NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Component # 1 A1c

Measure Number (*if previously endorsed*)**:** #0729

Measure Title: Optimal Diabetes Care- A1c Control Component

IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here: Optimal Diabetes Care

Date of Submission: 12/3/2014

Instructions

- *For composite performance measures:*
  - *A separate evidence form is required for each component measure unless several components were studied together.*
  - *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*
- Respond to all questions as instructed with answers immediately following the question. All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Maximum of 10 pages (*incudes questions/instructions*; minimum font size 11 pt; do not change margins). ***Contact NQF staff if more pages are needed.***
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.

Note: The information provided in this form is intended to aid the Steering Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF's evaluation criteria.

1a. Evidence to Support the Measure Focus

The measure focus is evidence-based, demonstrated as follows:

- Health outcome: [3] a rationale supports the relationship of the health outcome to processes or structures of care. Applies to patient-reported outcomes (PRO), including health-related quality of life/functional status, symptom/symptom burden, experience with care, health-related behavior.
- Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured intermediate clinical outcome leads to a desired health outcome.
- Process: [5] a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured process leads to a desired health outcome.
- Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured structure leads to a desired health outcome.
- Efficiency: [6] evidence not required for the resource use component.

Notes

3. Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.

4. The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) grading definitions and methods, or Grading of Recommendations, Assessment, Development and Evaluation (GRADE) guidelines.

5. 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 multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.

6. Measures of efficiency combine the concepts of resource use and quality (see NQF's Measurement Framework: Evaluating Efficiency Across Episodes of Care; AQA Principles of Efficiency Measures).

1a.1.This is a measure of: (*should be consistent with type of measure entered in De.1*)
Outcome

- ☐ Health outcome: Click here to name the health outcome
- ☐Patient-reported outcome (PRO): Click here to name the PRO
  PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors
- ☒ Intermediate clinical outcome (*e.g., lab value*): A1c is less than 8.0

☐ Process: Click here to name the process
☐ Structure: Click here to name the structure
☐ Other: Click here to name what is being measured

_____

HEALTH OUTCOME/PRO PERFORMANCE MEASURE *If not a health outcome or PRO, skip to 1a.3*

1a.2. Briefly state or diagram the path between the health outcome (or PRO) and the healthcare structures, processes, interventions, or services that influence it.

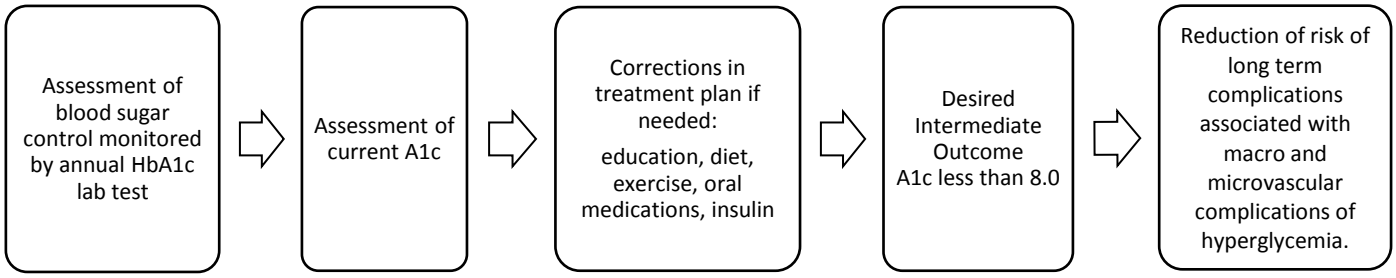
1a.2.1. State the rationale supporting the relationship between the health outcome (or PRO) to at least one healthcare structure, process, intervention, or service (*i.e., influence on outcome/PRO*).

Note: For health outcome/PRO performance measures, no further information is required; however, you may provide evidence for any of the structures, processes, interventions, or service identified above.

_____

INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURE

1a.3. Briefly state or diagram the path between structure, process, intermediate outcome, and health outcomes. Include all the steps between the measure focus and the health outcome.



Long term complications: blindness, renal failure, amputation
Macrovascular complications: coronary artery disease, peripheral artery disease, stroke
Microvascular complications: diabetic nephropathy, neuropathy and retinopathy

1a.3.1. What is the source of the systematic review of the body of evidence that supports the performance measure?

☒ Clinical Practice Guideline recommendation – ***complete sections 1a.4, and 1a.7***
☐ US Preventive Services Task Force Recommendation – ***complete sections 1a.5 and 1a.7***
☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*) – ***complete sections 1a.6 and 1a.7***
☐ Other – ***complete section 1a.8***

Please complete the sections indicated above for the source of evidence. You may skip the sections that do not apply.

_____

1a.4. CLINICAL PRACTICE GUIDELINE RECOMMENDATION

1a.4.1. Guideline citation (*including date*) and **URL for guideline** (*if available online*):

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Redmon B, Caccamo D, Flavin P, Michels R, Myers C, O'Connor P, Roberts J, Setterlund L, Smith S, Sperl-Hillen J. Institute for Clinical Systems Improvement. Diagnosis and Management of Type 2 Diabetes Mellitus in Adults. Updated July 2014.

https://www.icsi.org/guidelines__more/catalog_guidelines_and_more/catalog_guidelines/catalog_endocrine_guidelines/diabetes/

1a.4.2. Identify guideline recommendation number and/or page number and **quote verbatim, the specific guideline recommendation**.

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014 pg. 19

Algorithm Annotation # 4- Glycemic Control and A1c Goals

4. Glycemic Control and A1c Goals

Recommendation	Quality of Evidence and Strength of Recommendation
A clinician should personalize goals with patients diagnosed with T2DM to achieve glycemic control with a hemoglobin A1c < 7% to < 8% depending on individual patient factors.	Quality of Evidence: High Strength of Recommendation: Strong
Benefits: Achieving near-normal glycemic control lowers risk of diabetes microvascular complications such as retinopathy, nephropathy and amputations. Achieving A1c of 6.9 to 7.9% may also significantly reduce macrovascular complications based on Steno-2 and UKPDS data. **Harms:** Near-normal glycemic control (A1c around 6.4 to 6.5%) achieved through intensive pharmacotherapy appears to have less benefit for major CV events (ACCORD ADVANCE VADT) and in one large trial significantly increased mortality 20% (ACCORD). In some patients, aggressive pharmacotherapy with insulin, sulfonylureas or certain other agents may lead to weight gain and severe hypoglycemia. The long-term cardiovascular safety of agents other than metformin and human insulins has yet to be established. **Benefits-Harms Assessment:** Therefore, to optimize the balance between benefits and harms for a given patient, personalization of glycated hemoglobin (A1c) goals in the range of < 7% to < 8% is recommended.	
Relevant Resources: *Hemmingsen, 2013; Callaghan, 2012; Action to Control Cardiovascular Risk in Diabetes Study Group 2008, 2011; ACCORD, 2010b; Ismail-Beigi, 2010; Duckworth, 2009; NICE – Sugar Study Investigators, The, 2009; Ray, 2009; Turnbull, 2009; ADVANCE, 2008; Gaede, 2008; Holman 2008a; Vadt, 2008*	

Supplemental Information

For patients with T2DM, an A1c goal of less than 8% may be more appropriate than an A1c goal of less than 7%, when including the following factors:

- Known cardiovascular disease or high cardiovascular risk, and may be determined by the Framingham or ACC/AHA Cardiovascular Risk Calculator, or alternatively as having two or more cardiovascular risks (BMI > 30, hypertension, dyslipidemia, smoking and microalbuminuria)

- Inability to recognize and treat hypoglycemia, including a history of severe hypoglycemia requiring assistance
- Inability to comply with standard goals, such as polypharmacy issues
- Limited life expectancy or estimated survival of less than 10 years.
- Cognitive impairment.
- Extensive comorbid conditions such as renal failure, liver failure and end-stage disease complications.

A multifactorial approach to diabetes care that includes emphasis on blood pressure, lipids, glucose, aspirin use and non-use of tobacco will maximize health outcomes far more than a strategy that is limited to just one or two of these clinical domains *(American Diabetes Association, 2014; Duckworth, 2009; Gaede, 2008; Holman, 2008a)*.

Multifactorial approach

The benefits of a multifactorial approach to diabetes care are supported by the results of the Steno-2 Study of 160 patients with T2DM and microalbuminuria. Multifactorial interventions achieved a 50% reduction in mortality and significant reduction in microvascular complications five years after ending a 7.8-year multifactorial intervention that achieved A1c of 7.8%, low-density lipoprotein 83 mg/dL, blood pressure 131/73, compared to a conventional group that achieved A1c 9%, low-density lipoprotein 126 mg/ dL and blood pressure 146/78 *(Gaede, 2008)*. Results of this study are consistent with the need for reasonable blood glucose control with emphasis on blood pressure and lipid management.

Microvascular/macrovascular complications

Follow-up data from the United Kingdom Prospective Diabetes Study of newly diagnosed patients with T2DM confirm major macrovascular and microvascular benefits of achieving A1c in the 7.1 to 7.3% range, versus A1c of about 8% in the comparison groups *(Holman, 2008a)*. The United Kingdom Prospective Diabetes Study main trial included 3,867 newly diagnosed T2DM patients and showed over a 10-year period a 25% decrease in microvascular outcomes with a policy using insulin and sulfonylureas that achieved a median A1c of 7.1%, compared to 7.9%. A subgroup of obese patients (n=1,704) treated with metformin and achieving a median A1c of 7.3% showed greater advantages over conventional treatment: a 32% reduction of diabetes-related end points (P=0.002), a 42% reduction of diabetes-related deaths (P=0.017), and a 36% reduction of all-cause mortality (P=0.011) *(UK Prospective Diabetes Study Group, 1998b)*.

Several reported clinical trials have evaluated the impact of A1c less than 7% on macrovascular and micro- vascular complications of T2DM. These studies – the Action to Control Cardiovascular Risk in Diabetes (ACCORD), the Action in Diabetes and Vascular Disease: Preferax and Diamcron Modified Release Controlled Evaluation (ADVANCE), and VADT Trials – are the first that have ever achieved and maintained A1c less than 7% in his/her intensive treatment patients.

Cardiovascular risk

In the ACCORD Trial, excess mortality in the intensive group (A1c mean 6.4% vs. standard group A1c 7.5%) forced the safety board to discontinue the intensive treatment arm earlier than planned *(Action to Control Cardiovascular Risk in Diabetes Study Group, The, 2008)*. There was one excess death for every 90 patients in the intensive group over a 3.5-year period of time. In the ADVANCE trial, intensive group patients achieved A1c 6.5% (vs. 7.5% in standard group) but had no reduction in cardiovascular complications or events. In the VADT trial, intensive group patients achieved A1c of 6.9% but had no significant reduction in cardiovascular events or microvascular complications compared to standard group patients who achieved A1c of 8.4%. However, the VADT Trial was underpowered for its main hypothesis tests *(Duckworth, 2009)*. In the ADVANCE trial, intensive group patients had less progression to proteinuria (one less patient advancing to proteinuria for every 100 people in the intensive group over a five-year period of time), but no fewer eye complications in the intensive group than in the standard group. ACCORD analysis showed lower rates of early stage microvascular complications in the intensively treated group. Some patients, especially those with little comorbidity and long life expectancy, may benefit from more intensive glycemic goals as long as hypoglycemia does not become a barrier. However, the risk of lower glycemic targets may outweigh the potential benefits on microvascular complications for many patients *(ACCORD, 2010b; Ismail-Beigi, 2010)*.

