Quality Standards

Diabetes in Pregnancy

Care for People of Reproductive Age

Ontario Health

About This Quality Standard

The following quality standard addresses **care for people with type 1 and type 2 diabetes who become pregnant and people diagnosed with gestational diabetes**.

It includes preconception care as well as management of diabetes during pregnancy. It applies to all settings.

This quality standard does not include guidance on preventing gestational diabetes or on postpartum care for neonates born to people with diabetes in pregnancy.

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 diabetes in pregnancy benefit from care providers or care teams with the knowledge, skills, and judgment to provide evidence-based treatment for diabetes in pregnancy while also addressing all health care needs. The goal of management is to improve symptoms, function, quality of life, and prognosis.

People with diabetes in pregnancy also benefit from relationships with care providers who respect their priorities and recognize their diversity and specific needs, and who have the support necessary to address social determinants of health, including access to transportation, safe housing, and sufficient income.[1]

Care providers should consider that many of the lifestyle factors that put people with 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 diabetes in pregnancy 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.

Management of diabetes in pregnancy 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 type 2 diabetes and diabetes in pregnancy.[2]

Quality Statements to Improve Care

These quality statements describe what high-quality care looks like for people with diabetes in pregnancy.

Quality Statement 1: Preconception Care for People With Diabetes

All people of reproductive age who might become pregnant who are living with diabetes receive information about family planning. People with diabetes who are planning to become pregnant receive preconception care from an interprofessional care team, including counselling on optimizing diabetes management, screening for complications, and a review of medications.

Quality Statement 2: Coordinated Interprofessional Care

People with diabetes receive coordinated interprofessional care specific to their needs during preconception and throughout pregnancy. People with gestational diabetes receive interprofessional care at the time of diagnosis and throughout the remainder of their pregnancy.

Quality Statement 3: Self-Management Education and Support

People with diabetes and their families are offered tailored self-management education and support at the beginning of pregnancy, or at the time of gestational diabetes diagnosis, and throughout their pregnancy as needed.

Quality Statement 4: Lifestyle Management During Pregnancy

People with diabetes in pregnancy receive tailored information and support about gestational weight gain, diet, and physical activity to optimize blood glucose levels and maternal and fetal outcomes at the beginning of pregnancy, or at the time of gestational diabetes diagnosis, and throughout pregnancy.

Quality Statement 5: Fetal Monitoring and Timing of Delivery

People with diabetes in pregnancy receive increased fetal monitoring based on glucose control, maternal complications, comorbid conditions, and/or fetal well-being. Induction of labour is considered before 40 weeks' gestation if maternal or fetal indications exist.

Quality Statement 6: Postpartum Diabetes Screening for People With Gestational Diabetes

People with gestational diabetes are screened for prediabetes and type 2 diabetes with a 75 g oral glucose tolerance test between 6 weeks and 6 months postpartum.

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Scope of This Quality Standard

This quality standard addresses care for people living with type 1 or type 2 diabetes who are planning to become or who are pregnant and for people diagnosed with gestational diabetes. It does not address the primary prevention of gestational diabetes in the general population, although it does provide guidance on lifestyle factors that may contribute to the development of type 2 diabetes in those who previously had gestational diabetes and are therefore at increased risk.

This quality standard applies to all settings.

This quality standard does not include care for people with type 1 and type 2 diabetes outside of preconception care and pregnancy. For quality standards that address care for people with type 1 or type 2 diabetes, please refer to the quality standards *Type 1 Diabetes* and *Prediabetes and Type 2 Diabetes*.

This quality standard includes six quality statements on areas identified by the Diabetes in Pregnancy 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 with diabetes in pregnancy.

A Note on Terminology

In this quality standard, "maternal" refers to the person who is pregnant and is not intended to reflect that person's gender identity or their relationship with their baby.

Language used to talk about pregnancy complications and potential loss should be led by the person and their family. Health care professionals should ask people what terminology they prefer when referring to the pregnant person, the pregnancy, and the baby (e.g., whether they prefer "baby" or "fetus").

Why This Quality Standard Is Needed

Diabetes is a chronic disease that is characterized by hyperglycemia. If not properly managed, it can lead to serious complications, a diminished quality of life, and a life expectancy reduced by 5 to 15 years.[3,4] In 2019, an estimated 4.4 million Ontarians were

living with diabetes (type 1 diabetes, diagnosed and undiagnosed type 2 diabetes, and prediabetes combined).[3] Treating diabetes and its complications is estimated to cost the health care system $1.5 billion in direct costs.[5] Roughly 90% of all cases of diabetes are type 2 diabetes.

There is considerable variation across the province in the rates of all types of diabetes. Data from the 2016/17 fiscal year showed that the Central West, Central East, and North East regions had almost twice as many diagnosed cases compared with the Toronto Central region (Medical Services Database, extracted using IntelliHealth). In addition to regional variation, diabetes is also seen more frequently in Ontarians living in rural regions than in those living in urban areas.[6]

The prevalence of diabetes in pregnancy, including both gestational diabetes (diabetes diagnosed in pregnancy) and pre-existing diabetes (diabetes diagnosed before pregnancy), doubled in Ontario between 1996 and 2010.[5] By 2010, almost 10% of pregnant people 30 years of age and older experienced diabetes in pregnancy.[5] Most cases were gestational diabetes (7.4% of pregnancies), with the remainder being pre-existing type 1 and type 2 diabetes (1.9% of pregnancies).[5]

