-31 Data dictionary/code table web page URL or attachment: URL www.mncm.org/site/?p=resources

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO), Other Cardiologist

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data:

Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2,700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
For 2009 dates of service reported in 2010, 128 medical groups representing 573 clinics in Minnesota and neighboring states submitted data to MN Community Measurement for the Optimal Vascular Care measure rate calculation. These clinics represented 95,791 patients. The number of patients with detailed information

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Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

submitted was 63,241. A total of 79% of the clinics submitted their full population of patients with IVD; 21% submitted a sample of patients with a minimum of 60 patients per clinic site. Reasons for sampling include clinics with paper charts or clinics with an EMR currently without the capability or resources to design reports to query all needed elements from their EMR system. Aside from large sample size, other components that contribute to the reliability (consistency) include the following:
* Detailed data specifications and instructions for medical groups at www.mncm.org/site/?p=resources
* Denominator certification process; all must have their methods for identifying the population approved prior to any data collection.
* Field warnings and errors programming that occurs on file upload
* Numerator compliance calculated from raw data submitted based on programming; medical groups are not determining their own numerator cases nor calculating their own outcome rates.
* Evaluation of each clinic´s rate and eligible patient volumes for discrepancies from the prior year.
* Prior to conducting any validation audit, auditors must complete a review of the current measure specifications and pass an IRR (inter-rater reliability) test.
* Extensive audit processes for data submission. After data submission, in person validation audits are conducted comparing the submission to the patient´s medical record using NCQA´s 8 and 30 rule for audit requiring a 90% accuracy rate. Audits are conducted in the following instances: 1) a random sample of clinics with prior successful submission, 2) for all groups who are new to the submission process, 3) a group who has had a change in system or process (e.g., went from paper charts to EMR) since the last submission or 4) any group with a history of prior unsuccessful audit.
* Readily available support for questions, direct email link for assistance at support@mncm.org.

2b.3 **Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
Data submitted to the MNCM data portal for rate calculation is consistent and accurately reflects the data in the patient's medical record. Through the upfront denominator certification process we ensure that all groups are identifying the population in the same way during the same time frame. Groups that cannot comply with the measurement specifications are not allowed to submit data but encouraged to consider future submission when able to comply. Post submission validation processes ensure that the data submitted is that which is reflected in the patient's medical record.
2010 Validation Audit Results:
Of the 128 medical groups submitting data in 2010, 17 groups initially failed the audit and remedy plans were developed. All 17 groups resubmitted and passed subsequent audit.
Types of Errors Found in Validation Audits: BP was not most recent, EMR did not pull the correct date or value, ASA date could not be validated, ASA date not reported, LDL date not reported or more recent date found, and Tobacco status was not correct.
A study was conducted in 2007 comparing the two different methods of collecting the data and the subsequent rates. Comparison of rates and confidence intervals obtained by health plan sampling versus data submitted directly by the medical groups demonstrated a high rate of consistency between these two techniques. For 20 of the 22 medical groups, all rates calculated fell within both confidence intervals. According to a recent publication, "Availability of Data for Measuring Physician Quality Performance" [Scholle, SH., Am Journal of Managed Care Jan 2009] methods proposed by NCQA to assess "reliability" were applied to our data and demonstrated that all of our current data submission by clinic site location achieves values higher than the recommended value of 0.7.

2c. Validity testing

2c.1 **Data/sample** *(description of data/sample and size)***:** In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

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Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Characteristics of the entities reporting data: Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
Content validity is addressed in several ways. Potential new measures are researched for impact and opportunity and presented to our Measurement and Reporting Committee prior to development. We convene expert panels for their input and consensus (face and content validity) and test the data collection/ submission processes prior to wide scale implementation. There is consensus among our expert workgroup that the target components reflect a quality of care that will benefit patients in terms of reducing the risk of future complications.
All measures used, changed and developed by MN Community Measurement go through formal approval processes with our Measurement and Reporting Committee (has representatives from providers, health plans, data experts and consumers) and our Board of Directors.
Validity (strength of conclusions):
The goal of collecting these intermediate physiological and biochemical outcomes is to prevent further disease and disability in the future. A direct causality has not been established between these intermediate outcomes and the actual development, avoidance or delay of complications, however providers across the state believe that managing these variables will significantly impact long term outcomes (refer to ICSI guidelines).

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
Patients with IVD in our state have benefited from the increased focus on measurement, achievement of targets and transparency of information via public reporting. Currently 34% are achieving all four targets, this equates to 21,589 individuals who have reduced their future risk of heart attack and stroke. There is a wide range of rates among clinics, demonstrating opportunity for continued improvement. The top performer in the state (of reportable clinics) is at 68% of their patients meeting all four optimal care components, while some clinics are below 1%. The comparative average for all providers is based on the overall average with a large number of patients used in calculating that average (n = 95,791 patients in 2010). ICSI guidelines support the components of the all or none composite measure and there is consensus among our expert workgroup that the target components reflect a quality of care that will benefit patients in terms of reducing heart attack and stroke risk.