A meta-analysis analyzed five randomized controlled trials (UKPDS, PROactive, ADVANCE, VADT and ACCORD) for the effect of intensive glucose control on cardiovascular outcomes. Overall, this meta-analysis concluded that more intensive glucose control significantly reduced non-fatal myocardial infarct events and coronary heart disease events (non-fatal myocardial infarct and all-cardiac mortality) with no evidence of either a benefit or adverse effect on all-cause mortality. Heterogeneity among studies was noted with regard to all-cause mortality, suggesting that the impact of glycemic reduction on all-cause mortality may differ among different populations *(Ray, 2009)*. A subset analysis from ACCORD, ADVANCE and VADT suggested that intensive glucose lowering has a modest (9%) but statistically significant reduction in major CVD outcomes, primarily non-fatal MI, with no significant effect on mortality. However, a pre-specified subgroup analysis suggested that major cardiovascular disease outcome reduction occurred in patients without known cardiovascular disease at baseline *(Turnbull, 2009)*.

1a.4.3. Grade assigned to the quoted recommendation with definition of the grade:

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Quality of Evidence: High
Strength of Recommendation: Strong

High Quality of Evidence

- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation

- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

1a.4.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: If separate grades for the strength of the evidence, report them in section 1a.7.*)

ICSI uses GRADE methodology and definitions are located within the URL cited in 1a.4.1. More details about the GRADE method are indicated in 1a.4.5. with URL provided.

1a.4.5. Citation and URL for methodology for grading recommendations (*if different from 1a.4.1*)**:**
ICSI GRADE Methodology: https://www.icsi.org/_asset/7mtqyr/ReviewingEvidenceUsingGRADE.pdf

1a.4.6. If guideline is evidence-based (rather than expert opinion), are the details of the quantity, quality, and consistency of the body of evidence available (e.g., evidence tables)?

☒ Yes → ***complete section 1a.7***
☐ No → ***report on another systematic review of the evidence in sections 1a.6 and 1a.7; if another review does not exist, provide what is known from the guideline review of evidence in 1a.7***

1a.5. UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION
1a.5.1. Recommendation citation (*including date*) and **URL for recommendation** (*if available online*):

1a.5.2. Identify recommendation number and/or page number and **quote verbatim, the specific recommendation**.

1a.5.3. Grade assigned to the quoted recommendation <u>with definition</u> of the grade:

1a.5.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: the grading system for the evidence should be reported in section 1a.7.*)

1a.5.5. Citation and URL for methodology for grading recommendations (*if different from 1a.5.1*)**:**

Complete section 1a.7

1a.6. OTHER SYSTEMATIC REVIEW OF THE BODY OF EVIDENCE

1a.6.1. Citation (*including date*) and **URL** (*if available online*):

1a.6.2. Citation and URL for methodology for evidence review and grading (*if different from 1a.6.1*)**:**

Complete section 1a.7

1a.7. FINDINGS FROM SYSTEMATIC REVIEW OF BODY OF THE EVIDENCE SUPPORTING THE MEASURE

If more than one systematic review of the evidence is identified above, you may choose to summarize the one (or more) for which the best information is available to provide a summary of the quantity, quality, and consistency of the body of evidence. Be sure to identify which review is the basis of the responses in this section and if more than one, provide a separate response for each review.

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014

4. Glycemic Control and A1c Goals

Recommendation	Quality of Evidence and Strength of Recommendation
A clinician should personalize goals with patients diagnosed with T2DM to achieve glycemic control with a hemoglobin A1c < 7% to < 8% depending on individual patient factors.	Quality of Evidence: High Strength of Recommendation: Strong
Benefits: Achieving near-normal glycemic control lowers risk of diabetes microvascular complications such as retinopathy, nephropathy and amputations. Achieving A1c of 6.9 to 7.9% may also significantly reduce macrovascular complications based on Steno-2 and UKPDS data. **Harms:** Near-normal glycemic control (A1c around 6.4 to 6.5%) achieved through intensive pharmacotherapy appears to have less benefit for major CV events (ACCORD ADVANCE VADT) and in one large trial significantly increased mortality 20% (ACCORD). In some patients, aggressive pharmacotherapy with insulin, sulfonylureas or certain other agents may lead to weight gain and severe hypoglycemia. The long-term cardiovascular safety of agents other than metformin and human insulins has yet to be established. **Benefits-Harms Assessment:** Therefore, to optimize the balance between benefits and harms for a given patient, personalization of glycated hemoglobin (A1c) goals in the range of < 7% to < 8% is recommended.	
Relevant Resources: *Hemmingsen, 2013; Callaghan, 2012; Action to Control Cardiovascular Risk in Diabetes Study Group 2008, 2011; ACCORD, 2010b; Ismail-Beigi, 2010; Duckworth, 2009; NICE – Sugar Study Investigators, The, 2009; Ray, 2009; Turnbull, 2009; ADVANCE, 2008; Gaede, 2008; Holman 2008a; Vadt, 2008*	

1a.7.1. What was the specific structure, treatment, intervention, service, or intermediate outcome addressed in the evidence review?

Glycemic control with a target of less than 8.0 for all patients. Note there is room for individualization of a lower A1c goal based on individual patient risks, but for measurement and accountability purposes a target of less than 8.0 is appropriate for denominator patients included in this measure.

1a.7.2. Grade assigned for the quality of the quoted evidence with definition of the grade:

Quality of Evidence: High
Strength of Recommendation: Strong

High Quality of Evidence
- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation
- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

1a.7.3. Provide all other grades and associated definitions for strength of the evidence in the grading system.

1a.7.4. What is the time period covered by the body of evidence? (*provide the date range, e.g., 1990-2010*). Date range: 2008 to 2013

QUANTITY AND QUALITY OF BODY OF EVIDENCE

1a.7.5. How many and what type of study designs are included in the body of evidence? (*e.g., 3 randomized controlled trials and 1 observational study*)

Randomized control trial - 14
Systematic review – 1

1a.7.6. What is the overall quality of evidence across studies in the body of evidence? (*discuss the certainty or confidence in the estimates of effect particularly in relation to study factors such as design flaws, imprecision due to small numbers, indirectness of studies to the measure focus or target population*)

Quality of Evidence: High
Strength of Recommendation: Strong
High Quality of Evidence
- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation
- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

ESTIMATES OF BENEFIT AND CONSISTENCY ACROSS STUDIES IN BODY OF EVIDENCE

1a.7.7. What are the estimates of benefit—magnitude and direction of effect on outcome(s) across studies in the body of evidence? (*e.g., ranges of percentages or odds ratios for improvement/ decline across studies, results of meta-analysis, and statistical significance*)

Benefits:
Achieving near-normal glycemic control lowers risk of diabetes microvascular complications such as retinopathy, nephropathy and amputations. Achieving A1c of 6.9 to 7.9% may also significantly reduce macrovascular complications based on Steno-2 and UKPDS data.

Follow-up data from the United Kingdom Prospective Diabetes Study of newly diagnosed patients with T2DM confirm major macrovascular and microvascular benefits of achieving A1c in the 7.1 to 7.3% range, versus A1c of about 8% in the comparison groups *(Holman, 2008a)*. The United Kingdom Prospective Diabetes Study main trial included 3,867 newly diagnosed T2DM patients and showed over a 10-year period a 25% decrease in microvascular outcomes with a policy using insulin and sulfonylureas that achieved a median A1c of 7.1%, compared to 7.9%. A subgroup of obese patients (n=1,704) treated with metformin and achieving a median A1c of 7.3% showed greater advantages over conventional treatment: a 32% reduction of diabetes-related end points (P=0.002), a 42% reduction of diabetes-related deaths (P=0.017), and a 36% reduction of all-cause mortality (P=0.011) *(UK Prospective Diabetes Study Group, 1998b)*.

1a.7.8. What harms were studied and how do they affect the net benefit (benefits over harms)?
Harms:
Near-normal glycemic control (A1c around 6.4 to 6.5%) achieved through intensive pharmacotherapy appears to have less benefit for major CV events (ACCORD ADVANCE VADT) and in one large trial significantly increased mortality 20% (ACCORD). In some patients, aggressive pharmacotherapy with insulin, sulfonylureas or certain other agents may lead to weight gain and severe hypoglycemia. The long-term cardiovascular safety of agents other than metformin and human insulins has yet to be established.

Benefits-Harms Assessment:
Therefore, to optimize the balance between benefits and harms for a given patient, personalization of glycated hemoglobin (A1c) goals in the range of < 7% to < 8% is recommended.

UPDATE TO THE SYSTEMATIC REVIEW(S) OF THE BODY OF EVIDENCE

1a.7.9. If new studies have been conducted since the systematic review of the body of evidence, provide for <u>each</u> new study: 1) citation, 2) description, 3) results, 4) impact on conclusions of systematic review.

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1a.8 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

1a.8.1 What process was used to identify the evidence?

1a.8.2. Provide the citation and summary for each piece of evidence.

NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Component # 2 Blood Pressure
Measure Number (*if previously endorsed*)**:** #0729
Measure Title: Optimal Diabetes Care- BP Control Component
IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here: Optimal Diabetes Care

Date of Submission: 12/3/2014

Instructions

- *For composite performance measures:*
  - *A separate evidence form is required for each component measure unless several components were studied together.*
  - *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*
- Respond to all questions as instructed with answers immediately following the question. All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Maximum of 10 pages (*incudes questions/instructions*; minimum font size 11 pt; do not change margins). ***Contact NQF staff if more pages are needed.***
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.

Note: The information provided in this form is intended to aid the Steering Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF's evaluation criteria.

1a. Evidence to Support the Measure Focus
The measure focus is evidence-based, demonstrated as follows:

- Health outcome: [3] a rationale supports the relationship of the health outcome to processes or structures of care. Applies to patient-reported outcomes (PRO), including health-related quality of life/functional status, symptom/symptom burden, experience with care, health-related behavior.
- Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured intermediate clinical outcome leads to a desired health outcome.
- Process: [5] a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured process leads to a desired health outcome.
- Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured structure leads to a desired health outcome.
- Efficiency: [6] evidence not required for the resource use component.

