The Aims and Measures section is intended to provide guideline users with a menu of measures for multiple purposes, which may include the following:

- population health improvement measures,

- quality improvement measures for delivery systems,

- measures from regulatory organizations such as Joint Commission,

- measures that are currently required for public reporting,

- measures that are part of Center for Medicare Services Physician Quality Reporting initiative,

- other measures from local and national organizations aimed at measuring population health and improvement of care delivery.

This section provides resources, strategies and measurement for use in closing the gap between current clinical practice and the recommendations set forth in the guideline.

The subdivisions of this section are:

- Aims and Measures

- Implementation Tools and Resources

Aims and Measures

Note: a multifactorial intervention targeting hyperglycemia and cardiovascular risk factors in individuals with diabetes is most effective. Both individual measures of diabetes care, as well as comprehensive measures of performance on broader sets of measures, are recommended. A randomized controlled trial has shown a 50% reduction in major cardiovascular events through a multifactorial intervention targeting hyperglycemia, hypertension, dyslipidemia, microalbuminuria, aspirin and ACE inhibitor use in individuals with microalbuminuria *(Gaede, 2003)*.

Goals for A1c, low-density lipoprotein and other diabetes measures should be personalized, and lower goals for A1c and low-density lipoprotein than those included here in the priority aims and measures may be clinically justified in some adults with T2DM. However, efforts to achieve A1c below 7% may increase risk of mortality, weight gain, hypoglycemia and other adverse effects in many patients with T2DM. Therefore, the aims and measures listed here are selected carefully in the interests of patient safety.

Outcome Measures

1. **Diabetes Optimal Care:** Increase the percentage of patients ages 18-75 years with T2DM mellitus who are optimally managed *(individual components and composite measure)*:

   Measures for accomplishing this aim:

   Percentage of patients with T2DM mellitus ages 18-75 years old who achieve any or all of the following:

   a. Percentage of patients with HbA1c $\leq$ 8%.

   b. Percentage of patients with blood pressure most recent measurement less than 140/90 mmHg.

   c. Percentage of patients who are tobacco free.

   d. Percentage of patients with established ASCVD and documented daily aspirin use (unless contraindicated).

   e. Percentage of patients ages 40-75 years with T2DM with untreated LDL > 70 mg/dL who are prescribed statin therapy.

   f. Percentage of patients with all of the above.

2. Management of T2DM in high-risk patients (Trial measure): Decrease the percentage of adult patients ages 18-75 with T2DM mellitus with poorly controlled glucose and cardiovascular risk factors *(individual components and composite measure):*

   Measures for accomplishing this aim:

   a. Percentage of patients with T2DM mellitus with HbAlc > 9%.

   b. Percentage of patients with T2DM mellitus with ASCVD and not on statin.

   c. Percentage of patients with T2DM and established ASCVD who do not have documentation of daily aspirin use (exclude patients for whom aspirin is contraindicated).

   d. Percentage of patients with T2DM mellitus with blood pressure measurement greater than 160/100 mmHg.

   e. Percentage of patients who are current smoker.

   f. Percentage of patients with any of the above (a-e).

   Note about trial measure: This measure is intended for internal quality improvement use to measure prevalence of patients with type 2 diabetes whose glucose and cardiovascular factors are poorly controlled.

3. Lifestyle modification and nutrition therapy – increase the percentage of patients ages 18-75 years newly diagnosed with T2DM who are advised about lifestyle modification and nutrition therapy.

    Measure for accomplishing this aim:

    a. Percentage of newly diagnosed patients who are advised about lifestyle modification and nutrition therapy within one year of diagnosis.

4. Medication Management – increase the percentage of patients with T2DM who are on appropriate medication management.

    Measures for accomplishing this aim:

    a. Percentage of patients ages 40-75 years with untreated LDL > 70 mg/dL who are prescribed statin therapy.

    b. Percentage of patients with established ASCVD with documented aspirin use (unless contraindicated).

Measurement Specifications

Measurement #1 a, b, c, d, e, f: Diabetes Optimal Care

Measurement Description

Percentage of patients with T2DM ages 18-75 years old who achieve any or all of the following:

    a. Percentage of patients with HgbA1c < 8%.

    b. Percentage of patients with blood pressure most recent measurement less than 140/90 mmHg.

    c. Percentage of patients who are tobacco free.

    d. Percentage of patients with established ASCVD with documented daily aspirin use (unless contra-indicated)

    e. Percentage of patients ages 40-75 years and T2DM with untreated LDL > 70 mg/dL who are prescribed statin therapy.

    f. Percentage of patients with all of the above.

Population Definition

Patients ages 18-75 years old with T2DM.