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
It is the intent to exclude patients for whom the achievement of targets of control would be contraindicated and those patients who are not established to a provider´s practice.
Exclusions are allowed for:
* Patients who expire during the measurement year
* Patients with less than 2 visits with IVD codes over the last 2 years
* Patients who are less than age 18 or more than age 75
* Patients who are permanent nursing home residents or enrolled in hospice during the measurement year.
Expert opinion is that these patients are either unable to participate in self management necessary to achieve optimally managed targets, or in the case of the terminally ill, not appropriate to be focusing on these physiological targets.
* Patients who are coded in error

2d.2 Citations for Evidence:

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NA ☐

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND
•precisely defined and specified:
–if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Institute for Clinical Systems Improvement (ICSI)
ICSI Stable Coronary Artery Disease April 2011
http://www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/coronary_artery_disease/coronary_artery_disease__stable__3.html
ICSI Lipid Management in Adults October 2009
http://www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/lipid_management_3/lipid_management_in_adults__4.html
ICSI Hypertension Diagnosis and Treatment November 2010
http://www.icsi.org/guidelines_and_more/gl_os_prot/cardiovascular/hypertension_4/hypertension_diagnosis_and_treatment__11.html
ICSI Preventive Services for Adults September 2010
http://www.icsi.org/guidelines_and_more/gl_os_prot/preventive_health_maintenance/preventive_services_for_adults/preventive_services_for_adults__11.html
NCQA HEDIS Technical Specifications 2010 Cholesterol Management for Patients with Cardiovascular Conditions

2d.3 **Data/sample** *(description of data/sample and size)*: In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data: Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

In addition to the denominator certification process that describes how groups excluded patients, we asked groups to record all the individual patients that they excluded and the reasons for the exclusions. Groups submitted a list of excluded patients to MNCM. The total number of exclusions submitted (n = 1,403) in 2010 was 2.2% of the number of patients submitted (1,403/63,241). Clinics that submitted excluded patients most often manually documented exclusions upon record review. Some clinics with an EMR were also able to submit patients that they were able to filter out of the patient population (e.g., deceased patients).

2d.4 **Analytic Method** *(type analysis & rationale)*:
If a clinic elected to take allowable exclusions, they were required to submit a list of excluded patients along with the type of exclusion per patient. MNCM conducted a review of all exclusions taken to validate that only allowable exclusions were taken and to identify the number of exclusions by type.

2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*:
The frequency of the use of the exclusions under study was 2.2% of the number of patients submitted (1,403/63,241).
Medical group utilization of exclusions: 77 of 128 (60%) of groups submitted exclusions.

2e. Risk Adjustment for Outcomes/ Resource Use Measures	**2e**

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR rationale/data support no risk adjustment.

2e.1 Data/sample *(description of data/sample and size)*: In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data: Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2,700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

Analysis included examining the difference between unadjusted and risk adjusted rates and the ranking impact for the top 15 clinic sites representing 1,746 patients.

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
Risk adjustment for this measure is based on case mix (health plan product). Health plan product was selected because it can serve as a proxy for socioeconomic status. Socioeconomic status can be a variable in a patient's ability to comply with a treatment plan for achieving the intermediate outcomes that can postpone or prevent the long term complications of cardiovascular disease.
The overall average state-wide distribution of patients across three major insurance types (Commercial, Medicare and MN Healthcare Programs plus Self-pay/Uninsured) is calculated and then each reporting site's patient distribution is adjusted to match the average mix. Rates are re-weighted based on the new distribution of patients and then rates are re-calculated.

2e.3 Testing Results *(risk model performance metrics)*:
For 2010 (2009 dates of service), 573 clinics in Minnesota and neighboring states (border clinics) submitted data for patients with IVD. These clinics represented 95,791 patients. 79% of the clinics submitted full population data; 21% submitted random samples no less than 60 records per clinic site. The total number of patients submitted was 63,241. For clinics that submitted a sample, reported rates are weighted against the clinic's full eligible population of patients with IVD.
Analysis included examining the difference between unadjusted and risk adjusted rates and the ranking impact for the top 15 clinic sites representing 1,746 patients. (Please refer to the table below). Ultimately, the overall ranking of the top 15 clinics does change, but in general the same sites remain in the top 15 with all of the top 10 clinics maintaining a ranking in the top 15.

Column 1: Unadjusted Ranking
Column 2: Risk Adjusted Ranking
Column 3: Unadjusted Rate
Column 4: Risk Adjusted Rate
Column 5: # Patients
Column 6: Clinic
1 1 68.3% 67.2% 60 A
2 2 65.8% 63.2% 38 B

C☐ P☐ M☐ N☐ NA☐

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

6 3 59.9% 59.8% 152 C
3 4 60.8% 59.7% 204 D
8 5 58.3% 59.6% 60 E
5 6 60.0% 58.7% 30 F
9 7 58.0% 58.0% 174 G
10 8 57.9% 57.9% 399 H
7 9 59.6% 57.5% 104 I
4 10 60.6% 57.3% 66 J
13 11 56.5% 56.8% 154 K
11 12 57.1% 56.3% 70 L
14 13 56.1% 55.6% 41 M
17 14 55.0% 54.6% 60 N
19 15 54.5% 54.3% 134 O

2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** Measure has a risk adjustment method.

