



Metro North Health Diabetes Clinical Services Plan

2021 – 2026

Metro North Health



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Introduction

The Metro North Diabetes Clinical Services Plan 2021-2026 (the Plan) articulates our roadmap for ensuring we deliver evidence based, coordinated, innovative and sustainable services for adults with diabetes. The Plan will guide distribution of resources in alignment with need to improve access to services close to home across Metro North. We will strive for integrated person centred care regardless of where residents live within the region.

Scope

The scope of the Plan includes services for persons aged 15 years and older associated with:

- Type 1 diabetes mellitus (T1DM)
- Type 2 diabetes mellitus (T2DM)
- gestational diabetes mellitus (GDM)
- linkages with other specialty services that treat common diabetes complications.
- service settings including hospitals, general practice, community-based care, primary care and the patient's home.
- the needs of Aboriginal and Torres Strait Islander peoples and those from other culturally and linguistically diverse groups.

Outcomes

It is anticipated that implementation of the Plan will deliver the following outcomes:

- Access: increased and equitable access to diabetes care for all Metro North consumers, including First Nations peoples and those from culturally and linguistically diverse backgrounds.
- Person centred care: improved consumer engagement enabling people to make informed decisions in managing their conditions and treatment processes that best suit their needs, aiming for best possible quality of life.
- Safe and effective care: quality best practice care that is sustainable and responsive to consumer needs with systems in place to monitor, analyse, and report service performance.
- Efficient care: consumers receive the right care, at the right time, in the right location.
- Integrated care: integrated and multi-disciplinary diabetes management across the continuum of care, including Metro North service partners.
- Highly skilled workforce: education, training, and support systems are in place to build the capacity of all health service clinicians to investigate, identify, and effectively address, the specific clinical needs of people with diabetes.



Current service environment

Metro North population profile

As at June 2019, Metro North had a population of 1,043,164 people, with 67.1 per cent of people aged from 15 to 64 years and 14.5 per cent aged 65 years or more. To assist with planning to meet local health service needs the Metro North region is divided into smaller areas centred on our major hospitals – The Prince Charles Hospital (TPCH), The Royal Brisbane and Women's Hospital (RBWH), Redcliffe Hospital and Caboolture Hospital. The TPCH and **RBWH** local catchment populations are the largest (347,407 and 345,241 persons), with the Caboolture and Redcliffe Hospital catchment populations each about half that size (166,557 and 183,959 persons).

The prevalence of diabetes and diabetes complications increases with age. The catchments with the greatest number of people aged 65 years and older were TPCH (49,965 persons, 14.4 per cent) and RBWH (41,076 persons, 11.9 per cent). However, the Caboolture and Redcliffe Hospital catchments had a higher proportion of residents aged 65 years and older (18.5 per cent, 30,746 persons and 16.1 per cent, 29,603 persons respectively) than both Metro North and Queensland (14.6 and 15.7 per cent respectively).

Diabetes in the Metro North population

Types of diabetes

Type 1 diabetes mellitus (T1DM)

T1DM is a lifelong autoimmune disease where the body does not produce enough insulin to regulate blood glucose levels. Usually diagnosed in childhood or early adolescence, T1DM is believed to result from an interaction of genetic and environmental factors but the exact cause is unknown. A person with T1DM requires daily insulin replacement to survive, except in cases where a pancreatic transplant occurs.

Type 2 diabetes mellitus (T2DM)

The most common form of diabetes, people with T2DM produce insulin, but do not produce enough and/or cannot use it effectively. Generally having a later onset than T1DM, it involves a genetic component but is largely preventable and is often associated with lifestyle factors including stress, physical inactivity, poor diet, being overweight or obese, and tobacco smoking. T2DM can be managed with healthy eating and regular exercise, oral glucose-lowering medications, injectable glucoselowering medications such as insulin, or a combination of these methods.

Gestational diabetes (GDM)

GDM is characterised by glucose intolerance of varying severity that develops or is first recognised during pregnancy, mostly in the second or third trimester. GDM usually resolves after the baby is born but can recur in later pregnancies and significantly increases the risk of developing T2DM in later life, both for the mother and the baby. GDM can often be managed with healthy eating and regular exercise, but in some cases will require medication.

Other diabetes

Other types of diabetes are relatively uncommon and are most typically related to certain conditions or syndromes that result in defects in insulin secretion, insulin action, or both. Specific groups relevant to Metro North are people with cystic fibrosis and those who have had organ transplantation.

All diabetes

Incidence and prevalence

The Metro North age standardised rate (ASR) for people diagnosed with diabetes, which accounts for the age structure of various populations, was 4.3 per cent (95 per cent CI 4.2 to 4.6). This rate was slightly lower than the Queensland average of 4.8 per cent (95 per cent CI 4.7 to 4.9) ⁱ.

The areas of Metro North with the highest ASR for diabetes were Caboolture (6.5 per cent), Redcliffe (5.5 per cent), Strathpine (5.4 per cent), Bribie-Beachmere (5.3 per cent) and Narangba-Burpengary (5.3 per cent).

Burden of disease

Diabetes was recognised as the eleventh highest cause of disease burden in Queensland in 2017 accounting for over 20,000 disability adjusted life years (DALYs) ". Diabetes complications are the leading cause of potentially preventable hospitalisation in Metro North representing 19.2 per cent of all potentially preventable hospitalisations and 2.0 per cent of total Metro North separations.

Mortality

From 2013-2017 the agestandardised rate of potential years of life lost due to diabetes for the total Metro North population (0.6 per 1000 persons) was lower than the Queensland rate (0.9 per 1000 persons). However, there were specific areas that had rates that were higher, including Strathpine, Redcliffe, Chermside and Nundah.

