Quality Standards

Prediabetes and Type 2 Diabetes

Care for People of All Ages

Ontario Health

About This Quality Standard

The following quality standard addresses **care for children and adults who are at risk of developing prediabetes or type 2 diabetes or who already have a diagnosis of either**.

It includes the assessment, diagnosis, and management of prediabetes and type 2 diabetes. It applies to all settings.

This quality standard does not include guidance on prevention efforts for the general public, although it does provide advice on how to prevent progression from prediabetes to type 2 diabetes.

What Is a Quality Standard?

Quality standards outline what high-quality care looks like for conditions or processes where there are large variations in how care is delivered, or where there are gaps between the care provided in Ontario and the care patients should receive. They:

- Help patients, families, and caregivers know what to ask for in their care
- Help health care professionals know what care they should be offering, based on evidence and expert consensus
- Help health care organizations measure, assess, and improve their performance in caring for patients

Quality standards are developed by Ontario Health, in collaboration with health care professionals, patients, and caregivers across Ontario.

For more information, contact qualitystandards@ontariohealth.ca.

Values That Are the Foundation of This Quality Standard

This quality standard was created, and should be implemented, according to the Patient Declaration of Values for Ontario. This declaration "is a vision that articulates a path toward patient partnership across the health care system in Ontario. It describes a set of foundational principles that are considered from the perspective of Ontario patients, and serves as a guidance document for those involved in our health care system."

These values are:

- Respect and dignity
- Empathy and compassion
- Accountability
- Transparency
- Equity and engagement

People with prediabetes and type 2 diabetes benefit from care providers or care teams with the knowledge, skills, and judgment to provide evidence-based treatment for prediabetes and type 2 diabetes while also addressing all health care needs. The goal of management is to improve symptoms; reduce or delay complications associated with type 2 diabetes; and improve function, quality of life, and prognosis.

People with prediabetes and type 2 diabetes also benefit from relationships with care providers who respect their priorities and recognize their diversity and specific needs, and who have the capacity to address the social determinants of health.[1] Care providers should consider that many of the lifestyle factors that put people with prediabetes and type 2 diabetes at risk of complications, such as diet, physical activity levels, and stress, are driven by the social determinants of health—a person's income, employment, physical and geographical ability to access healthy and affordable food, and experiences of discrimination. Care providers can better support people with prediabetes and type 2 diabetes by acknowledging that some of these barriers may make it harder for some people than others to follow a healthy diet, lose weight, or increase physical activity levels.[1]

Management of prediabetes and type 2 diabetes in Indigenous populations should follow the same guidance as those for the general population.[1] However, care providers should be aware of the historical context of the lives of Indigenous Peoples throughout Canada and be sensitive to the impacts of intergenerational trauma and the physical,

mental, emotional, and social harms experienced by Indigenous people, families, and communities, as well as recognizing their strength and resilience. Approaches to care can include holistic healing and healers for people and communities and should be tailored to address these needs.

The residential school experience, Indian hospitals, the Sixties Scoop, and other policies of colonization have had negative effects on the health of survivors and their descendants. Some residual health effects include stunted growth, greater insulin sensitivity, lowered metabolic rate, increased gestational complications in people who are pregnant, and lowered immune system development and function.[2] Accumulatively, these physical effects, combined with trauma and ongoing discrimination, have led to increased rates of obesity and made Indigenous people more prone to developing prediabetes and type 2 diabetes.[2,3]

Quality Statements to Improve Care

These quality statements describe what high-quality care looks like for children and adults who are at risk of developing prediabetes or type 2 diabetes or who already have a diagnosis of either.

Quality Statement 1: Screening for Risk Factors and Testing for Prediabetes and Type 2 Diabetes

People who are asymptomatic yet susceptible to developing prediabetes and type 2 diabetes have their blood tested at regular intervals determined by their individual risk factors.

Quality Statement 2: Reducing the Risk of Type 2 Diabetes

People with prediabetes and their caregivers collaborate with their care provider to create a tailored plan to prevent or slow the progression from prediabetes to type 2 diabetes.

Quality Statement 3: Identifying and Assessing Mental Health Needs

People with type 2 diabetes are screened for psychological distress and mental health disorders on a regular basis using recognized screening questions or validated screening tools. People who screen positive for a mental health disorder are referred to a health care professional with expertise in mental health for further assessment and treatment.

Quality Statement 4: Healthy Behaviour Changes

People with prediabetes or type 2 diabetes receive education and coaching on healthy behaviour changes, including increasing physical activity, improving diet, managing stress, and quitting smoking. People who have concerns about their weight despite implementing healthy behaviour changes are offered individualized weight management interventions.

Quality Statement 5: Setting and Achieving Glycemic Targets

People with type 2 diabetes, in collaboration with their health care team, set individualized glycemic targets, including glycated hemoglobin (hemoglobin A1C) and other available measures of glycemia. All available data are used to assess whether individualized glycemic targets are achieved and to guide treatment decisions and self-management activities.

Quality Statement 6: Access to a Collaborative Interprofessional Care Team

People with prediabetes or type 2 diabetes and their caregivers have access to a collaborative interprofessional care team to comprehensively manage their prediabetes or diabetes and additional health care needs.

Quality Statement 7: Promoting Self-Management Skills

People with prediabetes and type 2 diabetes and their caregivers collaborate with their interprofessional care team to create a tailored self-management plan based on their needs and preferences, with the goal of enhancing their ability to participate in their diabetes management.

Quality Statement 8: Screening for Complications and Risk Factors

People with type 2 diabetes are screened for complications and risk factors at diagnosis and at regular follow-up intervals.

Quality Statement 9: Cardiovascular Protection

People with type 2 diabetes receive care that incorporates an individualized cardiovascular risk reduction approach.

Table of Contents

Scope of This Quality Standard

This quality standard addresses care for children and adults who are at risk of developing prediabetes or type 2 diabetes or who already have a diagnosis of either. It does not address the prevention of type 2 diabetes in the general population, although it does provide guidance on risks and lifestyle factors that may affect the progression from prediabetes to type 2 diabetes.

This quality standard applies to all settings.

This quality standard does not include care for pregnant people with type 2 diabetes. For a quality standard that addresses care for people with type 1 or type 2 diabetes who become pregnant, or people diagnosed with gestational diabetes, please refer to the *Diabetes in Pregnancy* quality standard.

This quality standard includes nine quality statements on areas identified by the Type 2 Diabetes Quality Standard Advisory Committee and several health and social service organizations working with Indigenous populations as having high potential to improve the quality of care in Ontario for people at risk for or living with prediabetes and type 2 diabetes.

Why This Quality Standard Is Needed

Diabetes is a chronic disease characterized by hyperglycemia. It can lead to serious complications, a diminished quality of life, and a substantially reduced life expectancy.[4,5] In 2019, an estimated 4.4 million Ontarians were living with diabetes and prediabetes (type 1 diabetes, diagnosed and undiagnosed type 2 diabetes, and prediabetes combined).[6] Treating diabetes and its complications is estimated to cost the health care system $1.5 billion in direct costs.[6] Roughly 90% of all cases of diabetes are type 2 diabetes.[1]

People with diabetes are at risk of developing serious, acute complications (e.g., severe hypoglycemia); long-term microvascular complications affecting the eyes, kidneys, and nerves; and cardiovascular disease.[1] Keeping blood glucose levels in the target range and a healthy, balanced diet and physical activity are essential for managing type 2 diabetes and reducing the risk of acute and chronic complications.[1]

The factors that increase the risk of type 2 diabetes are multifaceted and can be social as well as genetic/biological. Certain populations experience higher rates of type 2 diabetes, such as those with low income; people of African, Arab, South Asian, or Hispanic descent; and Indigenous populations.[1,7,8,9,10] One Canadian survey from 2011 found that participants in the lowest income group had roughly four times the prevalence of type 2 diabetes than those in the highest income group.[11] In Ontario, the prevalence of self-reported diabetes is roughly twice as high for South Asian people (8.1%) and Black people (8.5%) as it is for White people (4.2%).[12] Indigenous populations are three to five times more likely to have type 2 diabetes than are non-Indigenous Canadians.[1]

In addition to disparities in the rates of type 2 diabetes across specific populations, there are also variations in the rates of diabetes-related outcomes across Ontario's geographical regions. Hospitalizations for cardiovascular conditions, chronic dialysis or kidney transplant, and lower-extremity amputation were highest in northern Ontario, particularly among First Nations communities, and in predominantly rural areas in southern Ontario (between 2006/07 and 2010/11).[13] Data from 2017/18 show that the rates of amputation among people with type 2 diabetes was 35 times higher in the James and Hudson Bay Coasts sub-region than in the Eastern York Region sub-region, which had the lowest rates of amputation (Discharge Abstract Database [DAD], provided by the Institute for Clinical Health Sciences [ICES]).