2f. Identification of Meaningful Differences in Performance

2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

The data submitted represents 66% of all eligible patients; based on the large sample size, the results can be reliably reproduced. The data submission process requires individual patient data for each component of the "all or none" composite measure (e.g., most recent LDL value and blood pressure in the measurement period). This information is accurately captured as evidenced by post submission validation audits against the patient's medical record.

Characteristics of the entities reporting data: Based on number of physicians, the size of the 128 medical groups that submitted data ranged from one-physician practices to medical groups with more than 2,700 physicians. Ranges include: Medical groups with <25 physicians = 87; medical groups with 25-99 physicians = 25; medical groups with 100-249 physicians = 5; medical groups with 250+ physicians = 11. 50 medical groups were located within the Twin Cities metro area, while 78 medical groups were located outside of the Twin Cities metro area. 110 medical groups were identified as primary care clinics, 17 medical groups were identified as multi-specialty clinics, and one group was identified as a single-specialty clinic (cardiology).

Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*:
Outcome results are displayed on the public website MN HealthScores www.mnhealthscores.org and can be ranked in order of performance or by the name of the clinic. The most significant point for comparison is the overall experiential average that is calculated based on over 63,241 patients submitted every year to provide an annually updated weighted average that representing over 95,791 patients. Additionally, results for up to three clinics can be compared and used by the consumer to choose a clinic with excellent outcome rates or by a provider to better understand successes or opportunities for improvement. Providers have additional analytical capabilities within the HIPAA secure data portal for understanding the results of their own data. On the public website, current and historical weighted rates are available and compared to the state average. Rates are also stratified by the individual component of the outcome measure, (e.g. within this IVD measure who is doing the best at managing LDL levels?) Upper and lower confidence limits are calculated for each clinic site based on the eligible population and the number of patients submitted. In our annual Health Care Quality Report (located at http://www.mncm.org/site/?page=our_work&view=2 page 20) clinics with high performers are highlighted. High performers are defined as clinics with rates and confidence intervals fully

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Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

above the overall clinic average.

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)***:**
For 2010 (2009 dates of service), 33.8% of the patients met all four component targets in the composite measure and were considered optimally managed. This rate is a weighted average of the total population of patients for clinics submitting data (Total Population = 95,751, Submitted = 63,241). 79% of the clinics submitted full population data, the remaining clinics provided a random sample. Of the clinics that were reportable (patient n >= 30), there was a wide range of variability with the lowest scoring clinic at 1.7% and the highest scoring clinic at 68.3%.

The trends for this measure have remained relatively unchanged:
2008 (2007 dates of service) = 33%
2000 (2008 dates of service) = 34%
2010 (2009 dates of service) = 34%

Percentage of Clinics within each Optimal Rate Range (reportable clinics)
0%-9.9% 4.4%
10%-19.9% 14.3%
20%-29.9% 21.9%
30%-39.9% 28.2%
40%-49.9% 22.2%
50%-59.9% 7.9%
60%-69.9% 1.2%

Individual rates of the components are as follows:
LDL <100 = 64%
Blood Pressure <130/80 = 58% *
Daily Aspirin Use = 92%
Tobacco Non-user = 81%

* Note for Blood Pressure: Historically and in currently reported data, the target was <130/80 for all IVD patients. For 2011 reporting (2010 dates of service) the target will be modified to <140/90 for IVD patients with a co-morbidity of diabetes and <130/80 for all other IVD patients. For 2012 reporting (2011 dates of service) the target will be < 140/90 for all patients with IVD.

Mean: 32.4%
Median: 33.3%
Standard Deviation: 0.13063 (13.1%)
Min: 1.7%
Max: 68.3%
(reflects reportable clinics, patient n >= 30)

Publicly reported data with clinic level rates is available on the MN HealthScores website www.mnhealthscores.org. Additionally, for more detailed information including highlights of top performers, breakdown by clinic site with confidence intervals please refer to our Health Care Quality Report posted on our corporate website at: www.mncm.org/site/?page=our_work&view=2

2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample *(description of data/sample and size)***:** Multiple data sources are not used. The data source for this information is the patient´s medical record. No other sources of information are applicable (e.g., is not a claims based measure as lab values and blood pressure values are needed). Information can be obtained either from a query of the electronic medical record or via chart abstraction. If data is stored in a registry, the registry must include all eligible patients and must match the source information (the patient's medical record).