Nationally, between 2007 and 2011 the lifetime risk of dying from diabetes before age 75 years was 0.8 per cent for males and 0.5 per cent for females ⁱⁱⁱ. The rate of avoidable deaths from diabetes between 2013 and 2017 was 6.1 per 100,000 persons in Metro North compared with the Queensland rate of 7.2 per 100,000 persons. Avoidable death rates were highest in the catchment populations for TPCH and Redcliffe Hospital.

Type 1 diabetes mellitus

Nationally, the incidence rates for T1DM has been relatively stable between 2000 and 2018. In 2018, 5060 Metro North residents were registered on the National Diabetes Services Scheme (NDSS) with T1DM. Of this group, 810 were aged 30 to 39 years (16.0 per cent), 780 were aged 40 to 49 years, and 780 were aged 50 to 59 years (15.4 per cent each). Of NDSS registrants with T1DM, 80 (1.6 per cent) identified as First Nations people. First Nations people with diabetes are generally under-represented on the NDSS, therefore actual prevalence is likely higher.

Type 2 diabetes mellitus

In the Metro North region, 39,310 people registered on the NDSS have T2DM. This accounts for 3.8 per cent of residents and 84.7 per cent of NDSS registrants in the region.

Of this group 27.4 per cent are aged 70 to 79 years (10,770 registrants), 26.4 per cent are aged 60 to 69 years (10,360 registrants), and 18.0 per cent aged 50 to 59 years (7070 registrants). There were 870 registrants with T2DM who identified as First Nations people, 2.2 per cent of all registrants with T2DM.



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Diabetes in pregnancy

Diabetes in pregnancy (DIP) includes GDM and women with pre-existing T1DM or T2DM, although there is some variation in the specific care needs of the different diabetes types. Nationally the incidence of GDM has increased sharply since 2012-13, although this is thought to be related to both an actual increase in the population rates and increases in the identification and reporting of cases ^{iv}. Of women who gave birth in Queensland in 2016, 12.0 percent had a diagnosis of GDM and 6.3 per cent had pre-existing diabetes v. In the Metro North region there were 1740 NDSS registered residents who have GDM, and 50 of these women identified as First Nations people.

First Nations people

For First Nations people, health is more than the physical wellbeing of an individual and encompasses the social, emotional and cultural wellbeing of the community.

First Nations people experience diabetes in the context of their lived experience and a history of colonisation. First Nations people are disproportionately affected by diabetes, experiencing higher prevalence of T2DM and GDM and an earlier age onset of T2DM compared to non-Indigenous Australians. Barriers to accessing care include outreach and screening in communities. early identification, provision of culturally sensitive diabetes education, patients presenting later and with multiple comorbidities, and the provision of culturally sensitive care.

After taking age differences into account, across Australia, First

Nations people are 3.3 times more likely than non-Indigenous Australians to have diabetes. According to the 2018-19 National Aboriginal and Torres Strait Islander Health Survey, 20,000 First Nations people (8.7 per cent) in Queensland reported having diabetes.

In 2018, 26,257 people in Metro North identified as a person of Aboriginal and/or Torres Strait Islander origin, representing 2.5 per cent of the Metro North population. In the Metro North region there were 1,060 people registered with the NDSS who identified as First Nations people (accounting for 4.1 per cent of the First Nations population).

Transitions from paediatric to adult diabetes services

Children with diabetes must at some point transition from a paediatric diabetes service to a service for adults. While the age range for paediatric services is generally birth to 14 years, the age at which a transition occurs depends on an individual's readiness to manage their diabetes care, based on their psychological maturity, the complexity of their treatment, and the level of support available to them from family.

Service settings

Diabetes services are provided in a range of settings by multiple health professionals, depending on the needs of the patient (Figure 1). Primary prevention services aim to reduce the likelihood of developing diabetes by improving health-related behaviours such as healthy eating and physical activity. These services can be delivered to individuals in the form of brief education interventions, or at a population level via public health and social marketing campaigns.

The majority of people with well controlled diabetes are managed in a primary care setting. These services include early identification via systematic screening of all people at increased risk for diabetes, primary medical management and care coordination, and input from a range of allied health professionals. Metro North services such as emergency departments also have a role to play in targeted diabetes screening.

Complex diabetes management services will generally be provided by specialist diabetes services such as private sector endocrinologists and hospitals, or by Metro North Diabetes Services in hospitals or the community. These services include medical specialist management, nurse-led multidisciplinary teams, high-risk foot clinics, care coordination, and input from health professionals for individuals or groups. Complex diabetes management services can also include preconception, antenatal, and postnatal care for women with diabetes in pregnancy.

Home-based care

A range of diabetes care can be provided in the patient's home via a home visiting service, verbally via telephone call, or via videoconferencing. This may include direct clinical care such as monitoring blood glucose levels and medication compliance, wound care, and intravenous therapies; or patient education and support services from credentialled diabetes educators (CDE), dietitians, exercise physiologists, and social workers.

Diabetes care technology is increasing the scope of services that can be provided in the home by providing remote access to clinical information such as glycaemic control profiles. Videoconferencing and better access to online information sources provides opportunities for patient education at the time and/ or place preferred by patients.



Figure 1: Diabetes services commonly accessed across the continuum of care

Primary care

Primary care services are often those with which people with diabetes have the first and most frequent contact and therefore play a central role in diabetes care. Primary care providers include general practitioners (GPs), general practice nurses, and health professionals such as diabetes educators, dietitians, exercise physiologists, podiatrists, psychologists, and Indigenous health workers, often working together in multidisciplinary teams.

Primary care services for people with diabetes include medication and non-medical interventions to manage glycaemic control, blood pressure, blood lipid profile, and complications affecting vision, and skin integrity, and the development of other complications or conditions related and unrelated to diabetes. This includes direct clinical care and support for self-management behaviours such as exercise, nutrition, and foot checks.

GPs have a critical role in referring patients with complex care needs to specialist services and implementing and monitoring the effectiveness of changes to therapies.