Emergency department visits for type 2 diabetes and associated complications also varied significantly across the province: In 2017/18, the Scarborough South sub-region had rates 25 times higher than the Bolton-Caledon sub-region (National Ambulatory Care Reporting System). In the same year, the James and Hudson Bay Coasts sub-region had the highest rate of hospital readmissions for type 2 diabetes and associated complications when compared with other sub-regions. The James and Hudson Bay Coasts and Northern sub-regions also had the highest rates of inpatient hospital discharge for people with a recorded diagnosis of type 2 diabetes (Discharge Abstract Database, extracted using IntelliHealth).

This quality standard focuses on the needs of all people with type 2 diabetes, with particular consideration given to the populations that are more susceptible to type 2 diabetes and its associated complications. Based on evidence, consultations with people who have type 2 diabetes, and clinical expert consensus, the nine quality statements that make up this quality standard provide guidance on high-quality care. Accompanying indicators will help care providers and organizations monitor and improve the quality of care for people with prediabetes and type 2 diabetes living in Ontario.

Our Population-Focused Approach

We used a population-focused approach to better understand the experiences and needs of populations with the highest prediabetes and type 2 diabetes burden and greatest gaps in access to diabetes care (based on a review of the literature): Indigenous, Black, South Asian, and other racialized populations, and populations living on a low income. Ontario Health undertook three approaches:

1. Strategically selecting participants for the quality standard advisory committee to include people with expertise and experience in working with communities at greater risk for prediabetes and type 2 diabetes
2. Using culturally sensitive and safe clinical practice guidelines
3. Consulting with Indigenous organizations and Indigenous health care delivery partners

The consultations we undertook were not exhaustive; but within our established time frame for quality standard development, we engaged a range of partners: The Indigenous Primary Health Care Council, Ontario Federation of Indigenous Friendship Centers, Métis Nation of Ontario, Ontario Native Women's Association, Sioux Lookout First Nations Health Authority, and Weeneebayko Area Health Authority. We consulted these partners before each meeting of the quality standard advisory committee and presented recommendations from these consultations to the committee. These consultations resulted in content that better reflects the experiences and needs of Indigenous people, including:

- Adding a quality statement
- Expanding the principles and values section
- Rewording sections of the quality standard
- Revising the patient guide

In addition to our consultations with organizations serving Indigenous communities, we received feedback and guidance from the Alliance for Healthier Communities and community health centres for perspectives on how to best meet the needs of low-income, racialized, and specifically Black and South Asian populations.

How to Use This Quality Standard

Quality standards inform patients, clinicians, and organizations about what high-quality care looks like for health conditions or processes deemed a priority for quality improvement in Ontario. They are based on the best evidence.

Guidance on how to use quality standards and their associated resources is included below.

For People With Prediabetes or Type 2 Diabetes

This quality standard consists of quality statements. These describe what high-quality care looks like for people who are at risk of developing or who have prediabetes or type 2 diabetes.

Within each quality statement, we've included information on what these statements mean for you, as someone with prediabetes or type 2 diabetes.

In addition, you may want to download the accompanying patient guide on type 2 diabetes, to help you and your family have informed conversations with your health care providers. Inside, you will find questions you may want to ask as you work together to make a plan for your care.

For Care Providers and Organizations

The quality statements within this quality standard describe what high-quality care looks like for people who are at risk of developing or who have prediabetes or type 2 diabetes.

They are based on the best evidence and designed to help you know what to do to reduce gaps and variations in care.

Many care providers and organizations are already providing high-quality evidence-based care. However, there may be elements of your care that can be improved. This quality standard can serve as a resource to help you prioritize and measure improvement efforts.

Tools and resources to support you in your quality improvement efforts accompany each quality standard. These resources include indicators and their definitions

(Appendix 1) to help you assess the quality of care you are delivering and identify gaps in care and areas for improvement. While it is not mandatory to use or collect data when using a quality standard to improve care, measurement is key to quality improvement.

There are also a number of resources online to help you, including:

- Our patient guide on type 2 diabetes, which you can share with patients and families to help them have conversations with you and their other health care providers. Please make the patient guide available where you provide care
- Our measurement resources, which include our data tables to help you identify gaps in care and inform your resource planning and improvement efforts, and our measurement guide of technical specifications for the indicators in this standard
- Our *Getting Started Guide*, which includes links to templates and tools to help you put quality standards into practice. This guide shows you how to plan for, implement, and sustain changes in your practice
- Quorum, an online community dedicated to improving the quality of care across Ontario. This is a place where health care providers can share information, inform, and support each other, and it includes tools and resources to help you implement the quality statements within each standard
- Quality Improvement Plans, which can help your organization outline how it will improve the quality of care provided to your patients, residents, or clients in the coming year
- The Health Equity Impact Assessment tool, which can help your organization consider how programs and policies impact population groups differently. This tool can help maximize positive impacts and reduce negative impacts, with an aim of reducing health inequities between population groups

How the Health Care System Can Support Implementation

As you work to implement this quality standard, there may be times when you find it challenging to provide the care outlined due to system-level barriers or gaps. These challenges have been identified and documented as part of the development of the standard, which included extensive consultation with health care professionals and lived experience advisors and careful review of available evidence and existing programs. Many of the levers for system change fall within the purview of Ontario Health, and as such we will continue to work to address these barriers to support the implementation

of quality standards. We will also engage and support other provincial partners, including the Ministry of Health or other relevant ministries, on policy-level initiatives to help bridge system-level gaps.

In the meantime, there are many actions you can take on your own, so please read the standard and act where you can.

How to Measure Overall Success

The Type 2 Diabetes Quality Standard Advisory Committee identified some overarching goals for this quality standard. These goals were mapped to indicators that can be used to monitor the progress being made to improve care for people with type 2 diabetes in Ontario. Some indicators are provincially measurable, while some can be measured using only locally sourced data.

Collecting and using data associated with this quality standard is optional. However, data will help you assess the quality of care you are delivering and the effectiveness of your quality improvement efforts.

We realize this standard includes a lengthy list of indicators. We've given you this list so you don't have to create your own quality improvement indicators. We recommend you identify areas to focus on in the quality standard and then use one or more of the associated indicators to guide and evaluate your quality improvement efforts.

Where possible, data will be reported by various equity stratifications, such as patient socioeconomic and demographic characteristics, such as age, income, region, rurality, and sex.

See Appendix 1 for additional details on how to measure these indicators and our measurement guide for more information and support.

Indicators That Can Be Measured Using Provincial Data

Note: The indicators below are meant to apply to people with type 2 diabetes specifically; however, currently available data sources are limited in their ability to differentiate the types of diabetes. Exploratory work is currently under way to address this. For now, these measures include all people with diabetes.

- Percentage of people with diabetes who have had an urgent acute care visit for diabetes
  - Reported by:
    - Emergency department visits
    - Hospital admissions
- Percentage of people who had an urgent acute care visit for diabetes who visited the emergency department or were admitted to hospital for diabetes within 30 days
  - Reported by:
    - Emergency department visits
    - Hospital admissions
- Percentage of people with diabetes who have had a diabetes-related complication
  - Reported by:
    - Amputations (above-ankle, below-ankle)
    - Cardiovascular complications
    - End-stage renal disease
    - Retinopathy
    - Skin and soft tissue infection or foot ulcer

Indicators That Can Be Measured Using Only Local Data

- Percentage of people who are at increased risk of developing prediabetes and type 2 diabetes who are tested for type 2 diabetes using the appropriate blood test at their predetermined interval
- Percentage of people with type 2 diabetes and their families and caregivers (where appropriate) who report feeling confident managing their condition
- Percentage of people with prediabetes who do not progress to type 2 diabetes

Quality Statements to Improve Care: The Details

1

Screening for Risk Factors and Testing for Prediabetes and Type 2 Diabetes

People who are asymptomatic yet susceptible to developing prediabetes and type 2 diabetes have their blood tested at regular intervals determined by their individual risk factors.

Sources: American Diabetes Association, 2018[14] | Diabetes Canada, 2018[1] | Institute for Clinical Systems Improvements, 2014[15] | National Institute for Health and Care Excellence, 2015[16]

Definitions

Blood tests[1]: A diagnostic laboratory test used to diagnose prediabetes and type 2 diabetes in people who have risk factors for type 2 diabetes but who are asymptomatic.