Notes
3. Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.
4. The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) grading definitions and methods, or Grading of Recommendations, Assessment, Development and Evaluation (GRADE) guidelines.
5. 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 multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.
6. Measures of efficiency combine the concepts of resource use and quality (see NQF's Measurement Framework: Evaluating Efficiency Across Episodes of Care; AQA Principles of Efficiency Measures).

1a.1.This is a measure of: (*should be consistent with type of measure entered in De.1*)
Outcome

- ☐ Health outcome: Click here to name the health outcome
- ☐Patient-reported outcome (PRO): Click here to name the PRO
  PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors
- ☒ Intermediate clinical outcome (*e.g., lab value*): Blood pressure is less than 140 systolic AND less than 90 diastolic

☐ Process: Click here to name the process
☐ Structure: Click here to name the structure
☐ Other: Click here to name what is being measured

_____

HEALTH OUTCOME/PRO PERFORMANCE MEASURE *If not a health outcome or PRO, skip to 1a.3*

1a.2. Briefly state or diagram the path between the health outcome (or PRO) and the healthcare structures, processes, interventions, or services that influence it.

1a.2.1. State the rationale supporting the relationship between the health outcome (or PRO) to at least one healthcare structure, process, intervention, or service (*i.e., influence on outcome/PRO*).

Note: For health outcome/PRO performance measures, no further information is required; however, you may provide evidence for any of the structures, processes, interventions, or service identified above.

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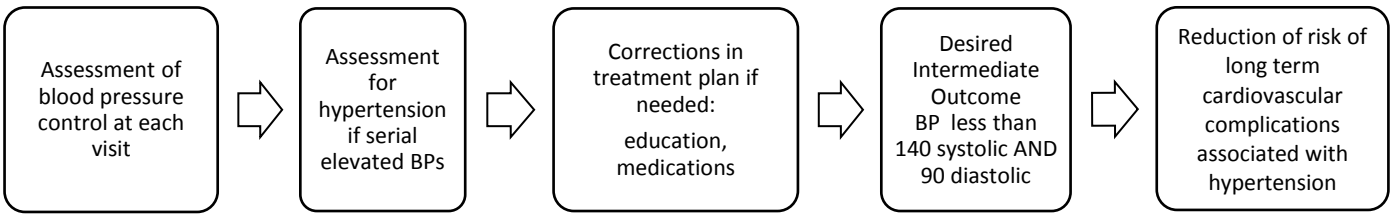
INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURE

1a.3. Briefly state or diagram the path between structure, process, intermediate outcome, and health outcomes. Include all the steps between the measure focus and the health outcome.



1a.3.1. What is the source of the systematic review of the body of evidence that supports the performance measure?

☒ Clinical Practice Guideline recommendation – ***complete sections 1a.4, and 1a.7***
☐ US Preventive Services Task Force Recommendation – ***complete sections 1a.5 and 1a.7***
☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*) – ***complete sections 1a.6 and 1a.7***
☐ Other – ***complete section 1a.8***

Please complete the sections indicated above for the source of evidence. You may skip the sections that do not apply.

1a.4. CLINICAL PRACTICE GUIDELINE RECOMMENDATION

1a.4.1. Guideline citation (*including date*) and **URL for guideline** (*if available online*):

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Redmon B, Caccamo D, Flavin P, Michels R, Myers C, O'Connor P, Roberts J, Setterlund L, Smith S, Sperl-Hillen J. Institute for Clinical Systems Improvement. Diagnosis and Management of Type 2 Diabetes Mellitus in Adults. Updated July 2014.

https://www.icsi.org/guidelines__more/catalog_guidelines_and_more/catalog_guidelines/catalog_endocrine_guidelines/diabetes/

1a.4.2. Identify guideline recommendation number and/or page number and **quote verbatim, the specific guideline recommendation**.

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014 pg. 33

Algorithm Annotation # 7.1- Antihypertensive Therapy

7. Cardiovascular Risk Factors

7.1 Antihypertensive Therapy

Recommendation	Quality of Evidence and Strength of Recommendation
A clinician should initiate antihypertensive treatment for patients with T2DM with a blood pressure ≥ 140/90 mmHG and treat to a goal of < 140/90.	Quality of Evidence: High Strength of Recommendation: Strong
Benefits: Uncontrolled hypertension is a major risk factor for ASVCD events. Multiple large studies (UKPDS, HOT, ADVANCE) have shown improved cardiovascular outcomes with treatment of blood pressure to this range in patients with diabetes. **Harms:** In many patients with diabetes, two or three or more medications are required to achieve this level of blood pressure control. Medications may be costly, and there are risks of adverse reactions, medication interactions and overtreatment causing hypotension. **Benefits-Harms Assessment:** Considering the high level of ASCVD risk and the significant benefits for primary and secondary prevention of cardiovascular events in treating hypertension, along with the low cost generic status of the vast majority of antihypertensive medications, it is believed that the benefits of treating hypertension to this goal outweigh the risks. Careful attention should be given to monitoring for side effects, medication interactions and avoiding overtreatment.	
Relevant Resources: *Arguedas, 2013; Bangalore, 2011; Nilsson, 2011; ACCORD Study Group, 2010a; ADVANCE Collaborative Group, 2008; Howard, 2008; Estacio, 2006; Wing, 2003; ALLHAT, 2002; UKPDS, 1998; Hansson, 1998*	

Supplemental Information

Uncontrolled hypertension is a major cardiovascular risk factor that also accelerates the progression of diabetic nephropathy *(Morrish, 1991)*. When hypertension is identified, it should be aggressively treated to achieve a target blood pressure of less than 140/90 mmHg. In many patients with diabetes, two or three or more antihypertensive agents may be needed to achieve this goal. The use of generic combination tablets (such as ACE plus calcium-channel blocker or beta-blocker plus diuretic) can reduce the complexity of the regimen and out-of-pocket costs.

The UKPDS, HOT, ADVANCE and ACCORD trials are all large randomized clinical trials that allow comparison of more stringent to less stringent blood pressure levels on major cardiovascular outcomes *(ACCORD Study Group, The, 2010a; ADVANCE Collaborative Group, 2008; Hansson, 1998; United Kingdom Prospective Diabetes Study Group [UKPDS], 1993e)*. The UKPDS, HOT and ADVANCE trials all found reduced cardiovascular outcomes with

lower achieved blood pressure levels. However, none of these trials achieved average systolic blood pressure levels below 130 mmHg (Table 2). The ACCORD trial found no difference in major cardiovascular outcomes between a more intensive blood pressure intervention targeting systolic blood pressure < 120 mmHg compared to a more standard intervention targeting systolic blood pressure between 130 and 139 mmHg (Table 2). The more intensive blood pressure regimen was associated with a small reduction in the rate of stroke, greater medication use and more serious adverse events *(ACCORD Study Group, The, 2010a)*.

The above studies support a systolic blood pressure goal < 140 mmHg for people with T2DM. We would estimate that targeting a systolic blood pressure < 140 mmHg would result in an achieved blood pressure around 135 mmHg for most people.

Only the HOT trial specifically targeted diastolic blood pressure. In the HOT trial, targeting a lower diastolic blood pressure was associated with fewer cardiovascular events in subjects with T2DM. The average achieved diastolic blood pressure values in the three HOT intervention arms ranged from 81-85 mmHg (Table 2). Based on results from the ADVANCE and ACCORD trials, it appears likely that achieved systolic blood pressure values in the mid-130 range will be associated with diastolic blood pressure values well below 80 mmHg.

The general recommendation from The 2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults: Report From the Panel Members Appointed to the Eighth Joint National Committee (JNC 8) to treat to a goal of a blood pressure < 140/90 mmHg does not preclude setting individual patient goals lower than that based on patient characteristics, comorbidities, risks or the preference of an informed patient *(James, 2014)*.

Table 2. Comparison of Goal to Mean Achieved Blood Pressure Levels in Randomized Trials of Blood Pressure Control in People with Type 2 Diabetes

	UKPDS		HOT			ADVANCE		ACCORD	
	Intensive	Control	DBP			Treat	Placebo	Intensive	Standard
Goal	< 150/85	< 180/105	≤ 80	≤ 85	≤ 90	----	----	SBP ≤ 120	SBP 130-139
Achieved	144/82	154/87	140/81	141/83	144/85	134/75	144/77	119/69	133/70

While ACE inhibitors and ARBs are preferred first-line therapy, two or more agents (to include thiazide diuretics) may be required. For patients with T2DM, thiazide diuretics in the treatment of hypertension may reduce cardiovascular events, particularly heart failure *(Chobanian, 2003; Wing, 2003; ALLHAT Officers and Coordinators for the ALLHAT Collaborative Research Group, 2002; Heart Outcomes Prevention Evaluation Study Investigators, The, 2000a; Alkaharouf, 1993; Lewis, 1993)*.

1a.4.3. Grade assigned to the quoted recommendation with definition of the grade:

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Quality of Evidence: High
Strength of Recommendation: Strong

High Quality of Evidence

- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation

- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

1a.4.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: If separate grades for the strength of the evidence, report them in section 1a.7.*)

ICSI uses GRADE methodology and definitions are located within the URL cited in 1a.4.1. More details about the GRADE method are indicated in 1a.4.5. with URL provided.

1a.4.5. Citation and URL for methodology for grading recommendations (*if different from 1a.4.1*)**:**
ICSI GRADE Methodology: https://www.icsi.org/_asset/7mtqyr/ReviewingEvidenceUsingGRADE.pdf

1a.4.6. If guideline is evidence-based (rather than expert opinion), are the details of the quantity, quality, and consistency of the body of evidence available (e.g., evidence tables)?

☒ Yes → ***complete section 1a.7***

☐ No → ***report on another systematic review of the evidence in sections 1a.6 and 1a.7; if another review does not exist, provide what is known from the guideline review of evidence in 1a.7***

1a.5. UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION

1a.5.1. Recommendation citation (*including date*) and **URL for recommendation** (*if available online*):

1a.5.2. Identify recommendation number and/or page number and **quote verbatim, the specific recommendation**.

1a.5.3. Grade assigned to the quoted recommendation with definition of the grade:

1a.5.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: the grading system for the evidence should be reported in section 1a.7.*)

1a.5.5. Citation and URL for methodology for grading recommendations (*if different from 1a.5.1*)**:**

Complete section 1a.7

1a.6. OTHER SYSTEMATIC REVIEW OF THE BODY OF EVIDENCE

1a.6.1. Citation (*including date*) and **URL** (*if available online*):

1a.6.2. Citation and URL for methodology for evidence review and grading (*if different from 1a.6.1*)**:**

Complete section 1a.7

1a.7. FINDINGS FROM SYSTEMATIC REVIEW OF BODY OF THE EVIDENCE SUPPORTING THE MEASURE

If more than one systematic review of the evidence is identified above, you may choose to summarize the one (or more) for which the best information is available to provide a summary of the quantity, quality,

and consistency of the body of evidence. Be sure to identify which review is the basis of the responses in this section and if more than one, provide a separate response for each review.