Community care

Community care services provide care for people with diabetes to assess and manage their diabetes, where acute care is not required. Patients are commonly referred to community care services by GPs or following an inpatient admission for specialist diabetes review and management. Community care may involve multiple occasions of service over several months, depending on the patient's needs and service type.

Community care is provided by medical, nursing or allied health diabetes services. Care provided in the community includes medical reviews, nursing assessments, diagnostic tests, wound management, medication reviews, podiatry and group education sessions.

Emergency services

People with diabetes can experience a sudden onset of severe complications that may lead to death, therefore require rapid access to medical care. People with diabetes also commonly have other health risk factors and illnesses that lead to them presenting to emergency departments (EDs) an average of twice per year, with 25 percent of patients having attended five times in 2019-20. EDs can also provide screening interventions to identify undiagnosed cases of diabetes in high-risk presentations.

Outpatient clinics

Outpatient clinics can offer specialist diabetes care from medical specialists like endocrinologists and general physicians, or GPs with a special interest (GPwSI) and education or training in diabetes (e.g. diabetologists). Diabetes outpatient clinics can also be led by nurse practitioners, CDE's, allied health roles, and/or multidisciplinary teams (MDTs).

Acute inpatient care

Acute inpatient care services for people with diabetes include cases where diabetes is the primary reason for admission (e.g. very high or low blood glucose levels) or for another condition. When someone with diabetes is admitted to hospital for another condition or treatment (which may or may not be related to their diabetes) good glycaemic control has been associated with better outcomes for patients and reduced length of stay.

Acute inpatient care for people with diabetes can be provided by diabetes specialist teams that include endocrinologists, nurse practitioners, clinical nurses, diabetes educators, dietitians, podiatrists, and social workers. Alternately, patients may be admitted under clinical teams such as general medicine, surgery, or mental health, that may need additional support to provide optimal care, such as insulin dose adjustment and the use of emerging technologies such as continuous glucose monitoring (CGM).



Current Metro North diabetes services



Table 1 lists settings for diabetes services provided by Metro North Directorates according to the geographic location of the service. Diabetes services may be provided by Community and Oral Health Directorate (COH) or other Directorates. There are other services that are commonly accessed by people with diabetes that are not listed in this table.

| Service type | Herston | Chermside | Caboolture | Redcliffe | North Lakes |
|--------------------------|---|--|---|---|---|
| Inpatient | RBWH RBWH General Medical Unit RBWH Diabetes Service | TPCH TPCH Endocrinology Service COH Diabetes Educator Inreach Service | Caboolture Hospital General Medicine Service COH Diabetes Inreach Service COH Paediatric Inreach | Redcliffe Redcliffe Hospital Redcliffe Hospital General Medicine Service COH Diabetes Inreach Service COH Paediatric Inreach | Not applicable |
| Outpatient | RBWH Endocrinology Medical Specialist Outpatient Clinic Diabetes Educator Clinic Dietetics Clinic MDT & High Risk Foot Clinics | COH Chermside Community Health Centre COH Diabetes Medical Specialist Outpatient Clinic COH MDT Diabetes Clinic Podiatry-led High Risk Foot Clinic | Caboolture Hospital General Medicine Medical Specialist Outpatient Clinic COH Caboolture Community Health Centre COH Diabetes Specialist Medical Outpatient Clinic COH MDT Clinic Podiatry-led High Risk Foot Clinic | Redcliffe Hospital General Medicine Medical Specialist Outpatient Clinic Podiatry-led High Risk Foot Clinic | North Lakes Health Precinct COH Diabetes Medical Specialist Outpatient Clinic COH MDT Diabetes clinic Podiatry-led High Risk Foot Clinic |
| Group programs | RBWH DAFNE (T1DM) Groups Pilot DAFNE Insulin Pump group RBWH/QUT T2DM Groups Diabetes and Healthy Kidneys Exercise and Education CGM Groups Carbohydrate Counting Groups | No service available | No service available | No service available | North Lakes Health Precinct RBWH Diabetes and Healthy Kidneys Exercise and Education COH Group Exercise Physiology |
| Virtual care | RBWH Endocrinology Medical Specialist Outpatient Clinic | COH MDT Clinic | COH MDT Clinic | No service available | COH MDT Clinic |
| Diabetes in Pregnancy | RBWH Antenatal MDT Diabetes Clinic GDM Clinic GDM Diet and Education Groups CGM Group or Individual Session | No service available | Caboolture Hospital GDM Endocrinology Clinic Obstetric Endocrine Clinic Antenatal Diabetes Educator Clinic Antenatal Dietitian Clinic | Redcliffe Hospital Antenatal Endocrinologist Clinic Antenatal Diabetes Educator Clinic Antenatal Dietitian Clinic | No service available |
| Young people | No service available | COH Chermside Community Health Centre COH MDT Clinic | Caboolture Hospital COH MDT Inreach Service COH Caboolture Community Health Centre COH Paediatric Diabetes Clinic COH MDT Transition Clinic | Redcliffe Hospital COH MDT Inreach Service | North Lakes Health Precinct COH Paediatric Diabetes clinic COH MDT Transition clinic |

Table 1: Current Metro North diabetes services and providing Directorate by location

Service activity

Emergency services

In 2019-20 there were 35,877 emergency department (ED) presentations for people flagged with diabetes, an average of 2.2 presentations per person with diabetes. This represents 7.2 per cent of total ED presentations in Metro North compared with 4.3 per cent of the local population who are diagnosed with diabetes. In 2019-20, 3908 patients with diabetes (23.9 per cent) presented to the ED three or more times.

Most ED presentations were for T2DM (74.2 per cent), followed by undetermined diabetes diagnosis (10.5 per cent), GDM (6.8 per cent), T1DM (4.8 per cent), and both T1DM and T2DM (4.1 per cent).