The following blood tests are used for children:

- Hemoglobin A1C in combination with either fasting plasma glucose or random plasma glucose
- If there is a discrepancy between the tests, repeat testing is done or a 2-hour 75 g oral glucose tolerance test is administered

The following blood tests are used for adults:

- Fasting plasma glucose and/or hemoglobin A1C

The following results indicate a diagnosis of prediabetes and type 2 diabetes. Repeat tests (preferably the same test) must be done on another day to confirm the diagnosis.

- **Prediabetes—**People with prediabetes have been tested and have at least one of the following results: a fasting plasma glucose of 6.1 to 6.9 mmol/L; a hemoglobin A1C of 6.0% to 6.4%; or a plasma glucose of 7.8 to 11.0 mmol/L 2 hours after taking 75 g of oral glucose. Not all individuals with prediabetes will progress to

type 2 diabetes. Some will revert to normoglycemia, usually as a result of healthy behaviour changes

- **Type 2 diabetes—**People with type 2 diabetes have had their blood sugar levels tested, with at least one of the following results: a fasting plasma glucose of greater than or equal to 7.0 mmol/L; a hemoglobin A1C of greater than or equal to 6.5%; a plasma glucose greater than or equal to 11.1 mmol/L 2 hours after taking 75 g of oral glucose; or a random plasma glucose greater than or equal to 11.1 mmol/L

Risk factors[1,14,16]: Health care providers should assess people's risk factors for type 2 diabetes at least annually. Frequency of testing for type 2 diabetes should be based on people's risk factors and tailored to meet individual, caregiver, and community needs. Suggested intervals for testing children and adults for type 2 diabetes based on common risk factors are described below.

Children should be considered for type 2 diabetes testing every 2 years if they have any of the following risk factors:

- Polycystic ovarian syndrome
- Impaired fasting glucose or impaired glucose tolerance
- Atypical antipsychotic medication use
- Eight years of age or younger with 3 or more, or at puberty or older with 2 or more, of the following:
  - Being a member of an Indigenous group (e.g., First Nations, Inuit, and Métis)
  - Being of African, Arab, South Asian, or Hispanic descent
  - Having a first-degree relative with type 2 diabetes and/or exposure to hyperglycemia in utero
  - Signs or symptoms of insulin resistance (e.g., acanthosis nigricans, hypertension, dyslipidemia, and nonalcoholic fatty liver disease)
  - Obesity

Adults aged 40 years and older or adults who are at high risk for type 2 diabetes according to a risk calculator (e.g., the Canadian Diabetes Risk Assessment Questionnaire [CANRISK][*,17]) should be tested at least every 3 years. Adults who are

[*] The Canadian Diabetes Risk Assessment Questionnaire (CANRISK) is a statistically valid tool; however, CANRISK has not been validated in individuals younger than 40 years of age and should be used with caution in this age group.

very high risk according to a risk calculator or adults with additional risk factors for type 2 diabetes should be screened earlier with more frequent follow-up (every 6 to 12 months). Risk factors include:

- Being 40 years of age and older
- Having a first-degree relative with type 2 diabetes
- Being of African, Arab, South Asian, or Hispanic descent
- Being a member of an Indigenous group (e.g., First Nations, Inuit, and Métis)
- Low socioeconomic status
- A history of prediabetes
- A history of gestational diabetes
- A history of delivery of a macrosomic infant
- The presence of end-organ damage associated with diabetes
- The presence of vascular risk factors (dyslipidemia, hypertension, overweight, abdominal obesity, smoking)
- The presence of associated diseases (history of pancreatitis, polycystic ovary syndrome, acanthosis nigricans, hyperuricemia/gout, nonalcoholic fatty liver disease, psychiatric disorders [bipolar disorder, depression, schizophrenia], human immunodeficiency virus [HIV] infection, obstructive sleep apnea, cystic fibrosis)
- Use of drugs associated with diabetes (glucocorticoids, atypical antipsychotics, statins, highly active antiretroviral therapy, anti-rejection drugs)

Rationale

The earlier prediabetes or type 2 diabetes is discovered, the sooner preventive measures can be taken to improve glycemic control. Early identification of prediabetes can help to slow or prevent progression to type 2 diabetes (see quality statement 2), and early identification of prediabetes and type 2 diabetes can prevent or lessen the damage that is often associated with type 2 diabetes–related complications (see quality statement 8).[1]

Health care providers should consider people's individual risk factors for type 2 diabetes annually.[1,14] Those who are found to be at risk of developing prediabetes or type 2 diabetes should be tested at a frequency that is determined by their individual risk factors.[1,14-16]

What This Quality Statement Means

For People Concerned They May Have Prediabetes or Type 2 Diabetes

If you or your care provider believes you are at risk for prediabetes or type 2 diabetes, they will offer you a blood test to see if you have increased sugar in your blood. They will also talk with you about how often you will need to have your blood retested.

For Care Providers

Create an opportunity to ensure that you are monitoring each person annually for type 2 diabetes risk factors. This could be done in a variety of ways: reviewing their chart, having people do a diabetes risk questionnaire, through telehealth, or during a periodic health visit.[18] If a person is found to be at increased risk for prediabetes or type 2 diabetes, offer diagnostic testing. Planning for testing should be done with the individual or community with appropriate dialogue, respect, and careful planning.[19]

For Health Services Planners

Ensure that systems and resources are in place that support annual review of individual risk factors for type 2 diabetes and blood testing for type 2 diabetes at regular intervals when needed. Ensure inclusion and integration of cultural practices and approaches within screening and testing services.[19] Screening and prevention strategies should be implemented in collaboration with individuals with diabetes, caregivers, community leaders, schools, health care providers, and funding agencies to engage entire communities.[19]

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people who are assessed annually by their care provider for type 2 diabetes risk factors
- Percentage of people who are at increased risk of developing prediabetes and type 2 diabetes who are tested for type 2 diabetes using the appropriate blood test at their predetermined interval

Note: We recommend stratifying the data for these indicators into categories that focus on the population groups that are most at risk, including (but not limited to):

- Being of African, Arab, South Asian, or Hispanic descent
- Being a member of an Indigenous group (e.g., First Nations, Inuit, and Métis)
- Low socioeconomic status

Measurement details for these indicators, as well as indicators to measure overarching goals for the entire quality standard, are presented in Appendix 1.

2

Reducing the Risk of Type 2 Diabetes

People with prediabetes and their caregivers collaborate with their care provider to create a tailored plan to prevent or slow the progression from prediabetes to type 2 diabetes.

Sources: American Diabetes Association, 2018[14] | Diabetes Canada, 2018[1]

Definition

Plan to prevent or slow the progression to type 2 diabetes[1,14,15]: A series of interventions offered to people with prediabetes. Its goal is to prevent or slow progression to type 2 diabetes. The plan should be provided in ways and at times and frequencies that are tailored to the needs of the individual, caregivers, and community. The plan should be culturally appropriate and should include:

- Education, counselling, and coaching on healthy behaviour changes, including improved nutrition and regular physical activity (see quality statement 4)
- Individualized weight management interventions for people who would benefit from moderate weight loss despite having implemented healthy behaviour changes (see quality statement 4)
- Testing for type 2 diabetes at least annually (see quality statement 1)
- Screening for and treatment of modifiable risk factors for cardiovascular disease (see quality statement 9)
- Pharmacological therapy for prediabetes where appropriate
- Assessment of diabetogenic medications (e.g., glucocorticoids and atypical antipsychotics [olanzapine, clozapine]). If a person is taking diabetogenic medications, weigh the risks and benefits of selecting alternative medications
- An assessment of the social determinants of health and provision of support to mitigate barriers to healthy behaviours

Rationale

The progression from prediabetes to type 2 diabetes can be prevented or slowed through healthy eating and regular physical activity.[1,15] The health benefits of intervening early to prevent or slow the progression to type 2 diabetes include lowered rates of cardiovascular disease, renal failure, blindness, and premature death.[1] Prevention programs should be codeveloped in a culturally sensitive way involving the community, individual, and caregivers to ensure relevance and cultural appropriateness.[1,19]

What This Quality Statement Means

For People With Prediabetes

If you have been told that you have prediabetes, you should be offered a prevention plan that includes coaching and support to help you learn how to prevent (or slow) prediabetes from becoming type 2 diabetes. Your care provider should also monitor you closely for type 2 diabetes and do an assessment of your cardiovascular health.

For Care Providers

Offer people with prediabetes a type 2 diabetes prevention plan. If they are ready or interested in participating, ensure that the plan is relevant to their social and cultural contexts. Work with communities to codevelop relevant, culturally appropriate prevention plans. When caregivers or the community are involved in the person's care, and if the person consents, include them as much as possible in discussions and coaching.