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Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

2g.2 Analytic Method *(type of analysis & rationale)*: n/a **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: n/a	
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: The IVD population is not currently stratified when publicly reported on our consumer website, MN HealthScores. MNCM does collect the following fields that will allow for future stratification: Insurance coverage code (used to determine public and private purchasers): from list of MNCM-designated codes Patient's health plan member ID (used to determine public and private purchasers): unique patient health plan member ID Date of birth: (MM/DD/YYYY) Race/ethnicity: from list of MNCM-designated codes Primary language: from list of MNCM-designated codes Country of origin: from list of MNCM-designated codes Zip code: 5-digit zip code of patient Gender: M (male), F (female), U (unknown) Co-morbidity of diabetes: 1 (yes), 2 (no) Co-morbidity of depression: 1 (yes), 2 (no) **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** MNCM does collect the following fields that will allow for future stratification: Insurance coverage code (used to determine public and private purchasers): from list of MNCM-designated codes Patient's health plan member ID (used to determine public and private purchasers): unique patient health plan member ID Date of birth: (MM/DD/YYYY) Race/ethnicity: from list of MNCM-designated codes Primary language: from list of MNCM-designated codes Country of origin: from list of MNCM-designated codes Zip code: 5-digit zip code of patient Gender: M (male), F (female), U (unknown) Co-morbidity of diabetes: 1 (yes), 2 (no) Co-morbidity of depression: 1 (yes), 2 (no)	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties*?	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* **C**☐ **P**☐ **M**☐ **N**☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use	**3a** C☐ P☐

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

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3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:**
The optimal vascular care measure rates are publicly reported by MN Community Measurement on their consumer website located at the MN HealthScores Website at www.mnhealthscores.org. While the all-or-none composite measure is considered to be the gold standard, reflecting best patient outcomes, the individual components may be measured as well. This is particularly helpful in quality improvement efforts to better understand where opportunities exist in moving the patients toward achieving all of the desired outcomes. Rates for the components are also publicly reported on the MN HealthScores Website.

MN Community Measurement is a collaborative effort in our community among those who believe that you cannot improve what you don´t measure. Our collaborative includes medical groups, clinics, physicians, hospitals, health plans, employers, consumer representatives and quality improvement organizations. These stakeholders support the notion that greater transparency in our health care system will lead to better health outcomes for the people of Minnesota. MN Community Measurement´s mission to accelerate the improvement of health by publicly reporting health care information is having a positive effect on the health care provided in Minnesota. For more information please visit our corporate website at www.mncm.org.

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
Publicly reported data is used by MN Bridges to Excellence for P4P programs and additionally used by Blue Cross & Blue Shield of MN, HealthPartners and Medica, (largest health plans in MN) within their contractual agreements with providers. Beginning in 2010, this measure was part of the Minnesota Statewide Quality Reporting & Measurement System, which will require participation and data submission by all physician clinics in the state. Use of data for quality improvement efforts is encouraged and results reporting within the data portal assist groups in understanding potential opportunity within each of the components by displaying component results as compared to the overall rates. Additionally there is a compare function built into the public reporting website so that consumers (or providers) can pick clinics to be compared.

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample *(description of data/sample and size)***:** In 2010 (2009 dates of service), 128 medical groups representing 573 physician clinics and 95,791 patients with IVD in Minnesota and neighboring communities submitted data for this measure. Of the 95,791 IVD patients, a sample of 63,241 patients was submitted for rate calculation. 79% of the clinics submitted full population data, 21% of clinics submitted a random sample. Dates of service included 01/01/2009 to 12/31/2009 (LDL date of service was a 15-month time frame 10/01/2008 to 12/31/2009).

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Of the 573 clinic sites that reported data, 455 clinics used an electronic medical record in some capacity for the clinical data collection (data extraction/query, or manual data abstraction), and 118 clinics used paper records for the clinical data collection.

Consumer: In June of 2007, a series of three consumer focus groups were interviewed (28 individuals) to provide feedback about our old website. A new, enhanced website was launched in 2009 and additional feedback was sought from a focus group (5 individuals)
Providers: August 2008 and August 2009 (102 respondents)
Direct Data Submission Users: July 2009 (96 respondents)
Medical Groups: April 2010 (126 respondents)

3a.5 Methods *(e.g., focus group, survey, QI project)*:
Focus groups of consumers for usability of the website.
Informal physician feedback about QI utility and functionality within the HIPAA secure data portal.
Medical Group/ Provider Survey
Direct Data Submission Users Survey

3a.6 Results *(qualitative and/or quantitative results and conclusions)*:
Consumer: In June of 2007, a series of three consumer focus groups were interviewed (28 individuals) to provide feedback about our old website. Some interesting feedback was obtained about our composite measures: accept responsibility for their own health outcomes, health care quality is not uniform across sites, awareness of the website is low, value having the information available during open enrollment and that the website is fairly easy to use. A new, enhanced website was launched in 2009 and additional feedback was sought from a focus group (5 individuals) that reacted positively about the new search and compare capabilities.
Providers: August 2008- Physicians were involved in the data portal redesign of the results display in terms of what additional information would be useful to them in using the data for quality improvement efforts. Providers liked the enhancements, display of the breakdown of the individual components and ability to download their own group's specific patient level data for use in further analysis.