Gestational diabetes is a temporary condition that affects 3% to 20% of pregnant people in Ontario, depending on risk factors and the diagnostic criteria used.[7,8] However, the risk of developing type 2 diabetes among people with previous gestational diabetes increases over time, occurring in almost 20% of cases within 9 years postpartum.[9] Certain populations experience higher rates of gestational diabetes: those with a low income; people of African, Arab, South Asian, and Hispanic descent; and Indigenous populations.[1,6,10] In a 30-year postpartum follow-up study in Manitoba, First Nations people with prior gestational diabetes had the highest rate of diabetes—almost 80%—compared with non–First Nations people who had gestational diabetes and people without gestational diabetes.[11] Furthermore, diabetes in pregnancy may increase the risk of obesity and type 2 diabetes in offspring later in life.[5] Risk factors for gestational diabetes, such as ethnicity, family history of diabetes, polycystic ovarian syndrome, advanced maternal age, and obesity, are well documented in Ontario.[1]

In general, people with diabetes in pregnancy have higher rates of pregnancy complications compared with the general population, including perinatal mortality, hypertension, preterm delivery, Caesarean delivery, large-for-gestational-age infants, congenital malformations, and other neonatal morbidities that are exacerbated if blood glucose levels are not well managed.[1,5] Type 1 and type 2 diabetes carry significantly greater maternal and fetal risk compared with gestational diabetes,[5] and careful

glycemic control throughout pregnancy is crucial for optimal maternal and fetal outcomes.

This quality standard focuses on the needs of all people with diabetes in pregnancy, with particular consideration given to the populations that are more susceptible to diabetes in pregnancy. Based on evidence, consultations with people who had diabetes in pregnancy, and clinical expert consensus, the six 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 diabetes in pregnancy 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 diabetes in pregnancy
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:

- 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 Diabetes in Pregnancy

This quality standard consists of quality statements. These describe what high-quality care looks like for people with diabetes in pregnancy.

Within each quality statement, we've included information on what these statements mean for you, as a patient.

In addition, you may want to download the accompanying patient guide on diabetes in pregnancy, 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 Clinicians and Organizations

The quality statements within this quality standard describe what high-quality care looks like for people with diabetes in pregnancy.

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

Many clinicians 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 diabetes in pregnancy, 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 Diabetes in Pregnancy 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 diabetes in pregnancy 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, and rurality.

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

- Rate of all nonelective hospital visits for diabetes-specific reasons before delivery among people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital
    - Reported by:
        - Emergency department visits
        - Hospitalizations

    Note: diabetes-specific reasons include diabetes with poor control, diabetes without complications, diabetes with hypoglycemia, diabetes with ketoacidosis, diabetes with hyperosmolarity, and a main diagnosis of diabetes with hyperglycemia or hypoglycemia
- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital who have an antepartum or intrapartum outcome
    - Reported by:
        - Pre-eclampsia
        - Operative vaginal delivery
        - Caesarean section
        - Third- or fourth-degree lacerations
- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital whose infant has an adverse neonatal outcome
    - Reported by:
        - Neonatal hypoglycemia
        - Macrosomia
        - Shoulder dystocia
        - Stillbirth
        - Preterm birth
        - Hyperbilirubinemia
        - Respiratory distress
        - Neonatal mortality
- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital whose infant is admitted to a neonatal intensive care unit for 24 hours or more

Indicators That Can Be Measured Using Only Local Data

- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who receive interprofessional care specific to their needs to manage their diabetes in pregnancy
  Note: see quality statement 2 for additional indicators for people with pre-existing diabetes and gestational diabetes who receive interprofessional care at specific points in time
- Percentage of people of reproductive age living with diabetes who are planning to get pregnant who receive preconception care from an interprofessional care team
- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who receive care for their diabetes who feel involved in decisions about their care
- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who report feeling confident in knowing how to take care of and manage their diabetes during pregnancy

Quality Statements to Improve Care: The Details

1

Preconception Care for People With Diabetes

All people of reproductive age who might become pregnant who are living with diabetes receive information about family planning. People with diabetes who are planning to become pregnant receive preconception care from an interprofessional care team, including counselling on optimizing diabetes management, screening for complications, and a review of medications.

Sources: American Diabetes Association, 2018[12] | Diabetes Canada, 2018[1] | National Institute for Health and Care Excellence, 2015[13] | Scottish Intercollegiate Guidelines Network, 2017[14]

Definitions

Family planning: Pregnancy planning, which should be discussed at the start of puberty. Effective methods of contraception should be reviewed and prescribed if the patient wishes. A discussion of family planning should be incorporated into routine diabetes care for all people of reproductive age who might become pregnant. The importance of avoiding an unplanned pregnancy should be a component of diabetes education beginning in adolescence for people with diabetes.

Preconception: The period of time before a person becomes pregnant. Typically, preconception care occurs once a person with diabetes decides to try to become pregnant, but it may also take place if a person is sexually active.

Optimal diabetes management: Glycemic control, medications as necessary, smoking cessation, good nutrition, and physical activity. People with diabetes who wish to become pregnant should strive to attain a preconception glycated hemoglobin

(hemoglobin A1C) of 7.0% or less (or ≤ 6.5% if it can safely be achieved) to decrease the risk of:

- Miscarriage
- Congenital anomalies
- Preeclampsia
- Progression of retinopathy in pregnancy
- Stillbirth

Screening for complications: People with diabetes are assessed for underlying diabetes-related conditions that can affect or be exacerbated by pregnancy before trying to become pregnant, including:

- **Screening for retinopathy**—People with type 1 or type 2 diabetes who are planning a pregnancy or who have become pregnant should be counselled on the risk of developing (or the progression of) diabetic retinopathy. Dilated eye examinations should ideally occur before pregnancy, and patients should be monitored every trimester and for 1 year after giving birth to identify progression of retinopathy, as per the recommendation of an eye care provider
- **Renal assessment**—Before pregnancy, people with diabetes should be screened for chronic kidney disease. Albuminuria and overt nephropathy are associated with an increased risk of maternal and fetal complications
- **Screening for hypertension**—Before pregnancy, people with diabetes should be screened for hypertension at every diabetes-related clinical encounter and at least biannually. Any type and degree of hypertension in pregnancy can lead to adverse neonatal outcomes
- **Screening for mental health conditions**—Before pregnancy, people with diabetes should be screened regularly (the interval is based on individual indications) for diabetes-related psychological distress and psychiatric disorders

Review of medications: People planning to become pregnant should take at least 1 mg of folic acid daily from 3 months or more before conception to 12 weeks' gestation to prevent congenital abnormalities. The use of statins, angiotensin-converting enzyme inhibitors, and angiotensin receptor–blocking medications should be reviewed before conception and avoided during pregnancy. Other medications should also be reviewed, and many should be avoided during pregnancy.