For Health Services Planners

Ensure that appropriate time and resources are available so that care providers can help foster preventive skills in people with prediabetes. Support processes that enable care providers to work with communities to codevelop relevant, culturally appropriate prevention plans. Build in processes that allow care providers to incorporate socially and culturally relevant content that also adheres to current clinical practice guidelines.[1]

QUALITY INDICATOR: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with prediabetes who participate in a plan to prevent or slow the progression from prediabetes to type 2 diabetes

Measurement details for this indicator, as well as indicators to measure overarching goals for the entire quality standard, are presented in Appendix 1.

3

Identifying and Assessing Mental Health Needs

People with type 2 diabetes are screened for psychological distress and mental health disorders on a regular basis using recognized screening questions or validated screening tools. People who screen positive for a mental health disorder are referred to a health care professional with expertise in mental health for further assessment and treatment.

Sources: American Diabetes Association, 2018[14] | Diabetes Canada, 2018[1] | National Institute for Health and Care Excellence, 2015[20] (adults), 2015[16] (children) | Scottish Intercollegiate Guidelines Network, 2017[21]

Definitions

Screened: Screening for signs of psychological distress and symptoms of common mental health disorders provides a mechanism for early identification of people in need of further assessment, care planning, and initiation of treatment and supports (where appropriate). Screening can be performed by any trained member of the health care team using validated, age-appropriate screening tools or recognized screening questions.

Regular basis: Evidence on the optimal timing and frequency of screening is inconsistent. The Type 2 Diabetes Quality Standard Advisory Committee agrees that, ideally, people should be screened for the presence of psychological distress and symptoms of common mental health disorders during the following times:

- At the time of diagnosis
- On a periodic basis (at least annually)
- As clinically indicated or due to self-reported need, not achieving treatment goals, or persistently poor metabolic control

- When there is a significant change in a person's condition, treatment, or life circumstance

Psychological distress: Examples of psychological distress include diabetes distress and fear of hypoglycemia. Diabetes distress is a form of emotional distress resulting from living with diabetes and the demands of daily self-management.[22] Symptoms of diabetes distress may present similarly to those of major depressive disorder but lack the severity to meet the criteria in the *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition (DSM-5).[22] Diabetes distress is associated with poorer glycemic control and decreased self-management.[14]

If psychological distress is identified, the interprofessional diabetes health care team should address the areas of diabetes self-care that are most relevant to the person. If the person is not connected to an interprofessional diabetes health care team, they should be referred for diabetes self-management education and support (see quality statement 6) to address the areas of diabetes self-care that are most relevant to them. If they continue to experience distress or their self-care remains impaired after tailored diabetes education, the health care professional should connect or refer their patient, with their permission, to a mental health professional.

Mental health disorder: Examples of common comorbid mental health disorders in people with diabetes include major depressive disorder, anxiety disorders, eating disorders and disordered eating behaviours, and stress-related disorders.

Recognized screening questions: Examples are presented below. Answering yes to any of these questions is considered a positive screen and requires assessment of symptom severity using a validated screening tool.

Screening questions for anxiety[23]:

- In the past month, have you been bothered by feeling worried, tense, or anxious most of the time?
- Are you frequently tense, irritable, and having trouble sleeping?

Screening questions for depression[24]:

- In the last month, have you been bothered by little interest or pleasure in doing things?
- In the last month, have you been feeling down, depressed, or hopeless?

Validated screening tools: Examples include:

- **Anxiety symptoms**—Generalized Anxiety Disorder 7-item (GAD-7) scale; Revised Children's Anxiety and Depression Scale (RCADS); Multidimensional Anxiety Scale for Children (MASC); Geriatric Anxiety Inventory (GAI)
- **Depressive symptoms**—Patient Health Questionnaire (PHQ-9); Quick Inventory of Depressive Symptomatology (Self-Rated) (QIDS-SR); Beck Depression Inventory (BDI-I or BDI-II); Zung Self-Rating Depression Scale; Center for Epidemiologic Studies Depression Scale (CES-D)
- **Diabetes-related emotional distress**—Diabetes Distress Scale (DDS-2, DDS-17); Problem Areas in Diabetes (PAID-5, PAID-20) scale
- **Disordered eating and eating disorders**—Diabetes Eating Problem Survey (Revised) (DEPS-R); modified Sick-Control-One-Fat-Food (mSCOFF) tool; modified Eating Disorder Inventory (mEDI)

Screen positive: A person screens positive for diabetes distress or symptoms of a specific mental health disorder if they have a certain number of positive responses to questions on a validated tool. Each screening tool has its own recommended cut-off score for a positive screen. Further evaluation is necessary for people who screen positive.

Health care professional with expertise in mental health: A health care professional with training in mental health and/or psychosocial issues can be a psychologist, psychiatrist, social worker, primary care provider (family physician or nurse practitioner), or occupational therapist. This person should preferably also have knowledge of type 2 diabetes. This clinician may be a member of the health care team or be enlisted by referral. People with type 2 diabetes should be referred to another mental health provider whenever their condition or care needs exceed their current provider's scope of practice or expertise.

Rationale

Depression, anxiety, and psychological distress are more common in people with diabetes than in the general population.[1,23,24] The demands of diabetes management, risk of complications, and worries of hypoglycemia can place emotional stress on people with type 2 diabetes. This might precipitate or exacerbate psychological challenges present for other reasons. Additionally, these stresses might interfere with a person's ability to manage their diabetes.[1]

The mental health comorbidities of diabetes are associated with poorer glycemic control, decreased participation in diabetes self-management activities (e.g., physical activity, healthy eating, taking diabetes medications), increased functional impairment, increased risk of medical complications associated with diabetes, a decreased quality of life, and increased health care costs.[1,23,25]

Screening does not provide a diagnosis of a mental health disorder; however, it identifies symptoms, quantifies severity in a time-limited setting, and indicates who may need further assessment and treatment. It is important to consider the applicability of validated tools for appropriate assessment of specific populations; factors to consider include age and developmental stage, language, cultural relevance, and cognitive ability. For children, screening questions should include developmentally appropriate language and be based on criteria in the *Diagnostic and Statistical Manual of Mental Disorders,* 5th edition (DSM-5).

For detailed quality statements related to the identification, diagnosis, and treatment of major depression, anxiety disorders (including generalized anxiety disorder, specific phobias, social anxiety disorder, and panic disorder), and obsessive-compulsive disorder, please refer to our quality standards *Major Depression*,[26] *Anxiety Disorders*,[27] and *Obsessive-Compulsive Disorder*.[28]

What This Quality Statement Means

For People With Type 2 Diabetes

Managing diabetes is demanding, and it can impact your emotional well-being and quality of life. It is normal to sometimes feel burnt out or tired of managing your diabetes. Maintaining your mental and emotional health is important to help you take care of yourself and your diabetes and important for your overall well-being. Your health care professional should ask about your mental health and how diabetes is impacting you, and offer you treatment and support if you need it.

For Care Providers

Be alert to the possibility of mental health concerns and psychological distress in people with type 2 diabetes. Use recognized screening questions or validated screening tools (when available) to identify people who might benefit from further comprehensive assessment and appropriate treatment. Collaborate with individuals to determine the most effective next steps based on the severity of their symptoms and their individual needs and preferences.

For Health Services Planners

Ensure care providers receive training in the recognition, identification, and provision of information and counselling on psychological distress and mental health disorders for people with type 2 diabetes. Ensure that care providers have the knowledge and resources to refer people to a mental health professional (as required). Access to and waitlists for publicly funded mental health professionals and services vary across the province and are a common barrier to care. Systems, processes, and resources need to be in place so that people with type 2 diabetes who require a consultation with a mental health professional can be appropriately triaged and have timely access.

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with type 2 diabetes who were screened for psychological distress and mental health disorders within the past year
- Average wait time between when a person with type 2 diabetes is referred to and seen by a health care professional with expertise in mental health
- Percentage of people with type 2 diabetes with one or more urgent acute care visits for a mental health disorder in the past year

Measurement details for these indicators, as well as indicators to measure overarching goals for the entire quality standard, are presented in Appendix 1.

4

Healthy Behaviour Changes

People with prediabetes or type 2 diabetes receive education and coaching on healthy behaviour changes, including increasing physical activity, improving diet, managing stress, and quitting smoking. People who have concerns about their weight despite implementing healthy behaviour changes are offered individualized weight management interventions.