Between 2017-18 and 2019-20 total presentations at Metro North EDs with a primary diagnosis of diabetes decreased from 552 to 507 (-4.2 per cent per annum). Total presentations by all persons with diabetes increased from 34,931 to 35,979 (1.5 per cent per annum).

Non-admitted services

In 2019-20, there were 27,661 occasions of service (OOS) specific to diabetes of which 53.4 per cent were provided by COH, 24.8 per cent by RBWH, 10.1 per cent by Caboolture Hospital, 9.4 per cent by Redcliffe Hospital, and 2.2 per cent at TPCH (where most diabetes patients are treated by the endocrinology clinic rather than a diabetes clinic). Patients who identified as First Nations peoples accounted for 3.9 per cent of OOS, which is lower than the population share of 4.3 per cent. Total activity for people with diabetes in other

outpatient services (excluding GDM) amounted to 297,329 OOS.

Occasions of service for paediatric patients (aged 0 to 14 years) accounted for 8.3 per cent of total activity (n=2284).

Between 2017-18 and 2019-20 total OOS for diabetes specific outpatient clinic 255 Diabetes decreased from 21,439 to 21,347 (-0.2 per cent per annum), and for 256 Diabetes Education increased from 6048 to 6359 (2.5 per cent per annum). All outpatient activity for patients flagged as having diabetes increased by 2.2 per cent per annum.

Admitted services

In 2019-20, there were 24,462 patients admitted to a Metro North service with any diagnosis of diabetes, accounting for 74,750 separations. Admitted patient separations with a primary diagnosis of diabetes (1843 separations) were relatively low compared with separations where diabetes was a secondary diagnosis (33,087 separations). There were 39,820 separations for patients flagged as having diabetes but not coded as such. Patients with any diagnosis of diabetes averaged 3.0 separations during the same period.

Between 2017-18 and 2019-20 separations with a primary diagnosis of diabetes decreased from 1905 to 1843 (-1.6 per cent per annum), whereas separations for all patients identified as having diabetes increased from 65,324 to 71,621 (4.7 per cent per annum).

Separations for residents of the RBWH catchment were the lowest despite having the largest population, and the proportion of separations for residents of Caboolture Hospital and Redcliffe Hospital catchments were higher than their respective share of the Metro North population. First Nations peoples accounted for 5.3 per cent of separations.

Perinatal activity

In 2019-20, 1522 mothers (18.9 per cent) who gave birth at Metro North facilities had diabetes (both acquired during pregnancy and pre-existing). Of these women, 31.1 per cent were residents of Redcliffe Hospital catchment and 25.7 per cent were residents of Caboolture Hospital catchment. First Nations people accounted for 10.7 per cent of total admitted separations with a primary diagnosis of diabetes in pregnancy (n=15), which is twice the proportion of the Metro North population that identifies as First Nations people (4.3 per cent).

Between 2017-18 and 2019-20 total admitted separations with a primary diagnosis of diabetes in pregnancy decreased from 172 to 139 (-10.1 per cent per annum). In the same time period, admitted separations where diabetes in pregnancy was a secondary diagnosis increased from 3237 to 3586, (349 separations, 5.3 per cent per annum).

Issues and challenges

Diabetes service models

People with diabetes frequently have complications and comorbidities that make management complex and burdensome on the patient when attending multiple appointments across different services. Comorbidities of renal failure, congestive heart failure, chronic obstructive pulmonary disease, and discordant blood pressure had the largest relative impact on expenditure and inpatient hospital admissions for people with diabetes.

Demand for diabetes specialist services is exceeding supply and is expected to grow. Consumers have expressed high levels of satisfaction with telehealth services that reduce the burden of travel for multiple appointments, however for service transformation to occur there needs to be high levels of trust and collaboration developed both within Metro North services and with other providers. There is not a clearly defined framework that provides for consistency in the diabetes service roles and settings, meaning there is variation in standards of care across Metro North.

Early identification

Research shows that people with diabetes frequently present to EDs and that many of these people are unaware they have the condition. Early and proactive management of hyperglycaemia in the ED reduces subsequent inpatient length of stay. Many patients who present to the ED with severe hyperglycaemia had a recent prior presentation. Identifying and linking these patients with appropriate diabetes services could prevent future episodes. Patients presenting to ED for severe hyperglycaemia episodes, and who are discharged with high BGLs or without BGLs having been checked prior to discharge, have higher rates of readmission.

Primary care

Concerns were raised by Metro North diabetes service clinicians that GPs may not have the skills, knowledge or access to the multidisciplinary team to manage complex diabetes patients and there are no formal support mechanisms to access specialist advice for them. Access to diabetes allied health services in the private sector is limited by provider availability and cost to patients. Access to bulk-billed allied health services in the community is limited, especially to diabetes educators, dietitians and psychologists.

Management of people with complex T2DM with complications and comorbidities is very challenging as it involves multiple specialities. Patients and specialists are sometimes reluctant to discharge to GPs or private allied health providers.

Inpatient care

A recent statewide audit of Queensland hospitals found that the diabetes service workforce in Metro North is low compared to other hospital and health services (HHS's). TPCH, Redcliffe and Caboolture Hospitals do not have dedicated diabetes services for inpatients, and RBWH provides a specialist consultation-liaison service.

T1DM should be under the care of a specialist, ideally as part of a full specialised diabetes MDT that encompasses newly diagnosed T1DM, poorly managed T2DM, and antenatal care.

Multiple stakeholders identified there is a need to improve access to specialist diabetes input for inpatients, especially perioperative care. There is limited support for T1DM



management within hospitals, for example, not making carbohydrate information available at meal times, not providing a means for medical staff to prescribe insulin: carbohydrate ratios (ICR) of insulin sensitivity factor (ISF), and not having forms or processes for nurses to document insulin doses when flexible dosing is recommended.