Rationale

Starting in adolescence, people with diabetes should receive information from a health care professional about contraception and the importance of family planning. Preconception care can improve maternal and fetal outcomes in people who are planning to become pregnant. Interprofessional care teams should equip people with diabetes who are planning to become pregnant with the education and knowledge that will empower them to reduce their risks of adverse pregnancy outcomes and to have a positive pregnancy experience.[9,13]

Pregnancy complications, including miscarriage, hypertension, preterm delivery, congenital malformations, macrosomia, and stillbirth, are higher among people with diabetes compared with the general population.[1,15] Discontinuing potentially harmful medications, screening for diabetes-related complications, and achieving weight management goals are important components of preconception care.[1,13] People with type 2 diabetes have lower rates of attendance for preconception care than do people with type 1 diabetes. Increased efforts are needed to reach and educate people with type 2 diabetes who are planning to become pregnant.[15] People with diabetes and their families should also be given information about how nausea and vomiting can affect blood glucose control and how to manage symptoms of pregnancy.

Preconception care should include:

- Optimizing diabetes management (reviewing blood glucose targets, creating individualized lifestyle goals that include smoking cessation,[6] and discussing continuous glucose monitoring as an evidence-based option for with people with pre-existing diabetes, especially for those with type 1 diabetes)
- Screening for complications (e.g., kidney disease, retinopathy, hypertension, and mental health conditions)
- Reviewing current medications and discussing starting a multivitamin containing at least 1 mg of folic acid as per standard pregnancy recommendations

What This Quality Statement Means

For People With Diabetes

You should receive information on how diabetes can affect pregnancy. If you are not planning a pregnancy, you should receive information about, and access to, birth control that meets your needs. If you are planning to get pregnant, you should receive information and support on how to manage your diabetes before and during pregnancy.

For Clinicians

Discuss family planning with people of reproductive age with diabetes. If they are planning a pregnancy, review medications and glucose control and arrange screening tests. If they are not planning a pregnancy, offer them information about birth control methods that meet their needs and how to access them.

For Health Services Planners

Ensure that people with diabetes have access to preconception information and care relevant to their clinical condition.

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people of reproductive age living with diabetes who might become pregnant who receive information about family planning from a health care professional
- Percentage of people of reproductive age living with diabetes who are planning to become pregnant who receive preconception care from an interprofessional care team
- Percentage of people of reproductive age living with diabetes who are planning to become pregnant and who receive preconception care who report feeling informed about how to manage their diabetes before and during pregnancy

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

2

Coordinated Interprofessional Care

People with diabetes receive coordinated interprofessional care specific to their needs during preconception and throughout pregnancy. People with gestational diabetes receive interprofessional care at the time of diagnosis and throughout the remainder of their pregnancy.

Sources: American Diabetes Association, 2018[12] | Diabetes Canada, 2018[1] | National Institute for Health and Care Excellence, 2015[13] | Scottish Intercollegiate Guidelines Network, 2017[14]

Definitions

Interprofessional care: A care team consisting of multiple providers with specific training in diabetes in pregnancy that is supported by specialist input should be integrated into preconception and pregnancy care. Team members may include be nurses, dietitians, social workers/psychologists/mental health specialists, pharmacists, primary care providers, endocrinologists/internists, midwives, obstetricians, doulas, Elders, and community health workers with expertise in diabetes in pregnancy. People with diabetes in pregnancy and their families are an important part of the team and should participate in decisions about their care, if they choose.

Time of diagnosis: People are usually diagnosed with gestational diabetes between 24 and 28 weeks' gestation, after which they should receive interprofessional care as frequently as needed.

Rationale

Care from a coordinated interprofessional team, with expertise in preconception and diabetes in pregnancy care, has been shown to minimize maternal and fetal risks and

help meet the unique needs and preferences of each person with diabetes and their families.[1,13] An early working relationship should be established among members of the interprofessional care team and with the person with diabetes to facilitate pregnancy planning and ensure the development of adequate knowledge and skills for self-management.

Models of delivering specialized, coordinated, interprofessional diabetes care can be adapted to the location and context where care is offered, and may be organized, staffed, and situated to best support local community needs. Telehealth technologies (telephone, web-based, or virtual) may be used to facilitate access to diabetes care teams and reduce travel time for patients and their families.

What This Quality Statement Means

For People With Diabetes in Pregnancy

You should have access to an interprofessional care team when planning a pregnancy, during pregnancy, and at the time of diagnosis of gestational diabetes. You and your family should be treated as important members of your diabetes care team. This means your questions, concerns, observations, and goals are discussed and incorporated into your care, and you are supported in playing an active role in your care.

For Clinicians

Ensure that people are cared for by an interprofessional team with the knowledge, skills, and judgment to manage patients' diabetes in pregnancy, and connect with additional providers as needed. Provide support and ensure that your team can address your patients' physical health, mental health, and social needs. Involve people and their families in decisions about their own care.

For Health Services Planners

Ensure systems, processes, and resources are in place so that pregnant people with diabetes have access to an interprofessional care team with expertise in diabetes in pregnancy and the ability to expand or consult with additional care providers as needed.