Sources: American Diabetes Association, 2018[14] | Diabetes Canada, 2018[1] | Institute for Clinical Systems Improvements, 2014[15] | National Institute for Health and Care Excellence, 2015[20] (adults), 2015[16] (children) | Scottish Intercollegiate Guidelines Network, 2017[21] | U.S. Department of Veterans Affairs/U.S. Department of Defense, 2017[29]

Definitions

Healthy behaviour changes[1,14-16,20,21,29]: Information, education, and coaching should be tailored to meet the goals of people with prediabetes or type 2 diabetes. Content should be age appropriate, incorporate socially and culturally relevant content, and address the following:

- Education and counselling on healthy eating
- Education and counselling on physical activity
- An assessment of the social determinants of health and provision of supports to mitigate any barriers to healthy behaviours
- Stress management counselling
- Smoking cessation counselling for people who smoke

Weight management interventions[1,14,15,21,29]: For some people with prediabetes and type 2 diabetes who are overweight, healthy behaviour changes may lead to weight

loss. For those who need additional support to attain a healthy weight, the following weight management interventions should be considered and tailored to meet the goals of people with prediabetes or type 2 diabetes:

- Assess the effects of patients' prescribed medications on their weight. Balance the risks and benefits of continuing medications that may cause weight gain
- Consider weight loss medications (not appropriate for all people)
- Consider bariatric surgery (not appropriate for all people)

Rationale

Education and coaching should be provided to people with prediabetes and type 2 diabetes, with the goal of achieving healthy behaviour changes.[1] People with prediabetes and type 2 diabetes who are overweight despite healthy behaviour changes should have access to and be offered individualized weight management interventions. Evidence shows that even modest weight loss, if sustained, can improve glycemic control, reduce blood pressure, and lessen the need for glucose-lowering medications in patients with type 2 diabetes.[14,21]

What This Quality Statement Means

For People With Prediabetes or Type 2 Diabetes

If you have prediabetes or type 2 diabetes your care provider will talk to you and your caregivers or community, if you choose to include them, about healthy changes that you can make in your life. This information should include learning about healthy diet, physical activity and exercise, stress management, and quitting smoking.

For Care Providers

Offer people with prediabetes or type 2 diabetes education and coaching on healthy behaviour changes that incorporate socially and culturally relevant content. If the person is concerned about their weight, despite adopting healthy behaviours into their lifestyle, offer them weight management interventions.

For Health Services Planners

Ensure care providers have enough time and resources to deliver education and counselling about healthy behaviour changes to people with prediabetes and type 2 diabetes. Build in processes that allow care providers to incorporate socially and culturally relevant content through consultation with community members and caregivers.

QUALITY INDICATOR: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with prediabetes or type 2 diabetes who receive education and counselling on healthy behaviour changes

Measurement details for this indicator, as well as indicators to measure overarching goals for the entire quality standard, are presented in Appendix 1.

5

Setting and Achieving Glycemic Targets

People with type 2 diabetes, in collaboration with their health care team, set individualized glycemic targets, including glycated hemoglobin (hemoglobin A1C) and other available measures of glycemia. All available data are used to assess whether individualized glycemic targets are achieved and to guide treatment decisions and self-management activities.

Sources: American Diabetes Association, 2018[14] | Diabetes Canada, 2018[1] | Institute for Clinical Systems Improvements, 2014[15] | National Institute for Health and Care Excellence, 2015[20] (adults), 2015[16] (children) | Scottish Intercollegiate Guidelines Network, 2017[21] | U.S. Department of Veterans Affairs/U.S. Department of Defense, 2017[29]

Definitions

Hemoglobin A1C[1,14]**:** A mean index measure of the percentage of hemoglobin that is glycated (i.e., attached to glucose) over the previous 3 months. The hemoglobin A1C test has a strong predictive value for diabetes complications.[1] Hemoglobin A1C targets should be tailored to each person with type 2 diabetes and should be decided in collaboration with the person and their caregivers and community (where appropriate), reflecting the person's preferences, needs, and values. The following target hemoglobin A1C values should be considered:

- Less than or equal to 7.0% for most people with type 2 diabetes
- Less than or equal to 6.5% in adults who are at low risk for hypoglycemia
- Less than 6.0% for children within the first 6 months of diagnosis

- 7.1% to 8.0% for people who are functionally dependent
- 7.1% to 8.5% for people with a limited life expectancy, the frail elderly, or people with dementia

Note: Measuring hemoglobin A1C is not recommended for people who are very near the end of life

Other available measures of glycemia[1]: Any self-monitoring glucose device (e.g., blood glucose meters that use fingerstick blood glucose measurements, a flash glucose monitor or a continuous glucose monitor). Targets for data from self-monitoring devices should be tailored to each person with type 2 diabetes. Not all people with type 2 diabetes use a self-monitoring device.

All self-monitoring glucose devices provide glucose values. Continuous glucose monitoring and flash glucose monitoring devices provide additional information, including:

- Percentage of time in target glucose range
- Percentage of time in hypoglycemia range
- Percentage of time in hyperglycemia range
- Glycemic variability

Rationale

Achieving optimal glycemic targets is fundamental to diabetes management and reduces both the risk and progression of diabetes-related complications in people with diabetes.[1] Maintaining an optimal range between high and low blood sugars is a delicate balance. Chronic sustained hyperglycemia damages blood vessels and nerves, leading to complications that include blindness and kidney failure as well as high rates of heart disease. However, hypoglycemia can also have very serious consequences, and is therefore a key barrier to achieving glycemic targets.[1]

All available data should be used to assess whether individualized glycemic targets are achieved and to guide treatment decisions and self-management activities. This could include not only hemoglobin A1C values, but also data from any self-monitoring glucose device a person might use, such as a blood glucose meter (using fingerstick blood glucose measurements), with or without continuous glucose monitoring or flash glucose monitoring.[1]

What This Quality Statement Means

For People With Type 2 Diabetes

Work with your diabetes health care team to determine your target hemoglobin A1C value and glucose targets from any self-monitoring devices you may be using. Try to keep your glucose levels as close to your target range as possible. This will help to delay or prevent complications of diabetes. You should be offered treatment and support to help you reach and stay within your target range.

For Care Providers

Work with people with type 2 diabetes to determine their individualized hemoglobin A1C target. Offer support to help them reach and stay at their targets. When assessing whether a person's individualized glycemic targets have been achieved and when adjusting therapy, consider the hemoglobin A1C value in conjunction with all available measures of glycemia. Work with people who have not achieved their glycemic target; assess their individual needs and access appropriate resources to help meet these needs, such as self-management education and additional support.

For Health Services Planners

Ensure that systems, processes, and resources are in place so that people with diabetes and care providers can determine hemoglobin A1C target values and assess achievement of glycemic targets (considering hemoglobin A1C values in conjunction with all available measures of glycemia). Use this information to inform treatment changes. Ensure that systems are in place for care providers (teams) to offer people with type 2 diabetes an approach to improving glycemic control if this has not yet been achieved. Prioritize equitable access to resources necessary to meet their identified needs, such as self-management education and additional support.

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with type 2 diabetes who have had a hemoglobin A1C test
- Percentage of people with type 2 diabetes who have a documented individualized hemoglobin A1C target range
- Percentage of people with type 2 diabetes who use a self-monitoring glucose device who have a documented individualized target glucose range

- Percentage of people with type 2 diabetes and their families and caregivers (where appropriate) who report feeling involved in determining their individualized hemoglobin A1C target
- Percentage of people with type 2 diabetes whose most recent hemoglobin A1C value was within their individualized hemoglobin A1C target range

Measurement details for these indicators, as well as indicators to measure overarching goals for the entire quality standard, are presented in Appendix 1.

6

Access to a Collaborative Interprofessional Care Team

People with prediabetes or type 2 diabetes and their caregivers have access to a collaborative interprofessional care team to comprehensively manage their prediabetes or diabetes and additional health care needs.

Sources: American Diabetes Association, 2018[14] | Diabetes Canada, 2018[1]

Definition

Collaborative interprofessional care team: The team's composition should be tailored to the care needs of the individual and the community in which they live. The team may include, but is not limited to, the following care providers:

- Chiropodist
- Elder
- Mental health professional (such as a psychologist or psychiatrist)
- Pediatric or adult endocrinologist
- Peer support provider (such as a community health worker or peer educator)
- Pharmacist
- Primary care provider (such as a family physician, internal medicine physician, nurse practitioner, or pediatrician)
- Registered dietitian
- Registered kinesiologist or registered physiotherapist
- Registered nurse (such as a foot care nurse or diabetes nurse educator)
- Social worker

Rationale

A team of care providers with different roles, working collaboratively, can facilitate effective management of a person's prediabetes or type 2 diabetes and any complications, comorbidities, and additional health needs.[1,14] The person with prediabetes or type 2 diabetes should be at the centre of the care team and should be aware of who is on their team. They may require a variety of different providers and services to care for their physical health, mental health, and social needs.