Access to inpatient diabetes education services is limited, delayed, and inequitable across facilities. Diabetes knowledge and education is a gap for inpatients as well as nursing and support staff. Historically this education was provided by CDEs but increasing service activity means this is no longer possible. Literature reports that diabetes care is suboptimal when provided by non-endocrine clinicians/wards. Management of diabetes for patients undergoing surgery is particularly problematic.

Some people with diabetes may not be able to safely self-administer insulin whilst inpatients. Removing the ability for patients to self-administer insulin may increase the risk of incorrect or missed doses and disempowers clients in managing their own health.

COH outpatient diabetes education clinics are currently booked weeks in advance, which can delay the provision of diabetes education to hospital inpatients. This in turn leads to increased inpatient length of stay, and/or patients being discharged without receiving education, leaving them at increased risk of serious complications until they can access outpatient services.

Outpatient care

Demand for some outpatient diabetes services has increased to such a large extent that eligibility criteria have needed to become extremely restrictive, meaning more patients are waiting longer to access care and may worsen during that time. Varying service capacity across service locations means access to specialist care is variable across Metro North. In addition, access to group education services for diabetes patients is not consistent across Metro North, with limited group services in the northern area of the catchment.

Most medical specialists working in clinics run by COH are employed by hospitals, which presents issues from service governance and continuity, and there is no backfill provided by hospitals.

Different information technology systems used to book outpatient appointments for medical and COH clinics inhibit evaluation of clinic utilisation and tracking of patient pathways involving other service lines. Access to physical space for outpatient clinics is limited and patients report preferring community-based clinics rather than going to hospitals. Referrals are processed and categorised using clinical prioritisation criteria (CPC) and appointments scheduled in line with other demand, which may delay access to more urgent care.

High risk foot services

Diabetic foot disease is common, complex and costly, and requires management by a multidisciplinary foot care team. Across Metro North the majority of diabetic foot disease management occurs in a siloed approach, with one MDT Complex Foot Clinic at RBWH (monthly) and TPCH providing the only inpatient podiatry service. A significant gap in diabetic foot disease management is the absence of endocrinology, podiatry, and diabetes educator foot clinics. The National Association of Diabetes Centres (NADC) interdisciplinary high risk foot services standards recognise these as core staffing for diabetic foot care teams. Other interdisciplinary clinics have been established (e.g. between podiatry and orthopaedics/infectious diseases/vascular), however there are concerns about their sustainability.



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Diabetes in pregnancy

Clinicians reported an increasing incidence of presentations for GDM to Metro North maternity services and demand for inpatient diabetes educator services is exceeding supply.

Women accessing GDM services experience shame and anxiety related to their diabetes, and often have historical trauma. Women whose diabetes is managed with medication are currently excluded from access to the birth centre model of care at RBWH, but can access midwife led care, including midwifery group practice, at RBWH and Caboolture Hospital.

There is limited preconception care for females or males despite demonstrated health outcomes benefits. The DIP service sees women with T1DM during their pregnancy however there is limited follow-up care post partum. CGM is indicated for DIP patients, but service models need to be updated to optimise its utility.

Young persons

Metro North currently operates a joint paediatric and adult service model at two sites, however the paediatric medical specialist coverage is different – paediatric endocrinologist versus general paediatrician. The dual caseload for clinicians also makes it difficult to find staff to manage both patient groups and has been shown to lead to clinician burn out.

Patients transitioning from paediatric to adult diabetes services can experience discontinuity of care due to challenges with handover and differing models of care. Younger patients with diabetes who have a high degree of technological awareness require support from staff with knowledge of that technology.

First Nations people

First Nations people have higher incidence and prevalence rates for T2DM and GDM, and an earlier age onset of T2DM. Diabetes education and care needs to be delivered in a culturally sensitive manner by appropriately trained staff. First Nations women are at higher risk of developing T2DM following GDM and in addition early postpartum screening among First Nations women is low.

The rate of utilisation of Metro North outpatient diabetes services by First Nations people is lower than the proportionate population representation, but separations for admitted patient services are higher than the population proportion.

Care coordination and integration

COH diabetes service specialist medical clinics, allied health clinics, and nurse-led clinics run independently. There is potential for a more cohesive service by combining to one service with criteria for which patients are seen by which clinicians. Nurse-led care planning already occurs for nonmedical clinics.

Integration across sectors needs to be improved to facilitate rapid follow-up post-discharge and prior to next GP review, for example, for newly diagnosed T1DM and those with significantly altered insulin doses. There is poor communication between Metro North diabetes services, as well as between Metro North services and communitybased service providers. Different Directorates use of different corporate systems for recording patient information and the turnover of hospital staff makes it difficult to maintain relationships without supporting systems or structures.

Workforce

Access to CDE's is limited and inequitable across Metro North. Some inpatients are waiting days for CDE review and/or are discharged without review, which contributes to sub-optimal care and unplanned readmissions.

COH nurse practitioners can prescribe medication but are unable to order diagnostic tests under current organisational arrangements. This limits their scope of practice. Dietitian and CDE roles in changing insulin doses had been increasing in line with the statewide *Guiding* principles for local credentialing of registered nurses and accredited practising dietitians to provide advice on insulin dose - A quide for Hospital and *Health Services* ^{vi}. However, not all staff are working to the full extent of their scope of practice in this area due to differing credentialing requirements across Directorates, which contributes to higher workloads for CDEs, nurse practitioners, and medical specialists. Proposed changes to Health (Drugs and Poisons) Regulation 1996, and Australian Council for Safety and Quality in Health Care (ACSQHC) review of scope of practice for healthcare

clinicians who are credentialled within health services, need to be monitored as they may further impact these practices.

High levels of service demand mean opportunities for diabetes service staff to engage with peers for education and professional support are limited. Several diabetes services are not resourced to cover staff leave, professional development, or illness. There are currently no dedicated social work resources in some diabetes services, but social issues for patients and their families significantly affect diabetes selfcare and outcomes.