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people of reproductive age living with diabetes who are planning to become pregnant who receive interprofessional care specific to their needs during preconception
- Percentage of people with pre-existing diabetes who are pregnant who receive interprofessional care specific to their needs during pregnancy
- Percentage of people with gestational diabetes who receive interprofessional care specific to their needs at the time of gestational diabetes diagnosis and throughout the remainder of their pregnancy
- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who receive interprofessional care who feel involved in decisions about their care

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

3

Self-Management Education and Support

People with diabetes and their families are offered tailored self-management education and support at the beginning of pregnancy, or at the time of gestational diabetes diagnosis, and throughout their pregnancy as needed.

Sources: American Diabetes Association, 2018[12] | Diabetes Canada, 2018[1] | National Institute for Health and Care Excellence, 2015[13] | Scottish Intercollegiate Guidelines Network, 2017[14]

Definitions

Self-management education: Education on self-management should be evidence-based, culturally appropriate, and theory-driven; follow a structured curriculum; and be based on individual needs and preferences. It should include information on:

- Blood glucose monitoring and individualized targets (discuss continuous glucose monitoring as an evidence-based option for people with type 1 diabetes)
- Medications (indications, administration, storage, and possible adverse effects)
- Diet, physical activity, and gestational weight gain (see quality statement 4)
- Effects of blood glucose levels on maternal and fetal outcomes
- Benefits of breastfeeding for mother and baby
- Postpartum diabetes screening recommendations for people with gestational diabetes
- Local resources for breastfeeding support
- Social and supportive resources for people with babies
- Mental health issues related to both diabetes and pregnancy

Self-management support: A strategy to improve a person's ability to manage their diabetes independently. Self-management support can come from regular follow-up with a health care provider, diabetes coach, peer, Elder, or community health worker, and may include connecting with community support services or interest groups.[1]

Rationale

Self-management education aims to provide people with diabetes in pregnancy information and skills to be actively engaged in decisions and daily practices related to their condition.[1,12] The provision of self-management education and support for people with diabetes has been shown to improve glycemic control, self-efficacy, and self-care behaviours and to reduce complications.[1]

Self-management education that is tailored to individual health needs and cultural beliefs is most effective in improving health behaviours and clinical outcomes, such as a healthy diet and glycemic control.[1,12,13] Community and culturally tailored interventions are particularly relevant to minority communities and have been shown to lower hemoglobin A1C levels, increase diabetes-related knowledge, and improve quality of life.[1]

Education should be offered in both oral and written formats and take into account the person's language and education levels where possible to support understanding. The use of technology-enabled visits (telephone, web-based, or virtual) can help facilitate access to self-management support and reduce travel time for patients and their families.

What This Quality Statement Means

For People With Diabetes in Pregnancy

At the beginning of pregnancy if you have type 1 or type 2 diabetes, or at the time of diagnosis of gestational diabetes, as well as throughout pregnancy, you and your family or caregiver should have access to education and support to help you learn about and manage your diabetes during pregnancy. This education and support should be offered in a format that meets your needs. If you choose to include them, family and caregivers can also be offered this information and support.

For Clinicians

Offer evidence-based self-management education and support starting at the beginning of pregnancy, or at the time of diagnosis of gestational diabetes, and throughout pregnancy. This information should be tailored to meet the person's learning needs and be presented in a format that is most appropriate for the person. When family or community members are involved in the person's care, and if the person consents, include them as much as possible in this education and support.

For Health Services Planners

Ensure that appropriate time and resources are available for care providers to support the development of self-management skills for people with diabetes in pregnancy. Build in processes that allow care providers to incorporate social and culturally relevant content, as determined by the patient, while also adhering to current clinical practice guidelines.

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with pre-existing diabetes who are pregnant who receive tailored self-management education and support at the beginning of their pregnancy and throughout the remainder of their pregnancy
- Percentage of people with gestational diabetes who receive tailored self-management education and support at the time of gestational diabetes diagnosis and throughout the remainder of their pregnancy
- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who report feeling confident in knowing how to take care of and manage their diabetes during pregnancy

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

4

Lifestyle Management During Pregnancy

People with diabetes in pregnancy receive tailored information and support about gestational weight gain, diet, and physical activity to optimize blood glucose levels and maternal and fetal outcomes at the beginning of pregnancy, or at the time of gestational diabetes diagnosis, and throughout pregnancy.

Sources: American College of Obstetricians and Gynecologists, 2012[16] | American Diabetes Association, 2018[12] | Diabetes Canada, 2018[1] | National Institute for Health and Care Excellence, 2015[13] | Scottish Intercollegiate Guidelines Network, 2017[14] | Society of Obstetricians and Gynecologists of Canada[17]

Definitions

Gestational weight gain: Recommendations for gestational weight gain vary according to body mass index classification. The following weight gain recommendations are for a singleton pregnancy[16]:

Pre-pregnancy weight category (body mass index)	Recommended range of total weight gain
Underweight (< 18.5)	12.5–18 kg (28–40 lb)
Ideal (18.5–24.9)	11.5–16 kg (25–35 lb)
Overweight (25–29.9)	7–11.5 kg (15–25 lb)
Obese (≥ 30)	5–9 kg (11–20 lb)

Diet: Adoption of healthy eating habits can help manage blood glucose levels. This includes selecting fewer processed foods (e.g., fewer sugar-sweetened beverages, fast foods, and refined grain products) and more whole foods and low-glycemic-index foods, such as legumes, whole grains, and fruits and vegetables.[1,12] These foods can help control blood glucose and weight gain.

Physical activity: Exercise during pregnancy can assist with glucose control and help reduce complications. People without contraindications should strive for at least 150 minutes of moderate-intensity physical activity each week throughout pregnancy. Pregnant people can incorporate a variety of activities according to their abilities and resources, such as aerobic and resistance training, walking, yoga, and gentle stretching.