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014

7. Cardiovascular Risk Factors

7.1 Antihypertensive Therapy

Recommendation	Quality of Evidence and Strength of Recommendation
A clinician should initiate antihypertensive treatment for patients with T2DM with a blood pressure ≥ 140/90 mmHG and treat to a goal of < 140/90.	Quality of Evidence: High Strength of Recommendation: Strong
Benefits: Uncontrolled hypertension is a major risk factor for ASVCD events. Multiple large studies (UKPDS, HOT, ADVANCE) have shown improved cardiovascular outcomes with treatment of blood pressure to this range in patients with diabetes. **Harms:** In many patients with diabetes, two or three or more medications are required to achieve this level of blood pressure control. Medications may be costly, and there are risks of adverse reactions, medication interactions and overtreatment causing hypotension. **Benefits-Harms Assessment:** Considering the high level of ASCVD risk and the significant benefits for primary and secondary prevention of cardiovascular events in treating hypertension, along with the low cost generic status of the vast majority of antihypertensive medications, it is believed that the benefits of treating hypertension to this goal outweigh the risks. Careful attention should be given to monitoring for side effects, medication interactions and avoiding overtreatment.	
Relevant Resources: *Arguedas, 2013; Bangalore, 2011; Nilsson, 2011; ACCORD Study Group, 2010a; ADVANCE Collaborative Group, 2008; Howard, 2008; Estacio, 2006; Wing, 2003; ALLHAT, 2002; UKPDS, 1998; Hansson, 1998*	

1a.7.1. What was the specific structure, treatment, intervention, service, or intermediate outcome addressed in the evidence review?

Blood pressure control with a target of less than 140 systolic AND less than 90 diastolic.

1a.7.2. Grade assigned for the quality of the quoted evidence <u>with definition</u> of the grade:

Quality of Evidence: High
Strength of Recommendation: Strong

High Quality of Evidence

- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation

- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

1a.7.3. Provide all other grades and associated definitions for strength of the evidence in the grading system.

1a.7.4. What is the time period covered by the body of evidence? (*provide the date range, e.g., 1990-2010*). Date range: 1998 to 2013

QUANTITY AND QUALITY OF BODY OF EVIDENCE

1a.7.5. How many and what type of study designs are included in the body of evidence? (*e.g., 3 randomized controlled trials and 1 observational study*)

Randomized control trial – 6
Systematic review – 2
Meta-analysis of RCT's- 1
Cohort study- 1

1a.7.6. What is the overall quality of evidence <u>across studies</u> in the body of evidence? (*discuss the certainty or confidence in the estimates of effect particularly in relation to study factors such as design flaws, imprecision due to small numbers, indirectness of studies to the measure focus or target population*)

Quality of Evidence: High
Strength of Recommendation: Strong
High Quality of Evidence

- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation

- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

ESTIMATES OF BENEFIT AND CONSISTENCY ACROSS STUDIES IN BODY OF EVIDENCE

1a.7.7. What are the estimates of benefit—magnitude and direction of effect on outcome(s) <u>across studies</u> in the body of evidence? (*e.g., ranges of percentages or odds ratios for improvement/ decline across studies, results of meta-analysis, and statistical significance*)

Benefits:
Uncontrolled hypertension is a major risk factor for ASVCD events. Multiple large studies (UKPDS, HOT, ADVANCE) have shown improved cardiovascular outcomes with treatment of blood pressure to this range in patients with diabetes.

The UKPDS, HOT, ADVANCE and ACCORD trials are all large randomized clinical trials that allow comparison of more stringent to less stringent blood pressure levels on major cardiovascular outcomes (ACCORD Study Group, The, 2010a; ADVANCE Collaborative Group, 2008; Hansson, 1998; United Kingdom Prospective Diabetes Study Group [UKPDS], 1993e). The UKPDS, HOT and ADVANCE trials all found reduced cardiovascular outcomes with lower achieved blood pressure levels. However, none of these trials achieved average systolic blood pressure levels below 130 mmHg (Table 2). The ACCORD trial found no difference in major cardiovascular outcomes between a more intensive blood pressure intervention targeting systolic blood pressure < 120 mmHg compared to a more standard intervention targeting systolic blood pressure between 130 and 139 mmHg (Table 2). The more intensive blood pressure regimen was associated with a small reduction in the rate of stroke, greater medication use and more serious adverse events (ACCORD Study Group, The, 2010a).

The general recommendation from The 2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults: Report From the Panel Members Appointed to the Eighth Joint National Committee (JNC 8) to treat to a goal of a blood pressure < 140/90 mmHg does not preclude setting individual patient goals lower than that based on patient characteristics, comorbidities, risks or the preference of an informed patient (James, 2014).

1a.7.8. What harms were studied and how do they affect the net benefit (benefits over harms)?

Harms:
In many patients with diabetes, two or three or more medications are required to achieve this level of blood pressure control. Medications may be costly, and there are risks of adverse reactions, medication interactions and overtreatment causing hypotension.

Benefits-Harms Assessment:
Considering the high level of ASCVD risk and the significant benefits for primary and secondary prevention of cardiovascular events in treating hypertension, along with the low cost generic status of the vast majority of antihypertensive medications, it is believed that the benefits of treating hypertension to this goal outweigh the risks. Careful attention should be given to monitoring for side effects, medication interactions and avoiding overtreatment.

UPDATE TO THE SYSTEMATIC REVIEW(S) OF THE BODY OF EVIDENCE

1a.7.9. If new studies have been conducted since the systematic review of the body of evidence, provide for <u>each</u> new study: 1) citation, 2) description, 3) results, 4) impact on conclusions of systematic review.

_____

1a.8 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

1a.8.1 What process was used to identify the evidence?

1a.8.2. Provide the citation and summary for each piece of evidence.

NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Component # 3 Cholesterol Statin Use
Measure Number (*if previously endorsed*)**:** #0729
Measure Title: Optimal Diabetes Care- Cholesterol Statin Use Component
IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here: Optimal Diabetes Care

Date of Submission: 12/3/2014

Instructions

- *For composite performance measures:*
  - *A separate evidence form is required for each component measure unless several components were studied together.*
  - *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*
- Respond to all questions as instructed with answers immediately following the question. All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Maximum of 10 pages (*incudes questions/instructions*; minimum font size 11 pt; do not change margins). ***Contact NQF staff if more pages are needed.***
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.

Note: The information provided in this form is intended to aid the Steering Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF's evaluation criteria.

1a. Evidence to Support the Measure Focus
The measure focus is evidence-based, demonstrated as follows:

- Health outcome: [3] a rationale supports the relationship of the health outcome to processes or structures of care. Applies to patient-reported outcomes (PRO), including health-related quality of life/functional status, symptom/symptom burden, experience with care, health-related behavior.
- Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured intermediate clinical outcome leads to a desired health outcome.
- Process: [5] a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured process leads to a desired health outcome.
- Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured structure leads to a desired health outcome.
- Efficiency: [6] evidence not required for the resource use component.

Notes
3. Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.
4. The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) grading definitions and methods, or Grading of Recommendations, Assessment, Development and Evaluation (GRADE) guidelines.
5. 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 multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.
6. Measures of efficiency combine the concepts of resource use and quality (see NQF's Measurement Framework: Evaluating Efficiency Across Episodes of Care; AQA Principles of Efficiency Measures).

1a.1.This is a measure of: (*should be consistent with type of measure entered in De.1*)
Outcome

- ☐ Health outcome: Click here to name the health outcome
- ☐Patient-reported outcome (PRO): Click here to name the PRO
  PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors
- ☒ Intermediate clinical outcome (*e.g., lab value*): Appropriate statin use for patients with diabetes (based on age, presence of ischemic vascular disease or LDL level greater than 190).

☐ Process: Click here to name the process
☐ Structure: Click here to name the structure
☐ Other: Click here to name what is being measured

_____

HEALTH OUTCOME/PRO PERFORMANCE MEASURE *If not a health outcome or PRO, skip to 1a.3*

1a.2. Briefly state or diagram the path between the health outcome (or PRO) and the healthcare structures, processes, interventions, or services that influence it.

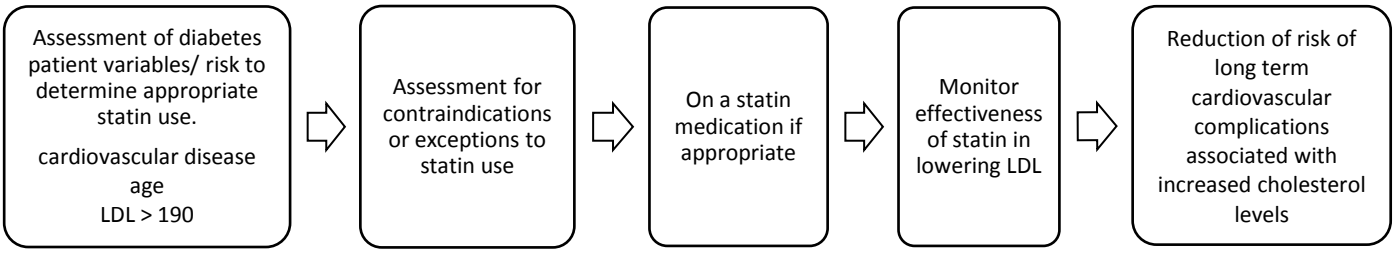
1a.2.1. State the rationale supporting the relationship between the health outcome (or PRO) to at least one healthcare structure, process, intervention, or service (*i.e., influence on outcome/PRO*).

Note: For health outcome/PRO performance measures, no further information is required; however, you may provide evidence for any of the structures, processes, interventions, or service identified above.

_____

INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURE

1a.3. Briefly state or diagram the path between structure, process, intermediate outcome, and health outcomes. Include all the steps between the measure focus and the health outcome.



1a.3.1. What is the source of the systematic review of the body of evidence that supports the performance measure?

☒ Clinical Practice Guideline recommendation – ***complete sections 1a.4, and 1a.7***
☐ US Preventive Services Task Force Recommendation – ***complete sections 1a.5 and 1a.7***
☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*) – ***complete sections 1a.6 and 1a.7***
☐ Other – ***complete section 1a.8***

Please complete the sections indicated above for the source of evidence. You may skip the sections that do not apply.

1a.4. CLINICAL PRACTICE GUIDELINE RECOMMENDATION

1a.4.1. Guideline citation (*including date*) and **URL for guideline** (*if available online*):

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Redmon B, Caccamo D, Flavin P, Michels R, Myers C, O'Connor P, Roberts J, Setterlund L, Smith S, Sperl-Hillen J. Institute for Clinical Systems Improvement. Diagnosis and Management of Type 2 Diabetes Mellitus in Adults. Updated July 2014.

https://www.icsi.org/guidelines__more/catalog_guidelines_and_more/catalog_guidelines/catalog_endocrine_guidelines/diabetes/

American College of Cardiology/ American Heart Association
Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults. November 2013
http://circ.ahajournals.org/content/early/2013/11/11/01.cir.0000437738.63853.7a.full.pdf

1a.4.2. Identify guideline recommendation number and/or page number and **quote verbatim, the specific guideline recommendation**.