Data of Interest

$$\frac{\text{\# of patients who achieve any or all of the following control criteria}}{\text{\# of patients ages 18-75 years old with T2DM}}$$

Numerator and Denominator Definitions

Numerator:

    a. Number of patients with HgbA1c < 8%.

    b. Number patients with most recent blood pressure measurement less than 140/90 mmHg.

    c. Number of patients who are tobacco free.

    d. Number of patients with established ASCVD with documented daily aspirin use (unless contraindicated).

    e. Number of patients ages 40-75 years with type 2 diabetes and untreated LDL > 70 mg/dL who are prescribed statin therapy.

    f. Number of patients with all of the above.

Denominator:

    a. Number of patients ages 18-75 years old who have T2DM.

    b. Number of patients ages 18-75 years old who have T2DM.

    c. Number of patients ages 18-75 years old who have T2DM.

    d. Number of patients ages 18-75 years old who have T2DM and established ASCVD.

    e. Number of patients ages 40-75 years old who have T2DM and untreated LDL > 70 mg/dL.

    f. Number of patients ages 18-75 years old who have T2DM.

Method/Source of Data Collection

Data should be collected from EMR for all patient visits in the past 12 months.

Notes

This is an outcome measure, and improvement is noted as an increase in the rate. This measure should be calculated as both an individual components met and a composite (all components met at the same time) measure.

Goals for A1c, low-density lipoprotein and other diabetes measures should be personalized, and lower goals for A1c and low-density lipoprotein than those included here in the priority aims and measures may be clinically justified in some adults with T2DM. However, efforts to achieve A1c below 7% may increase risk of mortality, weight gain, hypoglycemia and other adverse effects in many patients with T2DM. Therefore, the aims and measures listed here are selected carefully in the interests of patient safety.

Measurement #2a

Management of T2DM in high-risk patients (Trial Measure)

Measurement Description

Percentage of patients with T2DM with HbAlc > 9%.

Population Definition

Patients ages 18-75 years old with T2DM.

Data of Interest

$$\frac{\text{\# of patients with HbA1c} > 9\%}{\text{\# of patients ages 18-75 years old with T2DM}}$$

Numerator and Denominator Definitions

Numerator: Number of patients with HbA1c > 9%.

Denominator: Number of patients ages 18-75 years old who have T2DM.

Method/Source of Data Collection

Data should be collected from EMR for all patient visits in the past 12 months.

Notes

This is a process measure, and improvement is noted as a decrease in the rate. The purpose of this measure is to decrease the percentage of adult patients ages 18-75 with T2DM with poorly controlled glucose and cardiovascular risk factors (clinical strategies that target high-risk populations may be more viable with limited resources).

Measurement #2b

Measurement Description

Percentage of patients with T2DM with ASCVD and not on a statin.

Population Definition

Patients ages 18-75 years old with T2DM.

Data of Interest

$$\frac{\text{\# of patients with ASCVD and not on a statin}}{\text{\# of patients ages 18-75 years old with T2DM}}$$

Numerator and Denominator Definitions

Numerator: Number of patients with ASCVD and not on a statin.

Denominator: Number of patients ages 18-75 years old who have T2DM.

Method/Source of Data Collection

Data should be collected from EMR for all patient visits in the past 12 months.

Notes

This is a process measure, and improvement is noted as a decrease in the rate. The purpose of this measure is to decrease the percentage of adult patients ages 18-75 with T2DM with poorly controlled glucose and cardiovascular risk factors (clinical strategies that target high-risk populations may be more viable with limited resources).

Measurement #2c

Measurement Description

Percentage of patients with T2DM and established ASCVD who do not have documentation of daily aspirin use (exclude patients for whom aspirin is contraindicated).

Population Definition

Patients ages 18-75 years old with T2DM.

Data of Interest

of patients with established ASCVD and no documentation of daily aspirin use (unless contraindicated)

# of patients ages 18-75 years old with T2DM

Numerator and Denominator Definitions

Numerator: Number of patients with established ASCVD who do not have documentation of daily aspirin use (exclude patients for whom aspirin is contraindicated).

Denominator: Number of patients ages 18-75 years old who have T2DM.

Method/Source of Data Collection

Data should be collected from EMR for all patient visits in the past 12 months.

Notes

This is a process measure, and improvement is noted as a decrease in the rate. The purpose of this measure is to decrease the percentage of adult patients ages 18-75 with T2DM with poorly controlled glucose and cardiovascular risk factors (clinical strategies that target high-risk populations may be more viable with limited resources).

Measurement #2d

Measurement Description

Percentage of patients with T2DM with blood pressure greater than 160/100 mm/Hg.