Blood glucose levels: Optimal blood sugar levels are as follows:

- Fasting and preprandial: < 5.3 mmol/L
- 1 hour postprandial: < 7.8 mmol/L
- 2 hours postprandial: < 6.7 mmol/L

Maternal and fetal outcomes: Poorly controlled blood glucose levels during pregnancy can result in gestational weight gain beyond the recommended range, Caesarean section, preterm birth, stillbirth, increased fetal size, neonatal hypoglycemia, shoulder dystocia, and admission to the neonatal intensive care unit.

Rationale

Lifestyle is an important component of diabetes management in pregnancy. Diet and physical activity interventions are the first step to achieving glucose targets and managing weight gain in people newly diagnosed with gestational diabetes.[1] These interventions should be individualized and ongoing to fit the person's goals, promote adherence, and optimize pregnancy outcomes.

Culturally tailored and supportive dietary advice to achieve glycemic targets, appropriate fetal growth, and optimal maternal weight gain should be provided to people with diabetes in pregnancy and their families and caregivers, if they wish to be involved. Unless other contraindications exist, health care professionals should discuss the benefits of physical activity and help people with diabetes in pregnancy plan regular exercise that is safe, sustainable, and accessible to them in their community. People with diabetes in pregnancy should be given information about their individual gestational weight gain[16] target and be supported in making lifestyle changes as needed.

What This Quality Statement Means

For People With Diabetes in Pregnancy

You should receive information and support about how diet, physical activity, and weight management affect your pregnancy and your diabetes. You and your care

providers should develop a lifestyle plan that is safe and achievable to promote your health and the health of your baby. If you choose to include them, your family should be involved in your plan.

For Care Providers

Ensure that people with diabetes in pregnancy are offered individualized, ongoing lifestyle counselling and support throughout their pregnancy that is evidence-based, safe, achievable, and culturally relevant. Diet, physical activity, and weight management plans should meet the person's needs and abilities and incorporate their family and community if desired. This could include referral for social assistance, help applying for the Special Diet Allowance, if applicable, and information on community food resources, including food banks.

For Health Services Planners

Ensure that appropriate time and resources are available for care providers to support people with diabetes in pregnancy. Build in processes that allow care providers to incorporate socially and culturally relevant lifestyle management plans in consultation with community members and individuals.

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with pre-existing diabetes who are pregnant who receive tailored information and support for lifestyle management at the beginning of their pregnancy and throughout the remainder of their pregnancy
- Percentage of people with gestational diabetes who receive tailored information and support for lifestyle management at the time of their gestational diabetes diagnosis and throughout the remainder of their pregnancy
- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who feel that their individualized lifestyle management plan meets their needs and abilities

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

5

Fetal Monitoring and Timing of Delivery

People with diabetes in pregnancy receive increased fetal monitoring based on glucose control, maternal complications, comorbid conditions, and/or fetal well-being. Induction of labour is considered before 40 weeks' gestation if maternal or fetal indications exist.

Sources: American Diabetes Association, 2018[12] | Diabetes Canada, 2018[1] | National Institute for Health and Care Excellence, 2015[13] | Scottish Intercollegiate Guidelines Network, 2017[14] | Society of Obstetricians and Gynecologists of Canada[17]

Definitions

Fetal monitoring: There is no single strategy for antenatal monitoring of diabetes in pregnancy. In people with pre-existing diabetes, assessment of fetal well-being should be initiated by 32 weeks' gestation and performed weekly from 34 to 36 weeks' gestation until delivery. Earlier and/or more frequent fetal health surveillance is recommended in people considered to be high risk, such as those with gestational diabetes that is poorly controlled or associated with any comorbid conditions. Methods of monitoring fetal well-being may include a non-stress test, a non-stress test plus the amniotic fluid index, a biophysical profile (including education about kick counts), or a combination of these methods.

Comorbid conditions: Comorbid conditions that can occur in people with diabetes in pregnancy include cardiovascular complications, such as hypertensive disorders of pregnancy, obesity, chronic kidney disease, and retinopathy.

Induction of labour: In people with uncomplicated pre-existing diabetes, the process of artificially stimulating the uterus to start labour (induction) should be considered between 38 and 39 weeks' gestation to reduce the risk of stillbirth. Induction before

38 weeks' gestation should be considered when other fetal or maternal indications exist to prevent excess fetal growth, reduce the risk of shoulder dystocia, and decrease the chances of Caesarean section. For people with gestational diabetes requiring insulin, induction by 39 weeks' gestation should be planned according to maternal and fetal indications. People with diet-controlled gestational diabetes should receive routine pregnancy management at term, with planned induction of labour before 40 weeks' gestation depending on maternal and fetal indications. The timing of induction of labour should be determined based on glycemic control and any other comorbid conditions.

Maternal indications: Maternal indications that would support induction of labour include poor glucose control, the presence of other comorbid conditions, and a multiple pregnancy.

Fetal indications: Fetal indications that would support induction of labour include concerns about fetal size, growth pattern, and well-being.

Rationale

For people with diabetes in pregnancy, fetal monitoring and planned delivery can reduce the risks of stillbirth, Caesarean section, shoulder dystocia, and associated fetal macrosomia (an infant born with a birth weight > 4,500 g [9.9 lb]). With their patients, health care professionals should plan fetal monitoring, timing, and mode of delivery according to a person's health status. People with diabetes in pregnancy and their families should be given information about the risks and benefits of vaginal birth, induction of labour, Caesarean section, and timing of delivery.

What This Quality Statement Means

For People With Diabetes in Pregnancy

You and your health care professionals should discuss how they will monitor your pregnancy to ensure your baby is well. They should talk with you about your options for timing and mode of delivery. They should give you information about what tests to expect and how to prepare for the birth of your baby, and encourage you to have a support person with you at appointments.