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014 pg. 35

Algorithm Annotation # 7.2- Statin Therapy (High Risk)

7.2 Statin Therapy (High Risk)

Recommendation	Quality of Evidence and Strength of Recommendation
(A) A clinician should recommend high-intensity statin therapy for patients diagnosed with T2DM, between the ages of 40-75 with established ASCVD (strong), and (B) may recommend high-intensity statin therapy for others at a 10-year ASCVD risk ≥ 7.5% (weak).	Quality of Evidence: High Strength of Recommendation: Strong/Weak
Benefits: A high-intensity statin reduces the relative risk of ASCVD events more than moderate-intensity statin in patients with and without diabetes, and in primary and secondary prevention in those with diabetes. **Harms:** Serious adverse events such as myopathy and rhabdomyolysis are rare, but patient characteristics that may influence statin safety and be cause for not recommending high-intensity statin therapy include multiple concomitant comorbidities, impaired renal or hepatic function, a history of previous statin intolerance or muscle disorders, concomitant use of drugs known to affect statin metabolism, a history of hemorrhagic stroke and age > 75. **Benefits-Harms Assessment:** The benefits of high-intensity statin therapy for patients with diabetes and high ASCVD risk usually outweigh potential harm, but side effects and individual patient characteristics that predispose patients to statin toxicity can influence the risk/harm balance. Patient preference should be included in decision-making.	
Relevant Resources: *Taylor, 2013; CTT, 2010; Cannon, 2004; Heart Protection Study Collaboration Group, 2002*	

Algorithm Annotation # 7.3- Statin Therapy (Moderate Risk)

7.3 Statin Therapy (Moderate Risk)

Recommendation	Quality of Evidence and Strength of Recommendation
A clinician should recommend moderate- or high-intensity statin therapy for all patients diagnosed with T2DM between the ages of 40-75 with a LDL ≥ 70 mg/dL.	Quality of Evidence: High Strength of Recommendation: Strong
Benefits: The use of at least moderate-intensity statin therapy in persons of this age and an elevated LDL level with a diagnosis of diabetes has been shown to be effective. The only trial of high-intensity therapy in primary prevention was performed in a population without diabetes. High-intensity statin therapy reduces the relative risk of ASCVD events more than moderate-intensity statin therapy in patients with ASCVD. Because individuals with diabetes are at substantially increased lifetime risk for ASCVD events and death, similar to those who have had a previous ASCVD event, persons with diabetes with high estimated 10-year ASCVD risk are likely to benefit similarly from high-intensity therapy. **Harms:** Statin therapy appears to cause only a slight increased risk of side effects compared to placebo, and no increased risk of discontinuation of therapy compared to placebo. In clinical practice, the most common side effect observed is muscle symptoms. Some patients who have muscle symptoms can tolerate lower statin doses, changes in statin drugs or alternate-day dosing. Known statin associated serious adverse effects include rare cases of myopathy, hemorrhagic stroke and drug-drug interactions. There are insufficient data to support benefits in individuals with NYHA class II-IV heart failure and individuals undergoing maintenance hemodialysis. Preferences of patients who understand the risks and benefits of statin use should be accounted for, as the potential benefit (especially for primary prevention) may not outweigh the inconvenience and cost of a long-term daily medication with possible side effects for some people. **Benefits-Harms Assessment:** Given the high prevalence of macrovascular disease in those with diabetes and the cardiovascular benefit of statins clearly exceeds the risk of adverse events and modest cost for most patients with T2DM ages 40-75. Intensifying statin therapy should be discussed with the patient in a shared decision-making conversation including the risks and benefits. Patients with characteristics that might be predispose them to statin side effects may be candidates for lower intensity statin dosing.	
Relevant Resources: *Taylor, 2013; Macchia, 2012; AIM High, 2011; ACCORD Study Group, 2010a; CTT, 2010; CTT, 2008; Heart Protection Study, 2005; Cannon, 2004; Heart Protection Study Collaborative Group, 2002*	

American College of Cardiology/ American Heart Association
Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults. Pg. 23

4. Statin Treatment: Recommendations

Recommendations	NHLBI Grade	NHLBI Evidence Statements	ACC/AHA COR	ACC/AHA LOE
Primary Prevention in Individuals With Diabetes Mellitus and LDL–C 70-189 mg/dL				
1. Moderate-intensity statin therapy should be initiated or continued for adults 40 to 75 years of age with diabetes mellitus.	A (Strong)	19, 29-34, 40	I	A
2. High-intensity statin therapy is reasonable for adults 40 to 75 years of age with diabetes mellitus with a ≥7.5% estimated 10-year ASCVD risk unless contraindicated.	E (Expert Opinion)	---	IIa	B (49,52)
3. In adults with diabetes mellitus, who are <40 or >75 years of age, it is reasonable to evaluate the potential for ASCVD benefits and for adverse effects, for drug-drug interactions, and to consider patient preferences when deciding to initiate, continue, or intensify statin therapy.	E (Expert Opinion)	---	IIa	C (53-62)

1a.4.3. Grade assigned to the quoted recommendation <u>with definition</u> of the grade:

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Quality of Evidence: High
Strength of Recommendation: Strong (moderate intensity dose statin), Strong/ Weak (high intensity dose statin)

High Quality of Evidence
- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation – Moderate Dose of Statin
- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

Weak Recommendation – High Dose of Statin (in relationship to risk/benefits)
- The work group recognizes that the evidence, though of high quality, shows a balance between estimates of harms and benefits. The best action will depend on local circumstances, patient values or preferences.

American College of Cardiology/ American Heart Association: Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults.
High and Moderate Quality of Evidence cited in Recommendations table for Diabetics
(5 High, 4 Moderate all related to RCTs)
High Quality of Evidence
- Well-designed, well-executed† RCTs that adequately represent populations to which the results are applied and directly assess effects on health outcomes.
- MAs of such studies.
- Highly certain about the estimate of effect. Further research is unlikely to change our confidence in the estimate of effect.

Moderate Quality of Evidence
- RCTs with minor limitations‡ affecting confidence in, or applicability of, the results.
- Well-designed, well-executed nonrandomized controlled studies§ and well designed, well-executed observational studies
- MAs of such studies.
- Moderately certain about the estimate of effect. Further research may have an impact on our confidence in the estimate of effect and may change the estimate.

A- Strong Recommendation- there is high certainty based on evidence that the net benefit is substantial.

1a.4.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: If separate grades for the strength of the evidence, report them in section 1a.7.*)

ICSI uses GRADE methodology and definitions are located within the URL cited in 1a.4.1. More details about the GRADE method are indicated in 1a.4.5. with URL provided.

ACC/ AHA A combination of NHLBI and Class of Recommendation/ Level of Evidence (COR/LOE) as outlined on page five of the guidelines contained within the URL:
http://circ.ahajournals.org/content/early/2013/11/11/01.cir.0000437738.63853.7a.full.pdf

1a.4.5. Citation and URL for methodology for grading recommendations (*if different from 1a.4.1*)**:**
ICSI GRADE Methodology: https://www.icsi.org/_asset/7mtqyr/ReviewingEvidenceUsingGRADE.pdf

1a.4.6. If guideline is evidence-based (rather than expert opinion), are the details of the quantity, quality, and consistency of the body of evidence available (e.g., evidence tables)?

☒ Yes → ***complete section 1a.7***

☐ No → ***report on another systematic review of the evidence in sections 1a.6 and 1a.7; if another review does not exist, provide what is known from the guideline review of evidence in 1a.7***

_____

1a.5. UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION

1a.5.1. Recommendation citation (*including date*) and **URL for recommendation** (*if available online*):

1a.5.2. Identify recommendation number and/or page number and **quote verbatim, the specific recommendation**.

1a.5.3. Grade assigned to the quoted recommendation with definition of the grade:

1a.5.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: the grading system for the evidence should be reported in section 1a.7.*)

1a.5.5. Citation and URL for methodology for grading recommendations (*if different from 1a.5.1*)**:**

Complete section 1a.7

_____

1a.6. OTHER SYSTEMATIC REVIEW OF THE BODY OF EVIDENCE

1a.6.1. Citation (*including date*) and **URL** (*if available online*):

1a.6.2. Citation and URL for methodology for evidence review and grading (*if different from 1a.6.1*)**:**

Complete section 1a.7

_____

1a.7. FINDINGS FROM SYSTEMATIC REVIEW OF BODY OF THE EVIDENCE SUPPORTING THE MEASURE

If more than one systematic review of the evidence is identified above, you may choose to summarize the one (or more) for which the best information is available to provide a summary of the quantity, quality, and consistency of the body of evidence. Be sure to identify which review is the basis of the responses in this section and if more than one, provide a separate response for each review.

Algorithm Annotation # 7.2- Statin Therapy (High Risk)

7.2 Statin Therapy (High Risk)

Recommendation	Quality of Evidence and Strength of Recommendation
(A) A clinician should recommend high-intensity statin therapy for patients diagnosed with T2DM, between the ages of 40-75 with established ASCVD (strong), and (B) may recommend high-intensity statin therapy for others at a 10-year ASCVD risk ≥ 7.5% (weak).	Quality of Evidence: High Strength of Recommendation: Strong/Weak
Benefits: A high-intensity statin reduces the relative risk of ASCVD events more than moderate-intensity statin in patients with and without diabetes, and in primary and secondary prevention in those with diabetes. **Harms:** Serious adverse events such as myopathy and rhabdomyolysis are rare, but patient characteristics that may influence statin safety and be cause for not recommending high-intensity statin therapy include multiple concomitant comorbidities, impaired renal or hepatic function, a history of previous statin intolerance or muscle disorders, concomitant use of drugs known to affect statin metabolism, a history of hemorrhagic stroke and age > 75. **Benefits-Harms Assessment:** The benefits of high-intensity statin therapy for patients with diabetes and high ASCVD risk usually outweigh potential harm, but side effects and individual patient characteristics that predispose patients to statin toxicity can influence the risk/harm balance. Patient preference should be included in decision-making.	
Relevant Resources: *Taylor, 2013; CTT, 2010; Cannon, 2004; Heart Protection Study Collaboration Group, 2002*	

Algorithm Annotation # 7.3- Statin Therapy (Moderate Risk)