Medical Groups: (includes medical directors, clinic administrators, quality improvement, and data analysts)
August 2009- Survey to medical groups with 102 respondents
* 65% feel that MNCM is selecting measures that drive the most important improvement in health care
* 59% MNCM is accelerating the improvement of care by publicly reporting information
* 67% have visited the new public website MNHealthScores and 74% the corporate website
* 72% participate in direct data submission, an additional 20% plan to participate in 2010. The most frequent reason cited for not participating was lack of an EMR.
* 35% of respondents would like more input into the measurement development process. This is an area we are addressing by including a public comment period for new measures after specs are developed and prior to pilot/ implementation.
Direct Data Submission Users: Survey July 2009 (96 respondents)
Ratings of Top Two Categories (e.g. Good and Excellent or Helpful or Very Helpful):
* 71% rating for the direct data submission guide; overall
* 77% guide instructions for identifying population
* 78.5% guide instructions for sampling procedures
* 84.3% guide instructions for data submission process
April 2010 – Survey to medical groups with 126 respondents.
*52% feel that MNCM is selecting measures that drive the most important improvement in health care.
*48% feel that MNCM is accelerating the improvement of health by publicly reporting health care information.
39% of respondents visit MN HealthScores occasionally or frequently and 45% of respondents visit MNCM's corporate site occasionally or frequently.

Feedback from medical groups included having more input into the measure development process and to receive increased communication about MNCM's submission timelines. A detailed 18-month DDS planning calendar has already been developed for medical group use and more educational webinars detailing the DDS process steps are in the plans for this fall. Medical group involvement in the measure development process (including input from groups in greater Minnesota) continues to grow as new measures are developed and workgroups formed.

76% of survey respondents participated in direct data submission (DDS) during 2010.
Ratings of Top Two Categories (e.g. Good and Excellent or Helpful or Very Helpful):
*80% rating for the overall guide for Optimal Diabetes Care and Optimal Vascular Care.

* 82% rating for instructions on identifying a medical group's patient population (denominator) * 84% rating for instructions on selecting a sample * 81% rating for the abstraction/field specifications	
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:** There are other similar measures that address three of the four components separately, but no measure exists that is a composite outcome measure. NQF # 0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic (NCQA) NQF # 0073 IVD: Blood Pressure Management (NCQA) NQF # 0075 IVD: Complete Lipid Profile and LDL Control <100 (NCQA)	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?** Yes, this IVD measure and its targets are aligned with the goals of NCQA´s Heart Stroke Recognition Program: The Heart Stroke Recognition Program (HSRP) assesses key quality performance measures that are based on AHA/ASA and American college of Cardiology guidelines for secondary prevention of cardiovascular disease and stroke. Program measures include: Blood pressure control Complete lipid profile Cholesterol control Use of aspirin or another antithrombotic Smoking status and cessation advice or treatment HSRP Recognition provides assurance that physicians are providing high quality, evidenced –based care for their CVD and stroke patients. Additionally, MNCM uses the HEDIS CMC (Cholesterol Management for Patients With Cardiovascular Conditions) as a resource for our measurement denominator definitions for ICD-9 codes and other relevant definitions as applicable to a medical group submitting data versus health plan claims data. (e.g. medical groups do not have the capability to identify continuously enrolled patients within a health plan)	**3b** C☐ P☐ M☐ N☐ NA ☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** This measure provides added value as patients achieving control or compliance in all four components (blood pressure, lipids, tobacco non-user and daily aspirin) are more likely to significantly reduce their risk of complications, co-morbidities or catastrophic events as compared to patients with only one component in control. Providers have embraced the challenge of improving all of these variables and demonstrated significant increases in their outcome scores since the measure was first launched. 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** There are other similar measures that address three of the four components separately, but no measure exists that is a composite outcome measure. NQF # 0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic (NCQA) NQF # 0073 IVD: Blood Pressure Management (NCQA) NQF # 0075 IVD: Complete Lipid Profile and LDL Control <100 (NCQA)	**3c** C☐ P☐ M☐ N☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	4a C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	4b C☐ P☐ M☐ N☐
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	4c C☐ P☐ M☐ N☐ NA ☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** MN Community Measurement has modeled the direct data submission to minimize inaccuracies, errors and unintended consequences. All groups participating sign a terms of use agreement that delineates the group's responsibilities for submission of data and consequences for not participating in good faith. Additionally all groups sign a Business Associate Agreement that outlines the use of the data. Denominator certification prior to any data collection ensures that groups are following the specifications and correctly identifying their population and serves as a point of correction prior to the expenditure of resources for data collection. Groups provide documentation of cases that are excluded and this is reviewed by MNCM staff prior to approval of the data submission. Extensive audit processes also support the data's accuracy. After data submission, in person validation audits are conducted comparing the submission to the patient´s medical record using NCQA´s 8 and 30 rule for audit requiring a 90% accuracy rate. Groups are only allowed three patient records with error out of 30 reviewed in order to achieve 90%. Audits are conducted in the following instances: 1) a random sample of clinics with prior successful submission, 2) for all groups who are new to the submission process, 3) a group who has had a change in system or process (e.g. went from paper charts to EMR) since the last submission or 4) any group with a history of prior unsuccessful audit. It has been our experience that the post submission audits have identified both issues with data extraction programming from an EMR and abstraction errors when data is collected from the chart. Groups have been amenable to remedy plans, resubmission and re-audit. Results of our audit in 2010 are as follows: Of the 128 medical groups submitting data in 2010, 17 groups initially failed the audit and remedy plans were developed. All 17 groups resubmitted and passed subsequent audit. Types of Errors Found in Validation Audits: BP was not most recent, EMR did not pull the correct date or value, ASA date could not be validated, ASA date not reported, LDL date not reported or more recent date found, Tobacco status was not correct.	4d C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.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/frequency of data collection,**	4e C☐ P☐ M☐