For Clinicians

Discuss and plan fetal monitoring, timing, and modes of delivery with people with diabetes in pregnancy and their families. Provide information on the benefits and harms

of all available options. Clearly explain and provide written information on follow-up care and any available resources.

For Health Services Planners

Ensure that appropriate time and resources are available for care providers to conduct fetal monitoring and plan timing of delivery for people with diabetes in pregnancy.

QUALITY INDICATORS: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with pre-existing diabetes, poorly controlled gestational diabetes, or gestational diabetes with comorbid conditions who receive fetal monitoring beginning at 32 weeks' gestation and performed weekly from 36 weeks' gestation until delivery
- Percentage of people with pre-existing diabetes without maternal or fetal indications who are induced between 38 and 39 weeks' gestation
- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who have maternal or fetal indications who are induced before 38 weeks' gestation
- Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who report having discussions with their health care professional about fetal monitoring and the risks and benefits of the mode and timing of delivery

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

6

Postpartum Diabetes Screening for People With Gestational Diabetes

People with gestational diabetes are screened for prediabetes and type 2 diabetes with a 75 g oral glucose tolerance test between 6 weeks and 6 months postpartum.

Sources: American Diabetes Association, 2018[12] | Diabetes Canada, 2018[1] | National Institute for Health and Care Excellence, 2015[13] | Scottish Intercollegiate Guidelines Network, 2017[14]

Definitions

Prediabetes: 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 glycated hemoglobin of 6.0% to 6.4%; or a plasma glucose of 7.8 to 11 mmol/L 2 hours after taking a 75 g oral glucose tolerance test. Not all individuals with prediabetes will progress to type 2 diabetes. Some will revert to normoglycemia.[1]

75 g oral glucose tolerance test: The preferred diabetes screening test for people with previous gestational diabetes. Diabetes is diagnosed when plasma glucose is greater than or equal to 11.1 mmol/L 2 hours after taking 75 g of oral glucose.[1]

Rationale

People diagnosed with gestational diabetes have a higher risk of developing type 2 diabetes in the future. It is important to identify people who may have undiagnosed diabetes or prediabetes so that they receive appropriate care. Unfortunately, postpartum diabetes screening rates are low across Ontario. Care providers should use various approaches (e.g., letters, phone calls, emails, texts) to remind people to get screened at a time and location that best suit their needs.[1,13,18,19] In addition to being

screened, people should be informed of their clinical and demographic risks of developing diabetes and supported in making any lifestyle changes necessary to decrease these risks.

The earlier diabetes or prediabetes is discovered, the sooner preventive measures can be taken to decrease or slow the progression. Blood glucose testing should be done as part of intrapartum care and before being discharged to the community to rule out persistent hyperglycemia.[13] Even when blood glucose levels return to normal in the intrapartum period, it is recommended that people be screened for diabetes between 6 weeks and 6 months postpartum with a 75 g oral glucose tolerance test. People who have had gestational diabetes should receive a laboratory requisition and information about this test from a health care professional. Alternative methods of testing may be used for people who have undergone bariatric surgery. People with previous gestational diabetes should receive counselling about healthy behaviour interventions from a primary care provider within a year of delivery to minimize the risk of developing type 2 diabetes. If they are considering another pregnancy right away, then they should follow up immediately to ensure appropriate testing and care are received.

What This Quality Statement Means

For People With Gestational Diabetes

Between 6 weeks and 6 months after you give birth, you should get your blood tested to make sure you have not developed prediabetes or type 2 diabetes. You should receive a lab requisition and information about the test (known as an oral glucose tolerance test) from a health care professional.

For Clinicians

People with gestational diabetes should be screened for ongoing diabetes with an oral glucose tolerance test between 6 weeks and 6 months postpartum. Provide people with information on how to prepare for the test and discuss how the results will be communicated. Planning for testing should be done with the individual or family to accommodate their needs.

For Health Services Planners

Ensure that systems and resources are in place that support postpartum screening and testing services for type 2 diabetes. Screening and prevention strategies should be implemented in collaboration with people with diabetes, families, community leaders, health care providers, and funding agencies and should engage entire communities.[20]

QUALITY INDICATOR: HOW TO MEASURE IMPROVEMENT FOR THIS STATEMENT

- Percentage of people with previous gestational diabetes who are screened for prediabetes and type 2 diabetes with a 75 g oral glucose tolerance test between 6 weeks and 6 months postpartum

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 Diabetes in Pregnancy 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 diabetes in pregnancy 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 will be reported by various equity stratifications, such as patient socioeconomic and demographic characteristics, such as age, income, region, and rurality. 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, and race.

Our measurement guide for diabetes in pregnancy 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

Rate of all nonelective hospital visits for diabetes-specific reasons before delivery among people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital

- **Reported by:**
  - **Emergency department visits**
  - **Hospitalizations**

- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital
- Numerator: number of people in the denominator who had one or more nonelective hospital visits for diabetes-specific reasons before delivery
- Data sources: Discharge Abstract Database (DAD), National Ambulatory Care Reporting System (NACRS), Ontario Diabetes Database (ODD), Ontario Health Insurance Plan (OHIP) Claims Database
- Note: diabetes-specific reasons include diabetes with poor control, diabetes without complications, diabetes with hypoglycemia, diabetes with ketoacidosis, diabetes with hyperosmolarity, and a main diagnosis of diabetes with hyperglycemia or hypoglycemia

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital who have an antepartum or intrapartum outcome:

- **Reported by:**
  - **Pre-eclampsia**
  - **Operative vaginal delivery**
  - **Caesarean section**
  - **Third- or fourth-degree lacerations**
- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital
- Numerator: number of people in the denominator who have an antepartum or intrapartum outcome (listed above)
- Data sources: DAD, ODD, OHIP