7.3 Statin Therapy (Moderate Risk)

Recommendation	Quality of Evidence and Strength of Recommendation
A clinician should recommend moderate- or high-intensity statin therapy for all patients diagnosed with T2DM between the ages of 40-75 with a LDL ≥ 70 mg/dL.	Quality of Evidence: High Strength of Recommendation: Strong
Benefits: The use of at least moderate-intensity statin therapy in persons of this age and an elevated LDL level with a diagnosis of diabetes has been shown to be effective. The only trial of high-intensity therapy in primary prevention was performed in a population without diabetes. High-intensity statin therapy reduces the relative risk of ASCVD events more than moderate-intensity statin therapy in patients with ASCVD. Because individuals with diabetes are at substantially increased lifetime risk for ASCVD events and death, similar to those who have had a previous ASCVD event, persons with diabetes with high estimated 10-year ASCVD risk are likely to benefit similarly from high-intensity therapy. **Harms:** Statin therapy appears to cause only a slight increased risk of side effects compared to placebo, and no increased risk of discontinuation of therapy compared to placebo. In clinical practice, the most common side effect observed is muscle symptoms. Some patients who have muscle symptoms can tolerate lower statin doses, changes in statin drugs or alternate-day dosing. Known statin associated serious adverse effects include rare cases of myopathy, hemorrhagic stroke and drug-drug interactions. There are insufficient data to support benefits in individuals with NYHA class II-IV heart failure and individuals undergoing maintenance hemodialysis. Preferences of patients who understand the risks and benefits of statin use should be accounted for, as the potential benefit (especially for primary prevention) may not outweigh the inconvenience and cost of a long-term daily medication with possible side effects for some people. **Benefits-Harms Assessment:** Given the high prevalence of macrovascular disease in those with diabetes and the cardiovascular benefit of statins clearly exceeds the risk of adverse events and modest cost for most patients with T2DM ages 40-75. Intensifying statin therapy should be discussed with the patient in a shared decision-making conversation including the risks and benefits. Patients with characteristics that might be predispose them to statin side effects may be candidates for lower intensity statin dosing.	
Relevant Resources: *Taylor, 2013; Macchia, 2012; AIM High, 2011; ACCORD Study Group, 2010a; CTT, 2010; CTT, 2008; Heart Protection Study, 2005; Cannon, 2004; Heart Protection Study Collaborative Group, 2002*	

American College of Cardiology/ American Heart Association
Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults. Pg. 23

4. Statin Treatment: Recommendations

Recommendations	NHLBI Grade	NHLBI Evidence Statements	ACC/AHA COR	ACC/AHA LOE

Primary Prevention in Individuals With Diabetes Mellitus and LDL–C 70-189 mg/dL				
1. Moderate-intensity statin therapy should be initiated or continued for adults 40 to 75 years of age with diabetes mellitus.	A (Strong)	19, 29-34, 40	I	A
2. High-intensity statin therapy is reasonable for adults 40 to 75 years of age with diabetes mellitus with a ≥7.5% estimated 10-year ASCVD risk unless contraindicated.	E (Expert Opinion)	---	IIa	B (49,52)
3. In adults with diabetes mellitus, who are <40 or >75 years of age, it is reasonable to evaluate the potential for ASCVD benefits and for adverse effects, for drug-drug interactions, and to consider patient preferences when deciding to initiate, continue, or intensify statin therapy.	E (Expert Opinion)	---	IIa	C (53-62)

1a.7.1. What was the specific structure, treatment, intervention, service, or intermediate outcome addressed in the evidence review?

Appropriate statin use for patients with diabetes (based on age, presence of ischemic vascular disease or LDL level greater than 190).

1a.7.2. Grade assigned for the quality of the quoted evidence with definition of the grade:

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Quality of Evidence: **High**
Strength of Recommendation: **Strong** (moderate intensity dose statin), Strong/ Weak (high intensity dose statin)

High Quality of Evidence
- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation – Moderate Dose of Statin
- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

Weak Recommendation – High Dose of Statin (in relationship to risk/benefits)
- The work group recognizes that the evidence, though of high quality, shows a balance between estimates of harms and benefits. The best action will depend on local circumstances, patient values or preferences.

American College of Cardiology/ American Heart Association: Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults.
High and Moderate Quality of Evidence cited in Recommendations table for Diabetics (5 High, 4 Moderate all related to RCTs)
High Quality of Evidence
- Well-designed, well-executed† RCTs that adequately represent populations to which the results are applied and directly assess effects on health outcomes.
- MAs of such studies.

- Highly certain about the estimate of effect. Further research is unlikely to change our confidence in the estimate of effect.

Moderate Quality of Evidence

- RCTs with minor limitations‡ affecting confidence in, or applicability of, the results.
- Well-designed, well-executed nonrandomized controlled studies§ and well designed, well-executed observational studies
- MAs of such studies.
- Moderately certain about the estimate of effect. Further research may have an impact on our confidence in the estimate of effect and may change the estimate.

A- **Strong Recommendation**- there is high certainty based on evidence that the net benefit is substantial.

1a.7.3. Provide all other grades and associated definitions for strength of the evidence in the grading system.

1a.7.4. What is the time period covered by the body of evidence? (*provide the date range, e.g., 1990-2010*). Date range: 1998 to 2013

QUANTITY AND QUALITY OF BODY OF EVIDENCE

1a.7.5. How many and what type of study designs are included in the body of evidence? (*e.g., 3 randomized controlled trials and 1 observational study*)

Randomized control trial – 60
Systematic review – 1
Meta-analysis of RCT's- 1

1a.7.6. What is the overall quality of evidence across studies in the body of evidence? (*discuss the certainty or confidence in the estimates of effect particularly in relation to study factors such as design flaws, imprecision due to small numbers, indirectness of studies to the measure focus or target population*)

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Quality of Evidence: **High**
Strength of Recommendation: **Strong** (moderate intensity dose statin), Strong/ Weak (high intensity dose statin)

High Quality of Evidence

- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation – Moderate Dose of Statin

- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

Weak Recommendation – High Dose of Statin (in relationship to risk/benefits)

- The work group recognizes that the evidence, though of high quality, shows a balance between estimates of harms and benefits. The best action will depend on local circumstances, patient values or preferences.

American College of Cardiology/ American Heart Association: Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults.
High and Moderate Quality of Evidence cited in Recommendations table for Diabetics (5 High, 4 Moderate all related to RCTs)
High Quality of Evidence

- Well-designed, well-executed† RCTs that adequately represent populations to which the results are applied and directly assess effects on health outcomes.
- MAs of such studies.
- Highly certain about the estimate of effect. Further research is unlikely to change our confidence in the estimate of effect.

Moderate Quality of Evidence

- RCTs with minor limitations‡ affecting confidence in, or applicability of, the results.
- Well-designed, well-executed nonrandomized controlled studies§ and well designed, well-executed observational studies
- MAs of such studies.
- Moderately certain about the estimate of effect. Further research may have an impact on our confidence in the estimate of effect and may change the estimate.

A- **Strong Recommendation**- there is high certainty based on evidence that the net benefit is substantial.

ESTIMATES OF BENEFIT AND CONSISTENCY ACROSS STUDIES IN BODY OF EVIDENCE

1a.7.7. What are the estimates of benefit—magnitude and direction of effect on outcome(s) across studies in the body of evidence? (*e.g., ranges of percentages or odds ratios for improvement/ decline across studies, results of meta-analysis, and statistical significance*)

Benefits:
ICSI (high intensity dose) - A high-intensity statin reduces the relative risk of ASCVD events more than moderate-intensity statin in patients with and without diabetes, and in primary and secondary prevention in those with diabetes.
ICSI (moderate intensity dose) - The use of at least moderate-intensity statin therapy in persons of this age and an elevated LDL level with a diagnosis of diabetes has been shown to be effective. The only trial of high-intensity therapy in primary prevention was performed in a population without diabetes. High-intensity statin therapy reduces the relative risk of ASCVD events more than moderate-intensity statin therapy in patients with ASCVD. Because individuals with diabetes are at substantially increased lifetime risk for ASCVD events and death, similar to those who have had a previous ASCVD event, persons with diabetes with high estimated 10-year ASCVD risk are likely to benefit similarly from high-intensity therapy.

1a.7.8. What harms were studied and how do they affect the net benefit (benefits over harms)?

Harms:
ICSI (high intensity dose) - Serious adverse events such as myopathy and rhabdomyolysis are rare, but patient characteristics that may influence statin safety and be cause for not recommending high-intensity statin therapy include multiple concomitant comorbidities, impaired renal or hepatic function, a history of previous statin intolerance or muscle disorders, concomitant use of drugs known to affect statin metabolism, a history of hemorrhagic stroke and age > 75.

ICSI (moderate intensity dose) - Statin therapy appears to cause only a slight increased risk of side effects compared to placebo, and no increased risk of discontinuation of therapy compared to placebo. In clinical practice, the most common side effect observed is muscle symptoms. Some patients who have muscle symptoms can tolerate lower statin doses, changes in statin drugs or alternate-day dosing. Known statin associated serious adverse effects include rare cases of myopathy, hemorrhagic stroke and drug-drug interactions. There are insufficient data to support benefits in individuals with NYHA class II-IV heart failure and individuals undergoing maintenance hemodialysis. Preferences of patients who understand the risks and benefits of statin use should be accounted for, as the potential benefit (especially for primary prevention) may not outweigh the inconvenience and cost of a long-term daily medication with possible side effects for some people.

Benefits-Harms Assessment:
ICSI (high intensity dose) – The benefits of high-intensity statin therapy for patients with diabetes and high ASCVD risk usually outweigh potential harm, but side effects and individual patient characteristics that predispose patients to statin toxicity can influence the risk/harm balance. Patient preference should be included in decision-making.
ICSI (moderate intensity dose) - Given the high prevalence of macrovascular disease in those with diabetes and the cardiovascular benefit of statins clearly exceeds the risk of adverse events and modest cost for most patients with T2DM ages 40-75. Intensifying statin therapy should be discussed with the patient in a shared decision-making conversation including the risks and benefits. Patients with characteristics that might be predispose them to statin side effects may be candidates for lower intensity statin dosing.

UPDATE TO THE SYSTEMATIC REVIEW(S) OF THE BODY OF EVIDENCE

1a.7.9. If new studies have been conducted since the systematic review of the body of evidence, provide for <u>each</u> new study: 1) citation, 2) description, 3) results, 4) impact on conclusions of systematic review.

_____

1a.8 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

1a.8.1 What process was used to identify the evidence?

1a.8.2. Provide the citation and summary for each piece of evidence.

NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Component # 4 Tobacco Free
Measure Number (*if previously endorsed*)**:** #0729
Measure Title: Optimal Diabetes Care- Tobacco-Free Component
IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here: Optimal Diabetes Care

Date of Submission: 12/3/2014

Instructions

- *For composite performance measures:*
  - *A separate evidence form is required for each component measure unless several components were studied together.*
  - *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*
- Respond to all questions as instructed with answers immediately following the question. All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Maximum of 10 pages (*incudes questions/instructions*; minimum font size 11 pt; do not change margins). ***Contact NQF staff if more pages are needed.***
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.

Note: The information provided in this form is intended to aid the Steering Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF's evaluation criteria.