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:
Over the last three years we have learned the following:
1. Data Submission- Providing data collection software for medical groups wishing to submit data was not always the best and most efficient way of collecting data. As electronic health records use becomes more pervasive in our state, providing templates of data file submissions proved to be more efficient.
2. Specifications- Detailed specifications with instructions on how to handle most situations (e.g. detailed instructions on blood pressure values) has been valuable to medical groups, increased data accuracy and resulted in 98% of groups submitting data successfully.
3. Audit- Audit methods have ensured the accuracy of our data and we are able to successfully compare providers because everyone is pulling their data the same way and subject to the same rules.
4. Confidentiality- Patient confidentiality has been addressed by numerous mechanisms. MNCM only receives the patient level information needed to calculate the rates, determine eligibility for inclusion in the measure and support the administration of pay for performance programs. The PHI submitted is minimal and the data is protected by 1) password protection with password only available to the medical group submitting data, 2) file upload process is encrypted as data is transferred and 3) Data is stored on a separate secure server and meets all HIPAA protection rules.
5. Electronic Medical Record- It is easier for groups that have an electronic medical record to submit data and to submit their full population of patients, however many groups with paper chart systems can successfully submit their sample.
6. Acceptance of Data- Vast improvement in terms of sample sizes and timeliness of the data submitted by medical groups six weeks after the end of the measurement year as compared to prior method of health plan's samples and the results over a year old. Providers are more accepting of the results as compared to previous methods of pooling health plan samples.
7. Data Collection Burden- We have learned that for additional future measures we will need to stagger the data collection time frames and submission deadlines as to not burden the medical groups in terms of abstraction/ extraction (e.g. can't always have a measurement period Jan 1st to Dec 31st reported the second week of February, may need to consider July 1st to June 30th with data submission in August)
8. Health Plans: pay for performance and the inclusion of measures within contracts significantly impacts the number of groups participating in each measure (Diabetes, Ischemic Vascular, and Depression)

4e.2 Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*)**:**
Medical Groups: There are no fees charged to medical groups to submit their data to MNCM. Data collection costs (staff time to either write an extract program from EMR or staff time to abstract a sample of patient data from charts) are absorbed by the medical groups submitting data. For clinics that are abstracting from charts, it generally takes less than eight hours to abstract information for a composite measure for 60 patients. Time spent can often be dependent on the quality and completeness of the record.
Administrative (Costs to MNCM): Costs are associated with staffing. Currently, there is one full time project manager and one part time project coordinator dedicated to the direct data submission project and services for validation audits are contracted with independent auditors during a three-month period each year. Responsibilities include creation and annual update of the direct data submission guide, recommendations for data portal enhancements, communication to users, denominator certification, measure review with auditors for validation, availability for all questions & problems related to specs and submission, planning and performing some of the validation audits and approving data for publication.
It is estimated that the startup costs for the development of our data portal was approximately $25,000 for both the diabetes and ischemic vascular composite measures.

4e.3 Evidence for costs:
MNCM contracts with portal vendor (historical) and budget.
Staff's experience with data collection at numerous clinic sites.

4e.4 Business case documentation: Prior to implementing the direct data submission process for the composite measure for IVD, MN Community Measurement and it stakeholders knew there was great variability in the care and management that was being provided to patients and preliminary results for a composite measure demonstrated low overall rates and significant room for improvement. Groups were already used to collecting and reporting this information at a summary level to one of the state's major health plans. As the process moved towards direct data submission, information was more acceptable to the providers in terms of how the data was collected, opportunity to submit full population to better reflect true rates, timeliness and availability of the data for internal QI processes.

N☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
MN Community Measurement, 3433 Broadway Street NE, Suite 455, Minneapolis, Minnesota, 55413

Co.2 Point of Contact
Anne, Snowden, MPH, CPHQ, snowden@mncm.org, 612-454-4811-

Measure Developer If different from Measure Steward
Co.3 Organization
MN Community Measurement, 3433 Broadway Street NE, Suite 455, Minneapolis, Minnesota, 55413

Co.4 Point of Contact
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Co.5 Submitter If different from Measure Steward POC
Sandy, Larsen, larsen@mncm.org, 612-454-4818-, MN Community Measurement

Co.6 Additional organizations that sponsored/participated in measure development
Upon the recommendation of MNCM's Measurement and Reporting Committee to address and make changes to the blood pressure numerator logic for the current measurement year (2010) using an expedited process after ICSI Diabetes guidelines were revised, a technical advisory group was convened virtually via email to review initial recommendations for changes and to provide expertise and feedback for changes to the blood pressure component (affecting the Optimal Diabetes Care and Optimal Vascular Care measures). Workgroup included:
Beth Averbeck, MD HeathPartners
Rich Bergenstal, MD International Diabetes Center Park Nicollet
Barry Bershow, MD, Fairview Health Services
John Fredrick, MD Preferred One
Diane Mayberry, MN Community Measurement
Victor Montori, MD Mayo Clinic
Mark Nyman, MD Mayo Clinic
Gene Ollila, MD Allina Medical Clinic
Collette Pitzen, MN Community Measurement
Kari Retzer, ICSI Facilitator for Diabetes Guideline
JoAnn Sperl-Hillen, MD HealthPartners
Linda Walling, MD, HealthEast
Please note, following further guideline changes in late 2010 related to blood pressure management, the target was changed to allow for < 140/90 for all patients with ischemic vascular disease and the delineation of diabetic vs. non-diabetic IVD patient targets was no longer necessary.

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development

Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development. Upon the recommendation of MNCM's Measurement and Reporting Committee to address and make changes to the blood pressure numerator logic for the current measurement year (2010) using an expedited process after ICSI Diabetes guidelines were revised, a technical advisory group was convened virtually via email to review initial recommendations for changes and to provide expertise and feedback for changes to the blood pressure component (affecting the Optimal Diabetes Care and Optimal Vascular Care measures). Workgroup included: Beth Averbeck, MD HeathPartners Rich Bergenstal, MD International Diabetes Center Park Nicollet Barry Bershow, MD, Fairview Health Services John Fredrick, MD Preferred One Diane Mayberry, MN Community Measurement Victor Montori, MD Mayo Clinic Mark Nyman, MD Mayo Clinic Gene Ollila, MD Allina Medical Clinic Collette Pitzen, MN Community Measurement Kari Retzer, ICSI Facilitator for Diabetes Guideline JoAnn Sperl-Hillen, MD HealthPartners Linda Walling, MD, HealthEast Please note, following further guideline changes in late 2010 related to blood pressure management, the target was changed to allow for < 140/90 for all patients with ischemic vascular disease and the delineation of diabetic vs. non-diabetic IVD patient targets was no longer necessary.
Ad.2 If adapted, provide name of original measure: CAD: optimally managed modifiable risk **Ad.3-5 If adapted, provide original specifications URL or attachment** Attachment HP CAD Measure - NQF document-634242067290696795.pdf
Measure Developer/Steward Updates and Ongoing Maintenance **Ad.6 Year the measure was first released:** 2002 **Ad.7 Month and Year of most recent revision:** 10, 2010 **Ad.8 What is your frequency for review/update of this measure?** Annual review **Ad.9 When is the next scheduled review/update for this measure?** 07, 2011
Ad.10 Copyright statement/disclaimers: (c) MN Community Measurement, 2010. All rights reserved.
Ad.11 -13 Additional Information web page URL or attachment:
Date of Submission (*MM/DD/YY*)**:** 05/03/2011

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1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

MN Community Measurement
Methodology for Case Mix Risk Adjustment of Clinic Level Results
Optimal Diabetes Care Measure and Optimal Vascular Care Measure

Background and Evolution of Risk Adjustment:

MN Community Measurement has been publicly reporting unadjusted ambulatory outcome rates at the clinic site level for several years dating back to 2004. Currently, the lowest level of reporting is at the clinic site and we do not publicly report any practitioner level information. As our state begins moving towards utilizing cost and quality measures to demonstrate value and utilizing these measures for incentive based payment and tiering by health plans, we began to explore risk adjustment of measures used for these purposes.

Our subcommittee of the Board of Directors, the Measurement and Reporting Committee (MARC) has reviewed several methods for risk adjusting these measures. Part of their discussion included the use of the risk adjusted measures overall, especially for public reporting for consumers on our MN HealthScores website. The group agreed that risk adjustment would be more beneficial for tiering and incentive based programs and that there was value in the unadjusted clinic site level rate for consumers for the following reasons: rates reflect actual performance, confusion for consumers in terms of explaining risk adjustment or displaying two rates (adjusted and unadjusted), or creating a mindset that it is acceptable for patients in public programs to have different treatment standards than those with commercial insurance.

There are no current plans to provide risk adjusted data on our consumer facing website; however we will provide both adjusted and unadjusted clinic site level rates on our corporate website (pdf format).

Case Mix Risk Adjustment:

Risk adjustments for these measures are based on case mix (health plan product). Health plan product was selected because it can serve as a proxy for socioeconomic status, if more specific variables are not available. Socioeconomic status can be a variable in a patient's ability to comply with a treatment plan for achieving the intermediate outcomes that can postpone or prevent the long term complications of diabetes or cardiovascular disease.