Models of delivering team-based care can be adapted to the location and context where care is offered, and may be organized, staffed, and accessed in various ways to best support local or community needs. Each member of the team should have a clear, shared understanding of their role in meeting the person's needs. Information about the person with prediabetes or type 2 diabetes is made readily available to all members of the person's care team, including the person and their caregivers.

What This Quality Statement Means

For People With Type 2 Diabetes

You should have access to a health care team that manages your diabetes care. Your health care team may include doctors, nurses, pharmacists, social workers, and others. You, your caregivers, and community members should be treated as important members of your health care team. This means your questions, concerns, observations, and goals are discussed and incorporated into your care plan, and you are supported in playing an active role in your own care.

For Care Providers

Provide support and ensure that your patient has a care team that can address their physical health, mental health, and social needs and that has the knowledge, skills, and judgment to manage their type 2 diabetes and associated conditions. Connect with additional providers as needed. Involve people and their caregivers and families in decisions about their own care.

For Health Services Planners

Ensure systems, processes, and resources are in place so that people of all ages with type 2 diabetes have timely access to an interprofessional health care team with

expertise in type 2 diabetes. Ensure teams have the ability to expand or consult with additional care providers as needed.

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Local availability of interprofessional diabetes health care teams with training in type 2 diabetes
- Percentage of people with prediabetes or type 2 diabetes who have received care from an interprofessional diabetes health care team with training in type 2 diabetes

Measurement details for these indicators, as well as indicators to measure overarching goals for the entire quality standard, are presented in Appendix 1.

7

Promoting Self-Management Skills

People with prediabetes and type 2 diabetes and their caregivers collaborate with their interprofessional care team to create a tailored self-management plan based on their needs and preferences, with the goal of enhancing their ability to participate in their diabetes management.

Sources: American Diabetes Association, 2018[14] | Diabetes Canada, 2018[1] | Institute for Clinical Systems Improvements, 2014[15] | National Institute for Health and Care Excellence, 2015[20] (adults), 2015[16] (children) | Ontario Health Technology Advisory Committee, 2013[30] | Scottish Intercollegiate Guidelines Network, 2017[21] | U.S. Department of Veterans Affairs/U.S. Department of Defense, 2017[29]

Definition

Self-management plan[1,14,1,31,32]: Culturally appropriate, patient-centred, theory-driven information, support, and coaching. Developmentally appropriate involvement of children should be encouraged. Content should be offered at diagnosis and as needed, either face-to-face or through telehealth technologies (e.g., telephone, web-based, or virtual) to facilitate effective communication. Components of the plan should be reassessed at least annually and sooner if complications arise or during transitions in care. The following content should be included:

- Diagnosis and disease process
- Medications (including insulin injection techniques and sick day considerations)
- Hypoglycemia management
- Glucose monitoring, including targets for glucose control (self-monitoring of blood glucose and hemoglobin A1C levels, available monitoring devices, and interpreting and using results for decision-making) (see quality statement 5)
- Elements of the care plan
- Healthy behaviours and how to mitigate barriers to these behaviours (see quality statement 4)

- Dental care
- Daily foot care and inspection
- How illness can affect glucose control
- Driving precautions
- How to develop an action plan
- How to set realistic goals
- Problem-solving skills
- Complications of type 2 diabetes (see quality statement 8)
- Preconception counselling starting at puberty until menopause (see the *Diabetes in Pregnancy* quality standard)
- Identifying and assessing mental health needs (see quality statement 3)
- Spiritual and emotional wellness

Rationale

Promoting self-management empowers people with prediabetes and type 2 diabetes to take control of their health and actively participate in achieving their best possible outcomes.[1,14] Ongoing education and coaching through experiential learning, practice, and support should be tailored to the individual and their caregivers.[1,29] The provision of self-management education and support for people with type 2 diabetes has been shown to improve glycemic control, self-efficacy, and self-care behaviours and to reduce diabetes-related distress and foot complications.[1] Culturally appropriate self-management strategies that involve the caregivers and community have been shown to increase diabetes-related knowledge, promote self-management behaviours, lower hemoglobin A1C levels, and improve quality of life.[1,31,32]

What This Quality Statement Means

For People With Prediabetes and Type 2 Diabetes

Starting at diagnosis, you should be offered coaching and support to help you learn about managing your prediabetes or type 2 diabetes effectively. Your caregivers can also be offered this information and coaching, if you choose to include them.

For Care Providers

To promote self-management, offer evidence-based information and coaching about prediabetes or type 2 diabetes starting at diagnosis. This coaching should be tailored to meet the person's learning needs and presented in a format and at times that are most appropriate for the person. Incorporate socially and culturally relevant content while

also adhering to current clinical practice guidelines.[1] When caregivers or the community are involved in the person's care, and if the person consents, include them as much as possible in discussions and coaching.

For Health Services Planners

Ensure that appropriate time and resources are available for care providers to support the development of self-management skills in people with prediabetes or type 2 diabetes. Build in processes that allow care providers to incorporate socially and culturally relevant content tailored to the individual while also adhering to current clinical practice guidelines.[1]

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with prediabetes or type 2 diabetes who participate in a self-management plan
- Percentage of people with prediabetes or type 2 diabetes and their families and caregivers (where appropriate) who report feeling confident managing their condition

Measurement details for these indicators, as well as indicators to measure overarching goals for the entire quality standard, are presented in Appendix 1.

8

Screening for Complications and Risk Factors

People with type 2 diabetes are screened for complications and risk factors at diagnosis and at regular follow-up intervals.

Sources: American Diabetes Association, 2018[14] | Diabetes Canada, 2018[1] | Health Quality Ontario, 2017[33] | National Institute for Health and Care Excellence, 2015[20] (adults), 2015[16] (children) | Scottish Intercollegiate Guidelines Network, 2017[21] | U.S. Department of Veterans Affairs/U.S. Department of Defense, 2017[29]

Definitions

Complications and risk factors: The following list is not exhaustive but includes common complications and risk factors in people with type 2 diabetes that can be present at diagnosis or develop over time. People with type 2 diabetes should be screened for these at diagnosis and at regular intervals thereafter:

- Abnormal sleep pattern and duration
- Cardiovascular disease (see quality statement 9)
- Chronic kidney disease
- Diabetic foot ulcers
- Dyslipidemia
- Erectile dysfunction
- Gum disease
- Hypertension
- Mental health conditions (see quality statement 3)
- Neuropathy
- Retinopathy

Regular follow-up intervals[1]: Complications and risk factors associated with type 2 diabetes should be assessed on an ongoing basis. Some are checked at every visit, some

annually, and others at times that are tailored to the individual's case and specific needs. Below are suggestions on when to reassess people with type 2 diabetes for common complications and risk factors.

At every appointment people with type 2 diabetes should be:

- Asked about their feet
- Assessed for hypertension

The following complications or risk factors should be reassessed at least annually:

- Chronic kidney disease
- Dyslipidemia (children should be assessed annually whereas adults should be assessed on individualized intervals [see section below])
- Foot ulcers (visual comprehensive foot evaluation to prevent foot ulcers and assess for amputation risk); see the *Diabetic Foot Ulcers*[33] quality standard for more information
- Gum disease
- Neuropathy
- Retinopathy (children should be assessed annually whereas adults should be assessed at intervals determined by individual need [see section below])

Complications or risk factors that should be assessed regularly, at times that are tailored to the individual's case and their specific needs:

- Abnormal sleep pattern and duration
- Cardiovascular disease (see quality statement 9)
- Dyslipidemia (adults)
- Erectile dysfunction
- Mental health conditions (see quality statement 3)
- Retinopathy (adults)

Rationale

Individuals with type 2 diabetes often have multiple complications that can be present as early as at the time of diagnosis.[1,21] Complications and risk factors can confound treatments, diminish quality of life, and challenge management and self-management.[1] Appropriate care for someone with type 2 diabetes should include screening for and treating these complications and risk factors as soon as possible.

What This Quality Statement Means

For People With Type 2 Diabetes

Around the time of diagnosis, your care provider should do an assessment, arrange any necessary tests, and ask you about other signs and symptoms you may be experiencing. This is done to prevent diabetes-related problems or to catch them before they get worse. After this assessment, your care provider will continue to check you for these possible complications and risk factors.