1a. Evidence to Support the Measure Focus
The measure focus is evidence-based, demonstrated as follows:

- Health outcome: [3] a rationale supports the relationship of the health outcome to processes or structures of care. Applies to patient-reported outcomes (PRO), including health-related quality of life/functional status, symptom/symptom burden, experience with care, health-related behavior.
- Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured intermediate clinical outcome leads to a desired health outcome.
- Process: [5] a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured process leads to a desired health outcome.
- Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured structure leads to a desired health outcome.
- Efficiency: [6] evidence not required for the resource use component.

Notes
3. Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.
4. The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) grading definitions and methods, or Grading of Recommendations, Assessment, Development and Evaluation (GRADE) guidelines.
5. 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 multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.
6. Measures of efficiency combine the concepts of resource use and quality (see NQF's Measurement Framework: Evaluating Efficiency Across Episodes of Care; AQA Principles of Efficiency Measures).

1a.1.This is a measure of: (*should be consistent with type of measure entered in De.1*)
Outcome

☒ Health outcome: Patient is tobacco-free

☐Patient-reported outcome (PRO): Click here to name the PRO

PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors

☐ Intermediate clinical outcome (*e.g., lab value*):

☐ Process: Click here to name the process

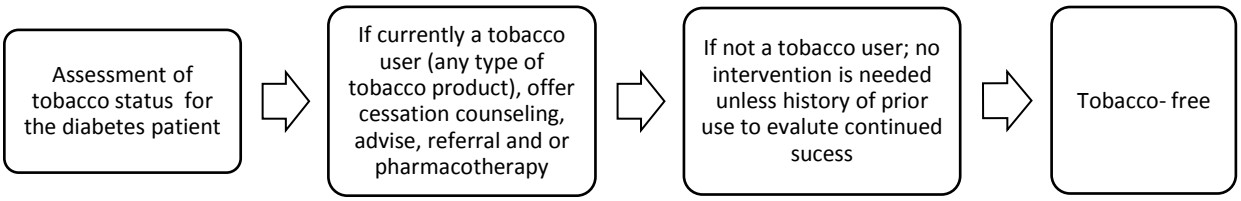
☐ Structure: Click here to name the structure

☐ Other: Click here to name what is being measured

_____

HEALTH OUTCOME/PRO PERFORMANCE MEASURE *If not a health outcome or PRO, skip to 1a.3*

1a.2. Briefly state or diagram the path between the health outcome (or PRO) and the healthcare structures, processes, interventions, or services that influence it.



1a.2.1. State the rationale supporting the relationship between the health outcome (or PRO) to at least one healthcare structure, process, intervention, or service (*i.e., influence on outcome/PRO*).

According to the Centers for Disease Control, cigarette smoking is the most important preventable cause of premature death in the United States. Cigarette smoking is the leading cause of preventable death in the United States, accounting for more than 480,000 deaths, or one of five deaths, each year.

A multifactorial approach to diabetes care that includes emphasis on blood pressure, lipids, glucose, aspirin use and non-use of tobacco will maximize health outcomes far more than a strategy that is limited to just one or two of these clinical domains *(American Diabetes Association, 2014; Duckworth, 2009; Gaede, 2008; Holman, 2008a)*.

Tobacco smoking increases risk of macrovascular complications 4-400% in adults with T2DM and also increases risk of macrovascular complications. Tobacco cessation is very likely to be the single most beneficial intervention that is available, and it should be emphasized by clinicians.
ICSI Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014

Note: For health outcome/PRO performance measures, no further information is required; however, you may provide evidence for any of the structures, processes, interventions, or service identified above.

_____

INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURE

1a.3. Briefly state or diagram the path between structure, process, intermediate outcome, and health outcomes. Include all the steps between the measure focus and the health outcome.

1a.3.1. What is the source of the systematic review of the body of evidence that supports the performance measure?

☐ Clinical Practice Guideline recommendation – ***complete sections 1a.4, and 1a.7***
☐ US Preventive Services Task Force Recommendation – ***complete sections 1a.5 and 1a.7***
☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*) – ***complete sections 1a.6 and 1a.7***
☐ Other – ***complete section 1a.8***

Please complete the sections indicated above for the source of evidence. You may skip the sections that do not apply.

_____

1a.4. CLINICAL PRACTICE GUIDELINE RECOMMENDATION

1a.4.1. Guideline citation (*including date*) and **URL for guideline** (*if available online*):

1a.4.2. Identify guideline recommendation number and/or page number and **quote verbatim, the specific guideline recommendation**.

1a.4.3. Grade assigned to the quoted recommendation with definition of the grade:

1a.4.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: If separate grades for the strength of the evidence, report them in section 1a.7.*)

1a.4.5. Citation and URL for methodology for grading recommendations (*if different from 1a.4.1*)**:**
ICSI GRADE Methodology: https://www.icsi.org/_asset/7mtqyr/ReviewingEvidenceUsingGRADE.pdf

1a.4.6. If guideline is evidence-based (rather than expert opinion), are the details of the quantity, quality, and consistency of the body of evidence available (e.g., evidence tables)?

☐ Yes → ***complete section 1a.7***
☐ No → ***report on another systematic review of the evidence in sections 1a.6 and 1a.7; if another review does not exist, provide what is known from the guideline review of evidence in 1a.7***

_____

1a.5. UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION

1a.5.1. Recommendation citation (*including date*) and **URL for recommendation** (*if available online*):

1a.5.2. Identify recommendation number and/or page number and **quote verbatim, the specific recommendation**.

1a.5.3. Grade assigned to the quoted recommendation with definition of the grade:

1a.5.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: the grading system for the evidence should be reported in section 1a.7.*)

1a.5.5. Citation and URL for methodology for grading recommendations (*if different from 1a.5.1*)**:**

Complete section 1a.7

_____

1a.6. OTHER SYSTEMATIC REVIEW OF THE BODY OF EVIDENCE

1a.6.1. Citation (*including date*) and **URL** (*if available online*):

1a.6.2. Citation and URL for methodology for evidence review and grading (*if different from 1a.6.1*)**:**

Complete section 1a.7

_____

1a.7. FINDINGS FROM SYSTEMATIC REVIEW OF BODY OF THE EVIDENCE SUPPORTING THE MEASURE

If more than one systematic review of the evidence is identified above, you may choose to summarize the one (or more) for which the best information is available to provide a summary of the quantity, quality, and consistency of the body of evidence. Be sure to identify which review is the basis of the responses in this section and if more than one, provide a separate response for each review.

1a.7.1. What was the specific structure, treatment, intervention, service, or intermediate outcome addressed in the evidence review?

1a.7.2. Grade assigned for the quality of the quoted evidence with definition of the grade:

1a.7.3. Provide all other grades and associated definitions for strength of the evidence in the grading system.

1a.7.4. What is the time period covered by the body of evidence? (*provide the date range, e.g., 1990-2010*). Date range: 1998 to 2013

QUANTITY AND QUALITY OF BODY OF EVIDENCE

1a.7.5. How many and what type of study designs are included in the body of evidence? (*e.g., 3 randomized controlled trials and 1 observational study*)

1a.7.6. What is the overall quality of evidence across studies in the body of evidence? (*discuss the certainty or confidence in the estimates of effect particularly in relation to study factors such as design flaws, imprecision due to small numbers, indirectness of studies to the measure focus or target population*)

ESTIMATES OF BENEFIT AND CONSISTENCY ACROSS STUDIES IN BODY OF EVIDENCE

1a.7.7. What are the estimates of benefit—magnitude and direction of effect on outcome(s) across studies in the body of evidence? (*e.g., ranges of percentages or odds ratios for improvement/ decline across studies, results of meta-analysis, and statistical significance*)

1a.7.8. What harms were studied and how do they affect the net benefit (benefits over harms)?

UPDATE TO THE SYSTEMATIC REVIEW(S) OF THE BODY OF EVIDENCE

1a.7.9. If new studies have been conducted since the systematic review of the body of evidence, provide for each new study: 1) citation, 2) description, 3) results, 4) impact on conclusions of systematic review.

_____

1a.8 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

1a.8.1 What process was used to identify the evidence?

1a.8.2. Provide the citation and summary for each piece of evidence.

NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Component # 5 Daily Aspirin/ Anti-platelet
Measure Number (*if previously endorsed*)**:** #0729
Measure Title: Optimal Diabetes Care- Aspirin Anti-platelet Use Component
IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here: Optimal Diabetes Care

Date of Submission: 12/3/2014

Instructions

- *For composite performance measures:*
  - *A separate evidence form is required for each component measure unless several components were studied together.*
  - *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*
- Respond to all questions as instructed with answers immediately following the question. All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Maximum of 10 pages (*incudes questions/instructions*; minimum font size 11 pt; do not change margins). ***Contact NQF staff if more pages are needed.***
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.

Note: The information provided in this form is intended to aid the Steering Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF's evaluation criteria.

1a. Evidence to Support the Measure Focus
The measure focus is evidence-based, demonstrated as follows:

- Health outcome: [3] a rationale supports the relationship of the health outcome to processes or structures of care. Applies to patient-reported outcomes (PRO), including health-related quality of life/functional status, symptom/symptom burden, experience with care, health-related behavior.
- Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured intermediate clinical outcome leads to a desired health outcome.
- Process: [5] a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured process leads to a desired health outcome.
- Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured structure leads to a desired health outcome.
- Efficiency: [6] evidence not required for the resource use component.

Notes
3. Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.
4. The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) grading definitions and methods, or Grading of Recommendations, Assessment, Development and Evaluation (GRADE) guidelines.
5. 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 multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.
6. Measures of efficiency combine the concepts of resource use and quality (see NQF's Measurement Framework: Evaluating Efficiency Across Episodes of Care; AQA Principles of Efficiency Measures).

1a.1.This is a measure of: (*should be consistent with type of measure entered in De.1*)
Outcome

- ☐ Health outcome: Click here to name the health outcome
- ☐Patient-reported outcome (PRO): Click here to name the PRO
  PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors
- ☒ Intermediate clinical outcome (*e.g., lab value*): Appropriate daily aspirin or antiplatelet use for patients with diabetes with ischemic vascular disease.

☐ Process: Click here to name the process
☐ Structure: Click here to name the structure
☐ Other: Click here to name what is being measured

HEALTH OUTCOME/PRO PERFORMANCE MEASURE *If not a health outcome or PRO, skip to 1a.3*

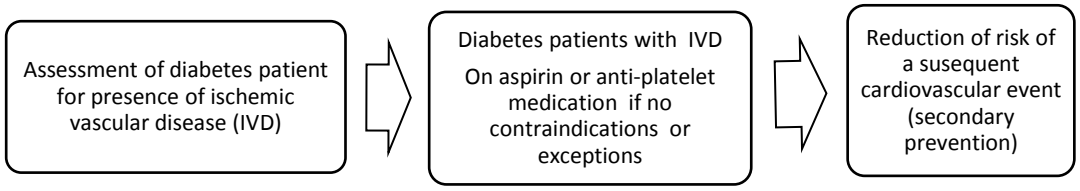
1a.2. Briefly state or diagram the path between the health outcome (or PRO) and the healthcare structures, processes, interventions, or services that influence it.