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital whose infant has an adverse neonatal outcome

- **Reported by:**
  - **Neonatal hypoglycemia**
  - **Macrosomia**
  - **Shoulder dystocia**
  - **Stillbirth**
  - **Preterm birth**
  - **Hyperbilirubinemia**
  - **Respiratory distress**
  - **Neonatal mortality**
- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital

- Numerator: number of people in the denominator whose infant has an adverse neonatal outcome (listed above)
- Data sources: DAD, ODD, OHIP

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital whose infant is admitted to a neonatal intensive care unit for 24 hours or more

- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who deliver in hospital
- Numerator: number of people in the denominator whose infant is admitted to a neonatal intensive care unit for 24 hours or more
- Data sources: DAD, ODD, OHIP

Indicators That Can Be Measured Using Only Local Data

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who receive interprofessional care specific to their needs to manage their diabetes in pregnancy

- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes)
- Numerator: number of people in the denominator who receive interprofessional care specific to their needs to manage their diabetes in pregnancy
- Data source: local data collection
- Note: see quality statement 2 for additional indicators for people with pre-existing diabetes and gestational diabetes who receive interprofessional care at specific points in time

Percentage of people of reproductive age living with diabetes who are planning to get pregnant who receive preconception care from an interprofessional care team

- Denominator: total number of people of reproductive age living with diabetes who are planning to get pregnant
- Numerator: number of people in the denominator who receive preconception care from an interprofessional care team
- Data source: local data collection
- Note: this indicator is also included in quality statement 1

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who receive care for their diabetes who feel involved in decisions about their care

- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who receive care for their diabetes
- Numerator: number of people in the denominator who feel involved in decisions about their care
- Data source: local data collection
- Notes:
  - This question is adapted from the Health Care Experience Survey; consider using a validated diabetes patient experience survey that captures this concept to track this indicator
  - A similar indicator is also included in quality statement 2

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who report feeling confident in knowing how to take care of and manage their diabetes during pregnancy

- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes)
- Numerator: number of people in the denominator who report feeling confident in knowing how to take care of and manage their diabetes during pregnancy
- Data source: local data collection
- Notes:
  - This question is adapted from the Health Care Experience Survey; consider using a validated diabetes patient experience survey that captures this concept to track this indicator
  - This indicator is also included in quality statement 3

How to Measure Improvement for Specific Statements

Quality Statement 1: Preconception Care for People With Diabetes

Percentage of people of reproductive age living with diabetes who might become pregnant who receive information about family planning from a health care professional

- Denominator: total number of people of reproductive age living with diabetes who might become pregnant

- Numerator: number of people in the denominator who receive information about family planning from a health care professional
- Data source: local data collection

Percentage of people of reproductive age living with diabetes who are planning to become pregnant who receive preconception care from an interprofessional care team

- Denominator: total number of people of reproductive age living with diabetes who are planning to become pregnant
- Numerator: number of people in the denominator who receive preconception care from an interprofessional care team
- Data source: local data collection
- Note: this indicator is also included in the section "How to Measure Overall Success"

Percentage of people of reproductive age living with diabetes who are planning to become pregnant and who receive preconception care who report feeling informed about how to manage their diabetes before and during pregnancy

- Denominator: total number of people of reproductive age living with diabetes who are planning to become pregnant and who receive preconception care
- Numerator: number of people in the denominator who report feeling informed about how to manage their diabetes before and during pregnancy
- Data source: local data collection
- Note: this question is adapted from the Health Care Experience Survey; consider using a validated diabetes patient experience survey that captures this concept to track this indicator

Quality Statement 2: Coordinated Interprofessional Care

Percentage of people of reproductive age living with diabetes who are planning to become pregnant who receive interprofessional care specific to their needs during preconception

- Denominator: total number of people of reproductive age living with diabetes who are planning to become pregnant
- Numerator: number of people in the denominator who receive interprofessional care specific to their needs during preconception
- Data source: local data collection

Percentage of people with pre-existing diabetes who are pregnant who receive interprofessional care specific to their needs during pregnancy

- Denominator: total number of people with pre-existing diabetes who are pregnant
- Numerator: number of people in the denominator who receive interprofessional care specific to their needs during pregnancy
- Data source: local data collection

Percentage of people with gestational diabetes who receive interprofessional care specific to their needs at the time of gestational diabetes diagnosis and throughout the remainder of their pregnancy

- Denominator: total number of people with gestational diabetes
- Numerator: number of people in the denominator who receive interprofessional care specific to their needs at the time of gestational diabetes diagnosis and throughout the remainder of their pregnancy
- Data source: local data collection

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who receive interprofessional care who feel involved in decisions about their care

- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who receive interprofessional care
- Numerator: number of people in the denominator who feel involved in decisions about their care (their questions, concerns, observations, and goals are discussed and incorporated into their care)
- Data source: local data collection
- Notes:
  - This question is adapted from the Health Care Experience Survey; consider using a validated diabetes patient experience survey that captures this concept to track this indicator
  - A similar indicator is also included in the section “How to Measure Overall Success”

Quality Statement 3: Self-Management Education and Support

Percentage of people with pre-existing diabetes who are pregnant who receive tailored self-management education and support at the beginning of their pregnancy and throughout the remainder of their pregnancy

- Denominator: total number of people with pre-existing diabetes who are pregnant

- Numerator: number of people in the denominator who receive tailored self-management education and support at the beginning of their pregnancy and throughout the remainder of their pregnancy
- Data source: local data collection

Percentage of people with gestational diabetes who receive tailored self-management education and support at the time of gestational diabetes diagnosis and throughout the remainder of their pregnancy