The overall average state-wide distribution of patients across three major insurance types (Commercial, Medicare and MN Healthcare Programs plus Self-pay/Uninsured) is calculated and then each reporting site's patient distribution is adjusted to match the average mix. Rates are re-weighted based on the new distribution of patients and then rates are re-calculated.

Example of Case Mix Risk Adjustment Methodology: (Fictitious values)

Step One: Unadjusted Rates and Patient Numbers According to Payer Types

Clinic 1	Commercial	MN Healthcare Programs plus Self-pay/Uninsured	Medicare	Total
# of patients	250	50	100	400
# of patients meeting measure	163	23	55	241
% meeting measure	65.2%	46.0%	55.0%	**60.3%**
% of patients in payer type	62.5%	12.5%	25.0%	100.0%

Step Two: Calculate the Statewide Average Payer Mix

Statewide Distribution	Commercial	MN Healthcare Programs plus Self-pay/Uninsured	Medicare	Total
% distribution of patients	55.0%	29.0%	16.0%	100.0%

Step Three: Adjust Rates to Statewide Average Payer Mix

Clinic 1	Commercial	MN Healthcare Programs plus Self-pay/Uninsured	Medicare	Total
Adjusted # of patients	220	116	64	400
Adjusted # of patients meeting measure	143	53	35	231
Adjusted % meeting measure	65.0%	45.7%	54.7%	**57.8%**

Testing the Model: Diabetes Population Results

For 2009 dates of service, 572 clinics in Minnesota and neighboring states (border clinics) submitted data for patients with diabetes. These clinics represented 216,229 patients, and it is estimated that this represents 95% of diabetics in the state of MN. 65% of the clinics submitted full population data; the remainder submitted random samples no less than 60 records per clinic site. The total number of patients submitted was 140,884. For clinics that submitted a sample, reported rates are weighted against the clinic's full eligible population of diabetic patients.

Analysis included examining the difference between unadjusted and risk adjusted rates and the ranking impact for the top 15 clinic sites representing 5,303 patients. (Please refer to the table below). Ultimately, the overall ranking of the top 15 clinics does change, but in general the same sites remain in the top 15 with all of the top 10 clinics maintaining a ranking in the top 15.

Top 15 Clinic Rankings - Diabetes Measure (2009 DOS)

Before and After Risk Adjustment

Unadjusted Ranking	Risk Adjusted Ranking	Unadjusted Rate	Risk Adjusted Rate	Patients	Clinic
4	1	56.8%	57.2%	338	A
3	2	58.7%	56.6%	75	B
2	3	60.0%	54.6%	60	C
6	4	51.5%	51.3%	410	D
1	5	60.8%	51.2%	51	E
8	6	49.9%	49.2%	1053	F
11	7	48.5%	48.6%	171	G
5	8	53.3%	47.8%	60	H
9	9	49.6%	47.6%	278	I
7	10	50.0%	47.0%	60	J
13	11	47.1%	47.0%	563	K
14	12	46.8%	46.6%	419	L
10	13	48.6%	46.3%	477	M
17	14	46.3%	46.0%	136	N
16	15	46.4%	45.9%	1152	O

Testing the Model: Vascular Population Results

For 2009 dates of service, 573 clinics in Minnesota and neighboring states (border clinics) submitted data for patients with ischemic vascular disease (IVD). These clinics represented 95,791 patients. 66% of the clinics submitted full population data; the remainder submitted random samples no less than 60 records per clinic site. The total number of patients submitted was 63,241. For clinics that submitted a sample, reported rates are weighted against the clinic's full eligible population of diabetic patients.

Analysis included examining the difference between unadjusted and risk adjusted rates and the ranking impact for the top 15 clinic sites representing 1,746 patients. (Please refer to the table below). Ultimately, the overall ranking of the top 15 clinics does change, but in general the same sites remain in the top 15 with all of the top 10 clinics maintaining a ranking in the top 15.

Top 15 Clinic Rankings - Vascular Measure (2009 DOS)
Before and After Risk Adjustment

Unadjusted Ranking	Risk Adjusted Ranking	Unadjusted Rate	Risk Adjusted Rate	Patients	Clinic
1	1	68.3%	67.2%	60	A
2	2	65.8%	63.2%	38	B
6	3	59.9%	59.8%	152	C
3	4	60.8%	59.7%	204	D
8	5	58.3%	59.6%	60	E
5	6	60.0%	58.7%	30	F
9	7	58.0%	58.0%	174	G
10	8	57.9%	57.9%	399	H
7	9	59.6%	57.5%	104	I
4	10	60.6%	57.3%	66	J
13	11	56.5%	56.8%	154	K
11	12	57.1%	56.3%	70	L
14	13	56.1%	55.6%	41	M
17	14	55.0%	54.6%	60	N
19	15	54.5%	54.3%	134	O