

Understanding the measure 'Regular monitoring of HbA1c among people with diabetes'.

Indicator name (short)

Regular HbA1c monitoring

Why this measure is important

Routine analysis of glycated haemoglobin (HbA1c) is now recommended as a standard of care for testing for and monitoring diabetes, specifically type 2 diabetes (World Health Organization 2011). HbA1c provides a reliable measure of chronic high blood glucose (suboptimal dietary and/or pharmaceutical management of glycaemia). It correlates well with the risk of long-term diabetes complications (Sherwani et al 2016).

What 'good' looks like

A reduction in HbA1c levels over time is ideal. Many believe it is essential to reduce HbA1c to a target of 50–55 mmol/mol. However, in many instances, this can be a long process. It is recognised that reducing the HbA1c level by 0.2 percent could lower mortality by 10 percent (Khaw et al 2001) and may contribute to the prevention of both microvascular and macrovascular complications (Vaag 2006).

Potential causes of variation in this measure

Diabetes management is complex. Our health care system is oriented more towards acute care and is poorly equipped to meet chronic disease management needs. This requires a focus on primary and community care to deliver self-management support, patient engagement, team-based care and population management.

Diabetes management should also extend beyond glycaemic control. Optimal diabetes management requires control of not only blood glucose levels but also blood pressure and cholesterol, which is critical for the prevention of cardiovascular disease – the leading cause of mortality for those with diabetes. In addition, screening for early complications through annual eye and foot exams, as well as lifestyle modifications such as physical activity, dietary modification and smoking cessation, require extensive counselling and coordination. Without appropriate tracking, these items are likely to be missed.

Measures that influence outcomes

Measures that may directly influence or be impacted by HbA1c monitoring are:

- enrolment with and access to a general practitioner clinic
- diabetes prevalence in the population
- wait times for and access to diabetes annual reviews (proportion of patients with diabetes who complete annual reviews)
- regular screening for renal disease
- patient efficacy/confidence in diabetes self-management
- proportion of medical/surgical bed-days for people with diabetes
- admissions for diabetic ketoacidosis
- lower-limb amputations.

What improves this measure

Symptom management and self-management supports

Determining the level of risk for macrovascular and microvascular complications is a critical component of treatment planning and target setting for each individual with type 2 diabetes. The risk of complications varies significantly across the diabetic population. The aim is to prevent complications, especially by targeting high-risk patients. Patients with existing complications (eg, foot, eye, kidney or cardiovascular disease) are in a high-risk category and should be managed intensively. Although there are generic targets for HbA1c, setting individual treatment targets for all patients with diabetes is essential. Some may just be looking to plateau and reduce HbA1c over time; others may be able and ready to reduce to target (50–55 mmol/mol) levels. Targets for HbA1c and other measures should focus on what is attainable and appropriate for individual patients and according to the best available evidence.

Self-management supports – shared medical appointments (SMAs)

Shared medical appointments are a series of consecutive individual medical consultations in a supportive group where all can listen, interact and learn. An SMA is both a personal consultation and an informal group education session and is particularly useful in supporting diabetes self-management. Specifically, SMAs have been identified as a successful treatment modality, with patients with prediabetes experiencing more significant reductions in weight, HbA1c, cholesterol and systolic blood pressure (Papadakis et al 2021).

SMAs provide the following advantages for patients.

- Group visits combat isolation and can remove doubt about one's ability to manage illness.
- Patients learn vicariously by witnessing others' illness experiences.
- Patients feel inspired by seeing others who are coping well.
- Patients receive professional expertise from the provider and first-hand information from peers, resulting in more robust health knowledge.

- Patients have the opportunity to see how the physicians interact with fellow patients, which allows them to get to know the physician and better determine their level of trust.
- The adequate time allotment compared with a regular scheduled appointment means patients feel supported.

For providers, SMAs:

- develop more equitable relationships with patients
- support increased appreciation of and rapport with colleagues, leading to increased efficiency
- enable learning from the patients to better meet their needs.

Read more on undertaking SMAs in your practice [here](#).

Self-monitoring of blood glucose

Self-monitoring of blood glucose (SMBG) and HbA1c complement each other: SMBG informs the patient about blood glucose at any time (eg, when the patient feels hypoglycaemic), informs both the patient and the doctor about the glycaemic pattern over the 24-hour cycle and guides the timing and level of lifestyle interventions and hypoglycaemic therapy.

Regular blood glucose testing for people with type 2 diabetes can be done at home using a blood glucose test meter. This is generally not needed unless patients are changing medications or are starting to take insulin for the first time.

In particular, home monitoring can be helpful for patients who are:

- starting or already taking glipizide, gliclazide or glibenclamide – this is because the risk of hypoglycaemia (low blood glucose) is higher with these medicines
- starting or already taking insulin
- at risk of frequent episodes of hypoglycaemia
- planning a pregnancy or are pregnant.

Patients usually understand that the HbA1c reflects the long-term overall control of blood glucose, whereas SMBG measures the blood glucose at one specific time. Patients can get to know what their target HbA1c level is and the reason for targets (including the increased risk of diabetic complications with higher levels of HbA1c).

An improvement story

West Coast primary health organisation: improving access to care and the journey for Māori and whānau with diabetes

In 2018, Buller Health Medical Centre and Poutini Waiora focused on improving outcomes for Māori and Pacific patients with diabetes. The two organisations work together using a whānau ora model to improve access to care for people who are not engaging with the health system. This enables people who do not usually see health providers to receive services and supports their needs to help them manage their conditions and concerns.

To start, the organisations investigated their data and identified patients with lower-than-target diabetes annual reviews (77 percent); of these, 35 percent had poor control, and Māori underwent fewer reviews and had higher rates of poor control.

Working together, the two providers offered weekly diabetes clinics where kaiaarataki (health navigators) would check height, weight and blood pressure; undertake foot checks; and discuss what other supports would be helpful.

Together with the kaupapa Māori nurse, diabetes nurse and general practitioner as needed, the programme improved diabetes annual review forms, offered e-prescriptions and adapted resources to support improved literacy.

Through this multidisciplinary team approach, the programme enhanced relationships with Māori patients and communities, built trust and provided a wide range of wraparound supports to help Māori patients improve diabetes control.

HbA1c was an outcome measure in this project and showed some promise at the time of reporting, with more work underway to continue offering support and to scale-up the programme to achieve their desired outcomes.

Further information about this case study can be found [here](#).

Related resources

- [Health Pathways media release](#) on the updated type 2 diabetes pathway for the Te Manawa Taki (Midland) region covering Bay of Plenty, Lakes, Taranaki, Waikato and Hauora Tairāwhiti health localities.
- [He Ako Hiringa's article](#) on the updated pathway for type 2 diabetes, which is endorsed by The Royal New Zealand College of General Practitioners (RNZCGP) and approved for up to 0.25 continuing medical education credits.
- [Glycaemic targets in the treatment of diabetes](#). Type 2 diabetes management guidelines from the New Zealand Ministry of Health and the New Zealand Society for the Study of Diabetes, 2020.

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