First Nations workforce needs to be increased particularly medical officers, diabetes educators, midwives and nurses. There is an opportunity to upskill the existing First Nations workforce in diabetes management. Even with additional First Nations workforce, all diabetes staff need to be trained to deliver culturally sensitive diabetes care.

Technology

Electronic records of MyPlan are now deleted so there is no means for communication between COH diabetes services and Caboolture and Redcliffe Hospitals.

Clinicians from diabetes and non-diabetes services are having difficulty maintaining awareness of technological development, but consumers are driving its uptake. Variation in access to diabetes services mean that patients eligible for CGM at some service locations are being placed on a waiting list to access the technology.



Uptake of virtual diabetes services to remotely support inpatients and outpatients is inhibited by variable access to telehealth technology and a belief that some patients struggle working with technology.

Research

The focus on increasing service activity to meet growing demand, and lack of backfill for clinical roles, means there is no dedicated time/capacity for diabetes specific research or quality improvement activities. It is difficult to access data regarding outcomes for patients with diabetes across Metro North, which hinders service evaluation and research.

The plan

The focus areas for the Metro North Diabetes Clinical Services Plan 2021-2026 are:

- 1. Patient centred diabetes care
- 2. Consistency of care
- 3. Building workforce capacity and capability
- 4. Care coordination
- 5. Diabetes in pregnancy
- 6. Technology, innovation and infrastructure.

The actions are grouped into priority actions and other actions. The intent is the priority actions will be commenced within the first two years. The remainder actions will be progressed in the latter part of implementation of the Plan. Any actions that require additional resourcing will follow the usual organisational budgetary process. Where there is dual responsibility for Directorates and clinical streams, the Directorate will be directly responsible for implementation and the Stream will be responsible for ensuring consistency and equity across Metro North Health.



1. Patient centred diabetes care

Future state

Diabetes care across the care continuum is patient centred, actively ensuring patients are partners in their care rather than recipients. People with diabetes are engaged in the development of their care plans that identify their goals and service pathways, and they maintain custodianship of these plans. Services are culturally appropriate with dedicated pathways for people who identify as Aboriginal and/or Torres Strait Islander, and other population groups who may require additional support.

People are empowered to manage their diabetes care through increased access to services to support their self management journey, including individual and group diabetes programs. When a person with diabetes requires hospital care they will be supported to continue to self manage their diabetes, where safe and clinically appropriate. Diabetes service models across Metro North use a range of modalities to meet individual care needs and preferences including face-to-face care and/or virtual video care.

Young people transitioning from paediatric to adult diabetes services have a full clinical handover involving both services, including the specific diabetes technology they used, to ensure continuity of care.

| Prio | rity actions | Responsibility |
|------|---|---|
| 1.1 | Actively engage people with diabetes and their GPs in the development and implementation of care plans that identify goals and service pathways. Patients should maintain custodianship of these plans. | COH, RBWH |
| 1.2 | Develop (or source from other parties) standardised and culturally appropriate diabetes education resources for use across Metro North. | Diabetes Network (to be established) |
| 1.3 | Patient reported experience and outcome measures are collected and used to inform quality improvement activities across Metro North diabetes services. | COH, RBWH |
| 1.4 | Identify and implement service protocols and criteria to guide the assessment of a person's competence to safely self-manage and administer insulin whilst admitted to hospital. | RBWH, TPCH, CABH, REDH, COH, Women's and Children's Stream |
| 1.5 | Establish referral pathways in line with Queensland Health's Type 1 Diabetes Transition Model of Care Guideline, A journey from Paediatric to Adult Health Care to ensure people transitioning from paediatric to adult diabetes services are linked with a suitable service. | СОН |
| 1.6 | Promote pathways for referral of First Nations people to culturally appropriate diabetes education services provided by other organisations such as Diabetes Queensland or Institute for Urban Indigenous Health (IUIH) member services. | Medicine Stream |



2. Consistency of care

Future state

Commencing at first contact with Metro North (such as outpatient department, community or emergency departments), all people at increased risk for diabetes will be screened to identify undiagnosed cases and commence appropriate management within the hospital and/or community. All admitted patients with diabetes are screened for common diabetes complications and referred to appropriate services for follow-up.

A centralised process within Metro North is used to triage and stream all diabetes outpatient referrals to an appropriate provider, based on clearly defined criteria. People are referred to a more suitable service, or discharged from the service, once the criteria are no longer met or otherwise clinically indicated. Those with severely impaired glycaemic control will be seen at rapid access clinics to stabilise their condition.

Each Metro North hospital has at least one specialist diabetes care team, comprised of an endocrinologist, junior doctor, specialist dietitian and either a specialist nurse, credentialled diabetes educator (CDE), or nurse practitioner, depending on local needs. The team has responsibility for:

- direct management of inpatients with diabetes as a primary diagnosis
- consultative advice for inpatients with diabetes as a secondary diagnosis
- discharge planning and coordination of diabetes care across services and settings, including primary care

• the improvement of diabetes management expertise throughout the hospital through development of diabetes management protocols and staff education.

The team works closely with the community diabetes team to ensure consistency of messaging regardless of which team or clinician the person sees in Metro North.