Population Definition

Patients ages 18-75 years old with T2DM.

Data of Interest

$$\frac{\text{\# of patients with BP} > 160/100 \text{ mmHg}}{\text{\# of patients ages 18-75 years old with T2DM}}$$

Numerator and Denominator Definitions

Numerator: Number of patients with blood pressure measurement greater than 160/100 mmHg.

Denominator: Number of patients ages 18-75 years old who have T2DM.

Method/Source of Data Collection

Data should be collected from EMR for all patient visits in the past 12 months.

Notes

This is a process measure, and improvement is noted as a decrease in the rate. The purpose of this measure is to decrease the percentage of adult patients ages 18-75 with T2DM with poorly controlled glucose and cardiovascular risk factors (clinical strategies that target high-risk populations may be more viable with limited resources).

Measurement #2e

Measurement Description

Percentage of patients who currently smoke.

Population Definition

Patients ages 18-75 years old with T2DM.

Data of Interest

$$\frac{\text{\# of patients who currently smoke}}{\text{\# of patients ages 18-75 years old with T2DM}}$$

Numerator and Denominator Definitions

Numerator: Number of patients who currently smoke.

Denominator: Number of patients ages 18-75 years old who have T2DM.

Method/Source of Data Collection

Data should be collected from EMR for all patient visits in the past 12 months.

Notes

This is a process measure, and improvement is noted as a decrease in the rate. The purpose of this measure is to decrease the percentage of adult patients ages 18-75 with T2DM with poorly controlled glucose and cardiovascular risk factors (clinical strategies that target high-risk populations may be more viable with limited resources).

Measurement #2f

Measurement Description

Percentage of patients with T2DM with any of the following (2a-2e) (composite measure).

Population Definition

Patients ages 18-75 years old with T2DM.

Data of Interest

$$\frac{\text{\# of patients with any of the following (2a-2e)}}{\text{\# of patients ages 18-75 years old with T2DM}}$$

Numerator and Denominator Definitions

Numerator: Number of patients with any of the following (2a-2e).

Denominator: Number of patients ages 18-75 years old who have T2DM.

Method/Source of Data Collection

Data should be collected from EMR for all patient visits in the past 12 months.

Notes

This is a process measure, and improvement is noted as a decrease in the rate. The purpose of this measure is to decrease the percentage of adult patients ages 18-75 with T2DM with poorly controlled glucose and cardiovascular risk factors (clinical strategies that target high-risk populations may be more viable with limited resources).

Measurement #3a

Measurement Description

Percentage of newly diagnosed patients who are advised about lifestyle modification and nutrition therapy within one year of diagnosis.

Population Definition

Patients ages 18-75 years old with T2DM.

Data of Interest

of patients who are advised about lifestyle modification and nutrition therapy within one year of diagnosis

# of patients ages 18-75 years old with T2DM

Numerator and Denominator Definitions

Numerator: Number of patients who are advised about lifestyle modification and nutrition therapy within one year of diagnosis.

Denominator: Number of patients ages 18-75 years old who have T2DM.

Method/Source of Data Collection

Data should be collected from EMR for all patient visits in the past 12 months.

Notes

This is a process measure, and improvement is noted as an increase in the rate.

Measurement #4a

Measurement Description

Percentage of patients ages 40-75 years with untreated LDL > 70 mg/dL who are prescribed statin therapy.

Population Definition

Patients ages 40-75 years old with T2DM and untreated LDL > 70 mg/dL.

Data of Interest

$$\frac{\text{\# of patients who are prescribed statin therapy}}{\text{\# of patients ages 40-75 years old with T2DM and untreated LDL} > 70 \text{ mg/dL}}$$

Numerator and Denominator Definitions

Numerator: Number of patients who are prescribed statin therapy.

Denominator: Number of patients ages 40-75 years old who have T2DM and untreated LDL > 70 mg/dL.

Method/Source of Data Collection

Data should be collected from EMR for all patient visits in the past 12 months.

Notes

This is a process measure, and improvement is noted as an increase in the rate.

Measurement #4b

Measurement Description

Percentage of patients with established ASCVD with documented aspirin use (unless contraindicated).

Population Definition

Patients ages 18-75 years old with T2DM.

Data of Interest

of patients with established ASCVD with documented aspirin use (unless contraindicated)
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# of patients ages 18-75 years old with T2DM

Numerator and Denominator Definitions

Numerator: Number of patients with established ASCVD with documented aspirin use (unless contraindicated).

Denominator: Number of patients ages 18-75 years old who have T2DM.

Method/Source of Data Collection

Data should be collected from EMR for all patient visits in the past 12 months.

Notes

This is a process measure, and improvement is noted as an increase in the rate.