For Care Providers

Screen people for type 2 diabetes complications and risk factors at diagnosis, and plan follow-up assessments as needed. Offer diagnostic testing and assessments, as necessary. Screening should be respectful and culturally appropriate, and planned with the individual or community using ongoing dialogue.[19,1]

For Health Services Planners

Ensure that systems and resources are in place to allow care providers to screen people with type 2 diabetes for complications and risk factors at the appropriate frequency. Ensure that screening programs support inclusion and integration of cultural practices and approaches.[19] Screening for complications and risk factors of type 2 diabetes should be implemented in collaboration with people with diabetes, caregivers, community leaders and organizations, health care providers, schools, and funding agencies.[19]

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with type 2 diabetes who are screened at diagnosis for complications and risk factors associated with type 2 diabetes
- Percentage of people with type 2 diabetes who, at every appointment, are:
  - Asked about their feet
  - Assessed for hypertension
- Percentage of people with type 2 diabetes who are assessed annually for:
  - Chronic kidney disease
  - Foot ulcers
  - Gum disease
  - Neuropathy

- Percentage of people with type 2 diabetes who are assessed at times tailored to their individual needs for:
  - Abnormal sleep pattern and duration
  - Cardiovascular disease
  - Erectile dysfunction
  - Mental health conditions
- Percentage of adults with type 2 diabetes who are assessed at times tailored to their individual needs for:
  - Dyslipidemia
  - Retinopathy
- Percentage of children with type 2 diabetes who are assessed annually for:
  - Dyslipidemia
  - Retinopathy

Measurement details for these indicators, as well as indicators to measure overarching goals for the entire quality standard, are presented in Appendix 1.

9

Cardiovascular Protection

People with type 2 diabetes receive care that incorporates an individualized cardiovascular risk reduction approach.

Sources: American Diabetes Association, 2018[14] | Diabetes Canada, 2018[1] | Institute for Clinical Systems Improvements, 2014[15] | National Institute for Health and Care Excellence, 2015[20] (adults) | Scottish Intercollegiate Guidelines Network, 2017[21]

Definition

Cardiovascular risk reduction approach: An approach to care that supports and enhances cardiovascular protection for people with type 2 diabetes and that is tailored to meet their individual needs. The cardiovascular risk reduction approach should include the following[1,14,20,21]:

- Glycemic control (see quality statement 5)
- Blood pressure management
- Healthy behaviour changes (see quality statement 4)
- Vascular-protective medications (for most adults with diabetes)
- Lipid management

Rationale

People with type 2 diabetes are more likely to develop cardiovascular disease, and often do so at a younger age than those without diabetes.[1] Diabetes is a catalyst of vascular inflammation, which accelerates vascular age and increases the risk of developing atherosclerosis.[1,14] Atherosclerosis in diabetes can manifest as myocardial infarction, stroke, and amputation.[1] Diabetes is also associated with an increased risk of other cardiovascular diseases, such as heart failure.[1]

Healthy behaviour interventions (e.g., quitting smoking, regular physical activity, improved glycemic control, blood pressure control) and medications aimed at

cardiovascular disease risk reduction can reduce morbidity and mortality, and are an important component of diabetes management.[1]

What This Quality Statement Means

For People With Type 2 Diabetes

Having type 2 diabetes may put you at risk for heart disease. You can reduce your risk of heart disease by keeping your blood sugar within target, getting your blood pressure to a good range, taking up healthy behaviours such as increasing your physical activity and eating a healthy diet, and taking medications that protect your blood vessels and lower your lipids. Your interprofessional care team will speak to you about these options.

For Care Providers

Develop an individualized cardiovascular risk reduction approach for your patients with type 2 diabetes. This approach should consider glycemic targets, blood pressure management, coaching and education on healthy behaviours, and evidence-based pharmacotherapy for vascular protection and lipid management.

For Health Services Planners

Ensure that systems and resources are in place to allow care providers to treat people with type 2 diabetes in a way that incorporates a cardiovascular risk reduction approach. Ensure that the approach supports the inclusion and integration of cultural practices and approaches.[19]

QUALITY INDICATOR: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with type 2 diabetes who receive care that incorporates an individualized cardiovascular risk reduction approach

Measurement details for this indicator, as well as indicators to measure overarching goals for the entire quality standard, are presented in Appendix 1.

Appendices

Appendix 1. Measurement to Support Improvement

The Prediabetes and Type 2 Diabetes Quality Standard Advisory Committee identified some overarching goals for this quality standard. These goals were mapped to indicators that can be used to monitor the progress being made to improve care for people with type 2 diabetes in Ontario. Some indicators are provincially measurable, while some can be measured using only locally sourced data.

Collecting and using data associated with this quality standard is optional. However, data will help you assess the quality of care you are delivering and the effectiveness of your quality improvement efforts.

We realize this standard includes a lengthy list of indicators. We've given you this list so you don't have to create your own quality improvement indicators. We recommend you identify areas to focus on in the quality standard and then use one or more of the associated indicators to guide and evaluate your quality improvement efforts.

Where possible, data for provincially measured indicators is reported by various equity stratifications, such as patient socioeconomic and demographic characteristics, such as age, income, region, rurality, and sex.

To assess equitable delivery of care, you can collect data for locally measured indicators by patient socioeconomic and demographic characteristics, such as age, education, gender, income, language, race, and sex.

Our measurement guide for prediabetes and type 2 diabetes provides more information and concrete steps on how to incorporate measurement into your planning and quality improvement work.

How to Measure Overall Success

Indicators That Can Be Measured Using Provincial Data

Percentage of people with diabetes who have had an urgent acute care visit for diabetes

- **Reported by:**
  - **Emergency department visits**
  - **Hospital admissions**
- Denominator: total number of people with diabetes
- Numerator: number of people in the denominator who have had an urgent acute care visit for diabetes
- Note: potential stratifications are unplanned emergency department visits for diabetes (main diagnosis or any problem) and non-elective hospital admissions for diabetes (main diagnosis or any problem)
- Data sources: Discharge Abstract Database (DAD), National Ambulatory Care Reporting System (NACRS), Ontario Diabetes Database (ODD)

Percentage of people who had an urgent acute care visit for diabetes who visited the emergency department or were admitted to hospital for diabetes within 30 days

- **Reported by:**
  - **Emergency department visits**
  - **Hospital admissions**
- Denominator: total number of people who had an urgent acute care visit for diabetes
- Numerator: number of people in the denominator who visited the emergency department or were admitted to hospital for diabetes within 30 days
- Data sources: DAD, NACRS

Percentage of people with diabetes who have had a diabetes-related complication

- **Reported by:**
  - **Amputations (above-ankle, below-ankle)**
  - **Cardiovascular complications**
  - **End-stage renal disease**
  - **Retinopathy**
  - **Skin and soft tissue infection or foot ulcer**
- Denominator: total number of people with diabetes
- Numerator: number of people in the denominator who have had a diabetes-related complication
- Data sources: DAD, NACRS, ODD, Ontario Health Insurance Plan (OHIP)

Indicators That Can Be Measured Using Only Local Data

Percentage of people who are at increased risk of developing prediabetes and type 2 diabetes who are tested for type 2 diabetes using the appropriate blood test at their predetermined interval

- Denominator: total number of people who are at increased risk of developing prediabetes and type 2 diabetes
- Numerator: number of people in the denominator who are tested for type 2 diabetes using the appropriate blood test at their predetermined interval
- Data source: local data collection

Percentage of people with type 2 diabetes and their families and caregivers (where appropriate) who report feeling confident managing their condition

- Denominator: total number of people with type 2 diabetes and their families and caregivers (where appropriate)
- Numerator: number of people in the denominator who report feeling confident managing their condition
- Data source: local data collection
- Note: this indicator is also included in quality statement 7

Percentage of people with prediabetes who do not progress to type 2 diabetes

- Denominator: total number of people with prediabetes
- Numerator: number of people in the denominator who do not progress to type 2 diabetes
- Data source: local data collection

How to Measure Improvement for Specific Statements

Quality Statement 1: Screening for Risk Factors and Testing for Prediabetes and Type 2 Diabetes

Percentage of people who are assessed annually by their care provider for type 2 diabetes risk factors

- Denominator: total number of people who have a care provider
- Numerator: number of people in the denominator who are assessed annually by their care provider for type 2 diabetes risk factors
- Data source: local data collection

Percentage of people who are at increased risk of developing prediabetes and type 2 diabetes who are tested for type 2 diabetes using the appropriate blood test at their predetermined interval

- Denominator: total number of people who are at increased risk of developing prediabetes and type 2 diabetes
- Numerator: number of people in the denominator who are tested for type 2 diabetes using the appropriate blood test at their predetermined interval
- Data source: local data collection
- Note: this indicator is also included in the section "How to Overall Measure Success"

Note: we recommend stratifying the data for these indicators into categories that focus on the population groups that are most at risk, including (but not limited to):

- Being of African, Arab, South Asian, or Hispanic descent
- Being a member of an Indigenous group (e.g., First Nations, Inuit, and Métis)
- Low socioeconomic status