1a.2.1. State the rationale supporting the relationship between the health outcome (or PRO) to at least one healthcare structure, process, intervention, or service (*i.e., influence on outcome/PRO*).

Note: For health outcome/PRO performance measures, no further information is required; however, you may provide evidence for any of the structures, processes, interventions, or service identified above.

INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURE

1a.3. Briefly state or diagram the path between structure, process, intermediate outcome, and health outcomes. Include all the steps between the measure focus and the health outcome.



1a.3.1. What is the source of the systematic review of the body of evidence that supports the performance measure?

☒ Clinical Practice Guideline recommendation – ***complete sections 1a.4, and 1a.7***
☐ US Preventive Services Task Force Recommendation – ***complete sections 1a.5 and 1a.7***
☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*) – ***complete sections 1a.6 and 1a.7***
☐ Other – ***complete section 1a.8***

Please complete the sections indicated above for the source of evidence. You may skip the sections that do not apply.

1a.4. CLINICAL PRACTICE GUIDELINE RECOMMENDATION

1a.4.1. Guideline citation (*including date*) and **URL for guideline** (*if available online*):

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Redmon B, Caccamo D, Flavin P, Michels R, Myers C, O'Connor P, Roberts J, Setterlund L, Smith S, Sperl-Hillen J. Institute for Clinical Systems Improvement. Diagnosis and Management of Type 2 Diabetes Mellitus in Adults. Updated July 2014.

https://www.icsi.org/guidelines__more/catalog_guidelines_and_more/catalog_guidelines/catalog_endocrine_guidelines/diabetes/

1a.4.2. Identify guideline recommendation number and/or page number and **quote verbatim, the specific guideline recommendation**.

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014 pg. 36

Algorithm Annotation # 7.4- Aspirin Therapy

7.4 Aspirin Therapy

Recommendation	Quality of Evidence and Strength of Recommendation
A clinician should recommend aspirin therapy for patients diagnosed with T2DM with established ASCVD and consider aspirin therapy for others where the benefits outweighs the risk in primary prevention.	Quality of Evidence: High Strength of Recommendation: Strong
Benefits: Patients with established ASCVD are at high risk for recurrent events, and aspirin therapy for secondary prevention has been shown to reduce the rate of future events to a clinically meaningful degree. As T2DM is an independent risk factor for ASCVD, patients with T2DM might be expected to benefit from aspirin therapy even before they manifest evidence of ASCVD. **Harms**: Aspirin therapy could increase the risk of clinically significant bleeding and is also associated with medication cost. **Benefits-Harms Assessment:** The substantial reduction in recurrent ASCVD events with aspirin therapy in secondary prevention will outweigh the risk of bleeding for patients with established ASCVD and no contraindications to aspirin use. In patients with T2DM where aspirin is considered for primary prevention, while the risk of clinically significant bleeding is low, it is still likely increased relative to no therapy. At this time, it is unclear whether adding aspirin therapy to other standard therapy for CV risk factors adds net benefit in patients with T2DM who do not have established ASCVD.	
Relevant Resources: *Rosiak, 2013; Macchia, 2012; Soejima, 2012; Valentine, 2011; Antithrombotic Trialists' (ATT) Collaboration, 2009; Belch, 2008; Ogawa, 2008b; Campbell, 2007; Pignone, 2006*	

Supplemental Information
Patients with T2DM are at a significantly increased risk for development of heart disease (American Diabetes Association, 2014). Recent trials of aspirin use in diabetes have shown less benefit than older trials for primary prevention, perhaps due to better background A1c, blood pressure, and low-density lipoprotein control and lower smoking rates in recent trials (Rosiak, 2013; Macchia, 2012; Belch, 2008; Ogawa, 2008).

1a.4.3. Grade assigned to the quoted recommendation with definition of the grade:

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Quality of Evidence: High
Strength of Recommendation: Strong

High Quality of Evidence

- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation

- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

1a.4.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: If separate grades for the strength of the evidence, report them in section 1a.7.*)

ICSI uses GRADE methodology and definitions are located within the URL cited in 1a.4.1. More details about the GRADE method are indicated in 1a.4.5. with URL provided.

1a.4.5. Citation and URL for methodology for grading recommendations (*if different from 1a.4.1*)**:**
ICSI GRADE Methodology: https://www.icsi.org/_asset/7mtqyr/ReviewingEvidenceUsingGRADE.pdf

1a.4.6. If guideline is evidence-based (rather than expert opinion), are the details of the quantity, quality, and consistency of the body of evidence available (e.g., evidence tables)?

☒ Yes → ***complete section 1a.7***

☐ No → ***report on another systematic review of the evidence in sections 1a.6 and 1a.7; if another review does not exist, provide what is known from the guideline review of evidence in 1a.7***

1a.5. UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION

1a.5.1. Recommendation citation (*including date*) and **URL for recommendation** (*if available online*):

1a.5.2. Identify recommendation number and/or page number and **quote verbatim, the specific recommendation**.

1a.5.3. Grade assigned to the quoted recommendation with definition of the grade:

1a.5.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: the grading system for the evidence should be reported in section 1a.7.*)

1a.5.5. Citation and URL for methodology for grading recommendations (*if different from 1a.5.1*)**:**

Complete section 1a.7

1a.6. OTHER SYSTEMATIC REVIEW OF THE BODY OF EVIDENCE

1a.6.1. Citation (*including date*) and **URL** (*if available online*):

1a.6.2. Citation and URL for methodology for evidence review and grading (*if different from 1a.6.1*)**:**

Complete section 1a.7

1a.7. FINDINGS FROM SYSTEMATIC REVIEW OF BODY OF THE EVIDENCE SUPPORTING THE MEASURE

If more than one systematic review of the evidence is identified above, you may choose to summarize the one (or more) for which the best information is available to provide a summary of the quantity, quality, and consistency of the body of evidence. Be sure to identify which review is the basis of the responses in this section and if more than one, provide a separate response for each review.

Algorithm Annotation # 7.4- Aspirin Therapy

7.4 Aspirin Therapy

Recommendation	Quality of Evidence and Strength of Recommendation
A clinician should recommend aspirin therapy for patients diagnosed with T2DM with established ASCVD and consider aspirin therapy for others where the benefits outweighs the risk in primary prevention.	Quality of Evidence: High Strength of Recommendation: Strong
Benefits: Patients with established ASCVD are at high risk for recurrent events, and aspirin therapy for secondary prevention has been shown to reduce the rate of future events to a clinically meaningful degree. As T2DM is an independent risk factor for ASCVD, patients with T2DM might be expected to benefit from aspirin therapy even before they manifest evidence of ASCVD. **Harms**: Aspirin therapy could increase the risk of clinically significant bleeding and is also associated with medication cost. **Benefits-Harms Assessment:** The substantial reduction in recurrent ASCVD events with aspirin therapy in secondary prevention will outweigh the risk of bleeding for patients with established ASCVD and no contraindications to aspirin use. In patients with T2DM where aspirin is considered for primary prevention, while the risk of clinically significant bleeding is low, it is still likely increased relative to no therapy. At this time, it is unclear whether adding aspirin therapy to other standard therapy for CV risk factors adds net benefit in patients with T2DM who do not have established ASCVD.	
Relevant Resources: *Rosiak, 2013; Macchia, 2012; Soejima, 2012; Valentine, 2011; Antithrombotic Trialists' (ATT) Collaboration, 2009; Belch, 2008; Ogawa, 2008b; Campbell, 2007; Pignone, 2006*	

1a.7.1. What was the specific structure, treatment, intervention, service, or intermediate outcome addressed in the evidence review?

Appropriate daily aspirin or anti-platelet use for patients with diabetes and ischemic vascular disease.

1a.7.2. Grade assigned for the quality of the quoted evidence <u>with definition</u> of the grade:

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Quality of Evidence: High
Strength of Recommendation: Strong

High Quality of Evidence

- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation

- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

1a.7.3. Provide all other grades and associated definitions for strength of the evidence in the grading system.

1a.7.4. What is the time period covered by the body of evidence? (*provide the date range, e.g., 1990-2010*). Date range: 2006 to 2013

QUANTITY AND QUALITY OF BODY OF EVIDENCE

1a.7.5. How many and what type of study designs are included in the body of evidence? (*e.g., 3 randomized controlled trials and 1 observational study*)

Randomized control trial – 5
Systematic review – 2
Meta-analysis of RCT's- 1

1a.7.6. What is the overall quality of evidence <u>across studies</u> in the body of evidence? (*discuss the certainty or confidence in the estimates of effect particularly in relation to study factors such as design flaws, imprecision due to small numbers, indirectness of studies to the measure focus or target population*)

Institute for Clinical Systems Improvement (ICSI) Diabetes Mellitus in Adults, Type 2; Diagnosis and Management of. July 2014
Quality of Evidence: High
Strength of Recommendation: Strong

High Quality of Evidence
- Further research is very unlikely to change our confidence in the estimate of effect

Strong Recommendation
- The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.

ESTIMATES OF BENEFIT AND CONSISTENCY ACROSS STUDIES IN BODY OF EVIDENCE

1a.7.7. What are the estimates of benefit—magnitude and direction of effect on outcome(s) <u>across studies</u> in the body of evidence? (*e.g., ranges of percentages or odds ratios for improvement/ decline across studies, results of meta-analysis, and statistical significance*)

Benefits:
Patients with established ASCVD are at high risk for recurrent events, and aspirin therapy for secondary prevention has been shown to reduce the rate of future events to a clinically meaningful degree. As T2DM is an independent risk factor for ASCVD, patients with T2DM might be expected to benefit from aspirin therapy even before they manifest evidence of ASCVD.

1a.7.8. What harms were studied and how do they affect the net benefit (benefits over harms)?

Harms:
Aspirin therapy could increase the risk of clinically significant bleeding and is also associated with medication cost.

Benefits-Harms Assessment:
The substantial reduction in recurrent ASCVD events with aspirin therapy in secondary prevention will outweigh the risk of bleeding for patients with established ASCVD and no contraindications to aspirin use. In patients with T2DM where aspirin is considered for primary prevention, while the risk of clinically significant bleeding is low, it is still likely increased relative to no therapy. At this time, it is unclear whether adding aspirin therapy to other standard therapy for CV risk factors adds net benefit in patients with T2DM who do not have established ASCVD.

UPDATE TO THE SYSTEMATIC REVIEW(S) OF THE BODY OF EVIDENCE

1a.7.9. If new studies have been conducted since the systematic review of the body of evidence, provide for <u>each</u> new study: 1) citation, 2) description, 3) results, 4) impact on conclusions of systematic review.

1a.8 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

1a.8.1 What process was used to identify the evidence?

1a.8.2. Provide the citation and summary for each piece of evidence.