There are consistent protocols across Metro North for the management of insulin dosing by clinicians, that clearly articulate the credentialing of disciplines for insulin dose adjustment.



| Prio | rity actions | Responsibility |
|------|---|---|
| 2.1 | Improve integration and collaboration across services through establishment of the Metro North diabetes working group, including representatives from First Nations peoples, IUIH, and Brisbane North PHN | Medicine Stream, RBWH, TPCH, CAB, REDH, COH |
| 2.2 | Implement targeted diabetes screening as standard care for all people presenting to Metro North hospitals who are at increased risk (e.g. age 50+ years, First Nations people, people who are obese, women with a history of GDM), supported by clearly defined protocols and resources to manage referral to the most appropriate diabetes care providers. | RBWH, TPCH, CABH, REDH |
| 2.3 | Establish Specialist Diabetes Care (SDC) teams within Metro North admitted patient facilities. The team will have responsibility for management of diabetes using specific referral criteria, ward liaison, diabetes management advice, care coordination and discharge planning and improving diabetes management expertise throughout the hospital via education and the development and implementation of diabetes management protocols. | RBWH, TPCH, CABH, REDH, COH |

| Prio | rity actions | Responsibility |
|------|---|--|
| 2.4 | Provide equitable access to group diabetes management programs for all residents across the region, including access to third party providers where appropriate. The programs will include exercise physiologists, dietitians, diabetes educators and psychologists. | RBWH, COH, TPCH, CABH, REDH |
| 2.5 | A Metro North protocol and supporting clinical forms are developed and utilised so that all admitted patients with diabetes as a primary or secondary diagnosis are screened for common diabetes complications and provided with education and/or referral to appropriate services where indicated. | RBWH, TPCH, CABH, REDH, COH |
| Oth | er actions | Responsibility |
| 2.6 | Establish rapid access or 'drop in' outpatient clinic models to provide care within clinically appropriate timeframes for patients requiring more urgent or convenient access to these services. | RBWH, TPCH, CABH, REDH, COH |
| 2.7 | Review and adopt consistent eligibility and discharge criteria across Metro North outpatient diabetes services. | COH, RBWH, TPCH, CABH, REDH |
| 2.8 | Establish formal arrangements with IUIH providers for referral of First Nations patients to the Care Coordination and Supplementary Services program and disseminate information to relevant Metro North services. | Medicine Stream |
| 2.8 | Establish a clinical position to develop systems supporting the provision of opportunistic diabetes screening for First Nations communities via the Better Together Van. | COH, Aboriginal and/or Torres Strait Islander Leadership Team |
| 2.10 | Achieve universal access to full multi- disciplinary teams for high risk foot care across both inpatient and outpatient settings. | RBWH, TPCH, CABH, REDH |



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3. Building workforce capacity and capability

Future state

A 'one service' culture is practiced across all Metro North diabetes services, disciplines and settings. All clinical disciplines are supported to work to their full scope of practice through professional development and formal recognition of skills to maximise their contribution to service capacity and job satisfaction. Regular peer development sessions, rotation of clinical staff between diabetes services, and opportunities for mentoring, will build clinical competencies and relationships to support a collaborative service culture.



| Pric | rity actions | Responsibility |
|------|---|--|
| 3.1 | Review current diabetes service role descriptions against the statewide <i>Guiding principles for</i> <i>local credentialing of registered nurses and</i> <i>accredited practising dietitians to provide advice</i> <i>on insulin dose - A guide for Hospital and Health</i> <i>Services,</i> the <i>Medicines and Poisons Act 2019</i> <i>(QLD),</i> and the outcomes of the ACSQHC review of scope of practice for healthcare clinicians who are credentialled within HHS's, to identify opportunities to maximise scope of practice through credentialing for insulin dose advice (IDA). | RBWH, TPCH, CABH, REDH, COH |
| 3.2 | Participate in the bi-annual Queensland Inpatient Diabetes Survey to benchmark local service provisions. Develop an action plan based on the results. | RBWH, TPCH, CABH, REDH, COH |
| Oth | er actions | Responsibility |
| 3.3 | Develop a single clinical governance model for Metro North diabetes services that encompasses all clinicians and reinforces the multidisciplinary clinical team approach. | COH, RBWH, Medicine Stream |
| 3.4 | Develop an interdisciplinary diabetes practice framework that specifies what aspects of diabetes care can be provided by various professional disciplines to identify where access to credentialing, provider numbers, or additional qualifications, education, and training, may be required to maximise their scope of practice. | COH, RBWH |
| 3.5 | Develop and implement diabetes education modules (or source from other providers) as a compulsory component of all Metro North clinician inductions and training programs. | Medicine Stream, RBWH, TPCH, CABH, REDH, COH |
| 3.6 | Promote the development of CDE workforce to meet service demand and backfill of current positions through training pathways for clinical staff to become CDEs. | COH, RBWH, TPCH REDH, CABH |
| 3.7 | Schedule regular multidisciplinary inservice events to provide time for peer supported education, quality improvement, and research activities, for Metro North diabetes service clinicians. | COH, RBWH |
| 3.8 | Provide First Nations health workers and midwives with access to diabetes education and training provided by Diabetes Queensland. | Metro North Aboriginal and/or Torres Strait Islander Leadership Team, RBWH, CABH, REDH |

4. Care coordination and integration

Future state

A diabetes shared care model is used between Metro North diabetes services and GPs, supported by joint access to systems and protocols accessed via HealthPathways. Diabetes clinics operate as one multidisciplinary service supported by electronic medical records (EMR), with patients assessed and referred to the most appropriate provider based on their clinical needs and the competencies and credentials of specific clinicians.

Care is coordinated between all services commonly accessed by people living with diabetes and service clinicians will be supported to develop the knowledge and skills required to provide interdisciplinary and coordinated care.