Quality Statement 2: Reducing the Risk of Type 2 Diabetes

Percentage of people with prediabetes who participate in a plan to prevent or slow the progression to type 2 diabetes

- Denominator: total number of people with prediabetes
- Numerator: number of people in the denominator who participate in a plan to slow the progression to type 2 diabetes
- Data source: local data collection

Quality Statement 3: Identifying and Assessing Mental Health Needs

Percentage of people with type 2 diabetes who were screened for psychological distress and mental health disorders within the past year

- Denominator: total number of people with type 2 diabetes
- Numerator: number of people in the denominator who were screened for psychological distress and mental health disorders within the past year
- Data source: local data collection

Average wait time between when a person with type 2 diabetes is referred to and seen by a health care professional with expertise in mental health

- Data source: local data collection

Percentage of people with type 2 diabetes with one or more urgent acute care visits for a mental health disorder in the past year

- Denominator: total number of people with type 2 diabetes
- Numerator: number of people in the denominator with one or more urgent acute care visits for a mental health disorder in the past year
- Data sources: DAD, NACRS, ODD

Quality Statement 4: Healthy Behaviour Changes

Percentage of people with prediabetes or type 2 diabetes who receive education and counselling on healthy behaviour changes

- Denominator: total number of people with prediabetes or type 2 diabetes
- Numerator: number of people in the denominator who receive education and counselling on healthy behaviour changes
- Data source: local data collection

Quality Statement 5: Setting and Achieving Glycemic Targets

Percentage of people with type 2 diabetes who have had a hemoglobin A1C test

- Denominator: total number of people with type 2 diabetes
- Numerator: number of people in the denominator who have had a hemoglobin A1C test
- Data source: Ontario Laboratories Information System (OLIS)

Percentage of people with type 2 diabetes who have a documented individualized hemoglobin A1C target range

- Denominator: total number of people with type 2 diabetes
- Numerator: number of people in the denominator who have a documented individualized hemoglobin A1C target range
- Data source: local data collection

Percentage of people with type 2 diabetes who use a self-monitoring glucose device who have a documented individualized target glucose range

- Denominator: total number of people with type 2 diabetes who use a self-monitoring glucose device
- Numerator: number of people in the denominator who have a documented individualized target glucose range
- Data source: local data collection

Percentage of people with type 2 diabetes and their families and caregivers (where appropriate) who report feeling involved in determining their individualized hemoglobin A1C target range

- Denominator: total number of people with type 2 diabetes and their families and caregivers (where appropriate)
- Numerator: number of people in the denominator who report feeling involved in determining their individualized hemoglobin A1C target range
- Data source: local data collection

Percentage of people with type 2 diabetes whose most recent hemoglobin A1C value was within their individualized hemoglobin A1C target range

- Denominator: total number of people with type 2 diabetes
- Numerator: number of people in the denominator whose most recent hemoglobin A1C value was within their individualized hemoglobin A1C target range
- Data source: local data collection

Quality Statement 6: Access to a Collaborative Interprofessional Care Team

Local availability of interprofessional diabetes health care teams with training in type 2 diabetes

- Data source: local data collection

Percentage of people with prediabetes or type 2 diabetes who have received care from an interprofessional diabetes health care team with training in type 2 diabetes

- Denominator: total number of people with prediabetes or type 2 diabetes
- Numerator: number of people in the denominator who have received care from an interprofessional diabetes health care team with training in type 2 diabetes
- Data source: local data collection

Quality Statement 7: Promoting Self-Management Skills

Percentage of people with prediabetes or type 2 diabetes who participate in a self-management plan

- Denominator: total number of people with prediabetes or type 2 diabetes
- Numerator: number of people in the denominator who participate in a self-management plan
- Data source: local data collection

Percentage of people with prediabetes or type 2 diabetes and their families and caregivers (where appropriate) who report feeling confident managing their condition

- Denominator: total number of people with prediabetes or type 2 diabetes and their families and caregivers (where appropriate)
- Numerator: number of people in the denominator who report feeling confident managing their condition
- Data source: local data collection
- Note: this indicator is also included in the section "How to Measure Overall Success"

Quality Statement 8: Screening for Complications and Risk Factors

Percentage of people with type 2 diabetes who are screened at diagnosis for complications and risk factors associated with type 2 diabetes

- Denominator: total number of people with type 2 diabetes
- Numerator: number of people in the denominator who are screened at diagnosis for complications and risk factors associated with type 2 diabetes
- Data source: local data collection

Percentage of people with type 2 diabetes who, at every appointment, are:

- **Asked about their feet**
- **Assessed for hypertension**

- Denominator: total number of people with type 2 diabetes
- Numerator: number of people in the denominator who, at every appointment, are:
  - Asked about their feet
  - Assessed for hypertension
- Data source: local data collection

Percentage of people with type 2 diabetes who are assessed annually for:

- **Chronic kidney disease**
- **Foot ulcers**
- **Gum disease**
- **Neuropathy**

- Denominator: total number of people with type 2 diabetes
- Numerator: number of people in the denominator who are assessed annually for:
  - Chronic kidney disease
  - Foot ulcers

    - Gum disease
    - Neuropathy
- Data source: local data collection

Percentage of people with type 2 diabetes who are assessed at times tailored to their individual needs for:

- **Abnormal sleep pattern and duration**
- **Cardiovascular disease**
- **Erectile dysfunction**
- **Mental health conditions**

- Denominator: total number of people with type 2 diabetes
- Numerator: number of people in the denominator who are assessed regularly at times tailored to their individual needs for:
    - Abnormal sleep pattern and duration
    - Cardiovascular disease
    - Erectile dysfunction
    - Mental health conditions
- Data source: local data collection

Percentage of adults with type 2 diabetes who are assessed regularly at times tailored to their individual needs for:

- **Dyslipidemia**
- **Retinopathy**

- Denominator: total number of adults with type 2 diabetes
- Numerator: number of adults in the denominator who are assessed regularly at times tailored to their individual needs for:
    - Dyslipidemia
    - Retinopathy
- Data source: local data collection

Percentage of children with type 2 diabetes who are assessed annually for:

- **Dyslipidemia**
- **Retinopathy**

- Denominator: total number of children with type 2 diabetes
- Numerator: number of children in the denominator who are assessed annually for:
    - Dyslipidemia
    - Retinopathy
- Data source: local data collection

Quality Statement 9: Cardiovascular Protection

Percentage of people with type 2 diabetes who receive care that incorporates an individualized cardiovascular risk reduction approach

- Denominator: total number of people with type 2 diabetes
- Numerator: number of people in the denominator who receive care that incorporates an individualized cardiovascular risk reduction approach
- Data source: local data collection

Appendix 2. Glossary

Adult[1]: People 18 years of age or older. “Older adult” is used to reflect an age continuum starting sometime around age 70.

Care providers: The wide variety of providers who may be involved in the care of people with type 2 diabetes. The term includes both regulated health care professionals, such as dietitians, kinesiologists, nurses, nurse practitioners, occupational therapists, pharmacists, physicians, physiotherapists, psychologists, and social workers, as well as unregulated health care providers such as community workers, Elders, peer support workers, and providers of traditional medicine. Our choice to use “care provider” does not diminish or negate other terms that a person may prefer.

Caregivers: Family members, friends, community members, or supportive people not necessarily related to the person with diabetes. The person with prediabetes or type 2 diabetes must give appropriate consent to share personal information, including medical information, with their caregivers.

Child[1]: People 0 to 17 years of age.

Culturally appropriate care[1]: Care that incorporates cultural or faith traditions, values, and beliefs; is delivered in the person’s preferred language; adapts culture-specific advice; and incorporates the person’s wishes to involve family or community members.

Prediabetes[1]: A state in which an individual is at high risk of developing type 2 diabetes and its complications. People with prediabetes have been tested and have at least one of the following results: a fasting plasma glucose of 6.1 to 6.9 mmol/L; a hemoglobin A1C of 6.0% to 6.4%; or a plasma glucose of 7.8 to 11.0 mmol/L 2 hours after taking 75 g of oral glucose. Not all individuals with prediabetes will progress to type 2 diabetes. Some will revert to normoglycemia.

Type 2 diabetes[1]: A condition of chronic hyperglycemia caused by insulin resistance or insulin deficiency. In this condition, there are no pancreatic islet-cell antibodies present, and C-peptides are normal or high. People with type 2 diabetes have had their blood sugar levels tested, with at least one of the following results: a fasting plasma glucose of greater than or equal to 7.0 mmol/L; a hemoglobin A1C of greater than or equal to 6.5%; a plasma glucose greater than or equal to 11.1 mmol/L 2 hours after taking 75 g of oral glucose; or a random plasma glucose greater than or equal to 11.1 mmol/L.

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