- Denominator: total number of people with gestational diabetes
- Numerator: number of people in the denominator who receive tailored self-management education and support at the time of gestational diabetes diagnosis and throughout the remainder of their pregnancy
- Data source: local data collection

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who report feeling confident in knowing how to take care of and manage their diabetes during pregnancy

- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes)
- Numerator: number of people in the denominator who report feeling confident in knowing how to take care of and manage their diabetes during pregnancy
- Data source: local data collection
- Notes:
  - This question is adapted from the Health Care Experience Survey; consider using a validated diabetes patient experience survey that captures this concept to track this indicator
  - This indicator is also included in the section “How to Measure Overall Success”

Quality Statement 4: Lifestyle Management During Pregnancy

Percentage of people with pre-existing diabetes who are pregnant who receive tailored information and support for lifestyle management at the beginning of their pregnancy and throughout the remainder of their pregnancy

- Denominator: total number of people with pre-existing diabetes who are pregnant
- Numerator: number of people in the denominator who receive tailored information and support for lifestyle management (gestational weight gain, diet, and physical activity) at the beginning of their pregnancy and throughout the remainder of their pregnancy

- Exclusion: people with contraindications for physical activity
- Data source: local data collection

Percentage of people with gestational diabetes who receive tailored information and support for lifestyle management at the time of their gestational diabetes diagnosis and throughout the remainder of their pregnancy

- Denominator: total number of people with gestational diabetes
- Numerator: number of people in the denominator who receive tailored information and support for lifestyle management (gestational weight gain, diet, and physical activity) at the time of their gestational diabetes diagnosis and throughout the remainder of their pregnancy
- Exclusion: people with contraindications for physical activity
- Data source: local data collection

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who feel that their individualized lifestyle management plan meets their needs and abilities

- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes)
- Numerator: number of people in the denominator who feel that their individualized lifestyle management plan meets their needs and abilities
- Data source: local data collection

Quality Statement 5: Fetal Monitoring and Timing of Delivery

Percentage of people with pre-existing diabetes, poorly controlled gestational diabetes, or gestational diabetes with comorbid conditions who receive fetal monitoring beginning at 32 weeks' gestation and performed weekly from 36 weeks' gestation until delivery

- Denominator: total number of people with pre-existing diabetes, poorly controlled gestational diabetes, or gestational diabetes with comorbid conditions
- Numerator: number of people in the denominator who receive fetal monitoring beginning at 32 weeks' gestation and performed weekly from 36 weeks' gestation until delivery
- Data source: local data collection

Percentage of people with pre-existing diabetes without maternal or fetal indications who are induced between 38 and 39 weeks' gestation

- Denominator: total number of people with pre-existing diabetes without maternal or fetal indications

- Numerator: number of people in the denominator who are induced between 38 and 39 weeks' gestation
- Data sources: local data collection; consider using the Better Outcomes Registry and Network (BORN) Information System, if available

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who have maternal or fetal indications who are induced before 38 weeks' gestation

- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who have maternal or fetal indications
- Numerator: number of people in the denominator who are induced before 38 weeks' gestation
- Data sources: local data collection; consider using the BORN Information System, if available

Percentage of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes) who report having discussions with their health care professional about fetal monitoring and the risks and benefits of the mode and timing of delivery

- Denominator: total number of people with diabetes in pregnancy (pre-existing diabetes or gestational diabetes)
- Numerator: number of people in the denominator who report having discussions with their health care professional about fetal monitoring and the risks and benefits of the mode and timing of delivery
- Data source: local data collection

Quality Statement 6: Postpartum Diabetes Screening for People With Gestational Diabetes

Percentage of people with previous gestational diabetes who are screened for prediabetes and type 2 diabetes with a 75 g oral glucose tolerance test between 6 weeks and 6 months postpartum

- Denominator: total number of people with previous gestational diabetes
  - Exclusion: people who have undergone bariatric surgery
- Numerator: number of people in the denominator who are screened for prediabetes and type 2 diabetes with a 75 g oral glucose tolerance test between 6 weeks and 6 months postpartum

- Data sources: local data collection; if available, consider using a platform such as ConnectingOntario ClinicalViewer to identify people with gestational diabetes, people who had a delivery in hospital, and people with contraindications for the 75 g oral glucose tolerance test and the Ontario Laboratories Information System (OLIS) to identify people who received a 75 g oral glucose tolerance test at a community or hospital laboratory

Appendix 2. Glossary

Care providers: The wide variety of providers who may be involved in the care of people with diabetes in pregnancy. The term includes regulated health care professionals, such as dietitians, nurses, nurse practitioners, midwives, pharmacists, physicians, and social workers, as well as unregulated health care providers such as community workers, doulas, Elders, and providers of traditional medicine. Our choice to use "care provider" does not diminish or negate other terms that a person may prefer.

Culturally appropriate care: 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.[1]

Diabetes: A heterogeneous metabolic disorder characterized by the presence of hyperglycemia due to impairment of insulin secretion, defective insulin action, or both. The term can refer to type 1 or type 2 diabetes.

Family: The people closest to a person in terms of knowledge, care, and affection, and may include biological family, family through marriage, or family of choice and friends. The person defines their family and who will be involved in their care.

Gestational diabetes: An abnormal carbohydrate tolerance diagnosed, or first recognized, in the second or third trimester of pregnancy that was not clearly type 1 or type 2 diabetes before pregnancy.

Health care professionals: Regulated professionals, such as nurses, nurse practitioners, pharmacists, physicians, physiotherapists, psychologists, occupational therapists, and social workers.

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About Us

Ontario Health is an agency of the Government of Ontario. Our mandate is to connect and coordinate our province's health care system in ways that have not been done before to help ensure that Ontarians receive the best possible care. We work to support better health outcomes, patient experiences, provider experiences and value for money spent.

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