The capacity for GPs to manage more complex diabetes patients is facilitated through access to real time patient information such as diagnostic testing, medication lists, and care plans; direct contact with diabetes care specialists through telephone and video conferencing support; and access to online clinical and patient education resources.

| Prio | rity actions | Responsibility |
|------|--|---|
| 4.1 | Establish nurse navigator/care coordinator roles to assist all First Nations patients of Metro North diabetes services. | RBWH, TPCH, CABH, REDH, COH |
| 4.2 | Collaboratively develop shared care frameworks that clearly identify the roles and responsibilities of Metro North diabetes services and other healthcare providers treating patients with complex diabetes care needs. | Metro North GPLOs (consultative basis only), RBWH, REDH, CABH, TPCH |
| Oth | er actions | Responsibility |
| 4.3 | Patients are referred to appropriate community or primary care services to meet their needs between discharge and GP follow-up when required. | COH, RBWH TPCH, CABH, REDH |
| 4.4 | Establish a means for GPs to access specific information and advice on patient management from specialist diabetes services, including diabetes in pregnancy. | Medicine Stream, Women's and Children's Steam, Metro North GPLOS/ Brisbane North PHN (support and advice) |
| 4.5 | Deliver education and training programs for GPs in partnership with Brisbane North PHN to align practice with diabetes shared care models, including diabetes in pregnancy. | RBWH, REDH, CABH, TPCH, Metro North GPLOs/ Brisbane North PHN |
| 4.6 | Case conferencing occurs at assessment and review of First Nations persons, with their diabetes care team (including GP and social worker) invited to participate. | TPCH, RBWH, COH, CABH, REDH |



5. Diabetes in pregnancy

Future state

Preconception care is provided to males and females, including young people accessing diabetes services, to reduce the risk to mothers and babies associated with a diagnosis of diabetes in pregnancy. Comprehensive support is available for the physical, psychological, emotional and social needs of women with a diagnosis of diabetes in pregnancy.

Women with uncomplicated gestational diabetes are managed within general practice supported by documented shared care arrangements and access to specialist support and authoritative information on patient management. Specialist care for the management of diabetes in pregnancy is provided by Metro North services with input from endocrinologists, diabetes nurse practitioners, GPs with a special interest (GPwSI), CDEs, dietitians, or other disciplines, according to specific patient needs.

| Pric | rity actions | Responsibility |
|------|---|---|
| 5.1 | Increase utilisation of existing shared care models to support GPs in the management of gestational diabetes pregnancies. | RBWH, REDH, CABH |
| Oth | er actions | Responsibility |
| 5.2 | Review and update service models and treatment protocols for diabetes in pregnancy to ensure they provide access to trauma- informed MDT care that meet the individual needs of each patient. | RBWH, REDH, CABH |
| 5.3 | Review and update diabetes in pregnancy service models and protocols to optimise the use of CGM in line with published evidence of benefit and eligibility criteria. | RBWH, REDH, CABH |
| 5.4 | Collaborate with Diabetes Queensland to coordinate 'Felt Mum' gestational diabetes education for Ngarrama Service patients. | Aboriginal and/ or Torres Strait Islander Health Leadership Team, RBWH Women's and Newborn Services |
| 5.5 | Embed preconception care within the service model for patients transitioning from paediatric to adult diabetes services. | СОН |



6. Technology, innovation, and infrastructure

Future state

Clinical information systems provide real time access to diabetes data to inform clinicians and diabetes service consumers about their diabetes status, and whether they are required to attend a follow-up appointment to modify their treatment, or they can receive clinical input and support remotely. This reduces the need for some diagnostic testing and presentations for review appointments where their diabetes is well managed. An enhanced Metro North diabetes database enables the analysis of patient outcomes for service evaluation and a formal program of research activities.

What we will do:

| Pric | ority actions | Responsibility |
|------|--|--|
| 6.1 | Develop processes and systems required to embed virtual care as business as usual across all Metro North diabetes services. | COH, RBWH TPCH, CABH & REDH |
| 6.2 | Progress the identification and implementation of an online clinical information management system that provides real time access to patient diabetes clinical information to support remote monitoring/ virtual care models. | СОН |
| 6.3 | Metro North High Risk Foot Services (HRFS) annually map service provisions against NADC Collaborative Interdisciplinary Diabetes HRFS Standards. | Podiatry, Metro North |
| Oth | er actions | Responsibility |
| 6.4 | Use computer-based clinical decision support tools, supported by established protocols, to assist medical staff when ordering insulin doses for non-critical diabetes inpatients. | RBWH, TPCH, CABH, REDH, COH |
| 6.5 | Provide access to diabetes device data (e.g. CGM glucose profiles) for all clinicians, with support for use provided by Specialist Diabetes Care teams. | СОН |
| 6.6 | Seek recurrent funding for a fulltime clinical technologist position to define Metro North IT system requirements for evolving diabetes technologies and provide ongoing support for utilisation in clinical settings. | Medicine Stream, Women's and Children's Stream |
| 6.7 | Investigate options for Metro North to fund the provision of CGM technology for patients with specific clinical indications who do not meet the NDSS criteria. | RBWH, TPCH, CABH, REDH, COH |
| 6.8 | Develop and implement strategies to promote accurate recording and coding of diabetes as a primary or secondary diagnosis for patients accessing all Metro North services. | Medicine Stream |
| 6.9 | Establish a database to collate all Metro North diabetes service patient clinical, outcome and experience information for research and evaluation activities. | Digital Metro North |

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| Other actions | Responsibility |
|--|---------------------------------|
| 6.10 Designate diabetes technology subject matter experts (SMEs) within diabetes services to provide peer education and 'just in time' support relating to specific technologies/systems. | COH, RBWH, TPCH, CABH & REDH |
| 6.11 Provide appropriate clinical space and equipment and IT infrastructure requirements to accommodate increasing demand for diabetes services across all service models (i.e. individual consultations, group programs, and virtual care) where required. | RBWH, TPCH, CABH, REDH, COH |



Implementation, monitoring and review

Metro North Medicine Clinical Stream will oversee the development of an implementation plan to progress actions throughout the plan horizon. Some actions may require additional resourcing which will be sought through Metro North budgetary allocation processes. Implementation will be monitored and reported by the Medicine Stream yearly, with reports to include progress against the following measures:

- 90% of patients report they are "always partners" in their care
- Annual targets for the reduction of potentially preventable hospitalisations for Aboriginal and Torres Straits Islander persons are met
- Diabetes group programs are available within each Metro North hospital catchment
- All identified Aboriginal and/ or Torres Strait Islander people with diabetes accessing Metro North diabetes services have a designated care coordinator
- At least 30% diabetes outpatient appointments are provided virtually.



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