Diabetes Masterclass

24 November 2026

The content in this session is valid at date of presentation

Acknowledgement of Country

North Western Melbourne Primary Health Network and Western Health would like to acknowledge the Traditional Custodians of the land on which our work takes place, the Wurundjeri Woi Wurrung People, the Boon Wurrung People and the Wathaurong People.

We pay respects to Elders past, present and emerging as well as pay respects to any Aboriginal and Torres Strait Islander people in the session with us today.



Housekeeping for everyone joining us here at Footscray Hospital



Sign in

- Please ensure you have signed in using the sheet at the door.



Emergency Exits

- Do not use the elevator in case of an emergency we will walk down the stairs to exit building.



Kitchenette

- Help yourself to water, tea, and coffee in the kitchenette



Toilets

- Follow the signs

Please do not enter the main office area and keep to training rooms and kitchens.

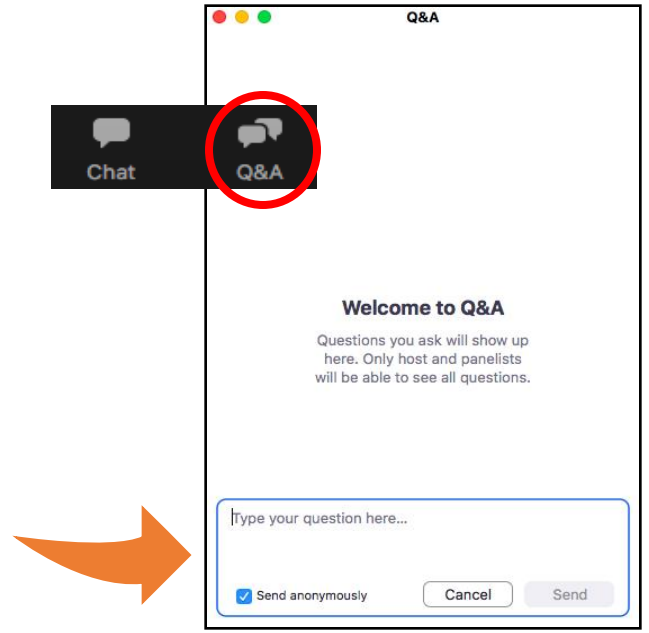
Housekeeping – Zoom webinar for the online attendees

All online attendees are muted so please ask questions via the Q&A box only

Put your hand up if you are here in auditorium and bear with us as we bring a microphone to you.

This session is being recorded.
You will receive a link to this recording and copy of slides in post session correspondence.

Type your questions in the Q&A box.

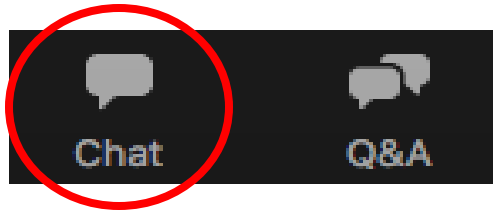


Housekeeping – Zoom webinar

Is your session name the same as your registration?

To ensure we can issue your certificates and CPD please ensure you have joined the session using the same name as your event registration (or phone number, if you have dialled in).

Not sure if your name matches, send a Chat message to 'NWMPHN Education' to identify yourself.

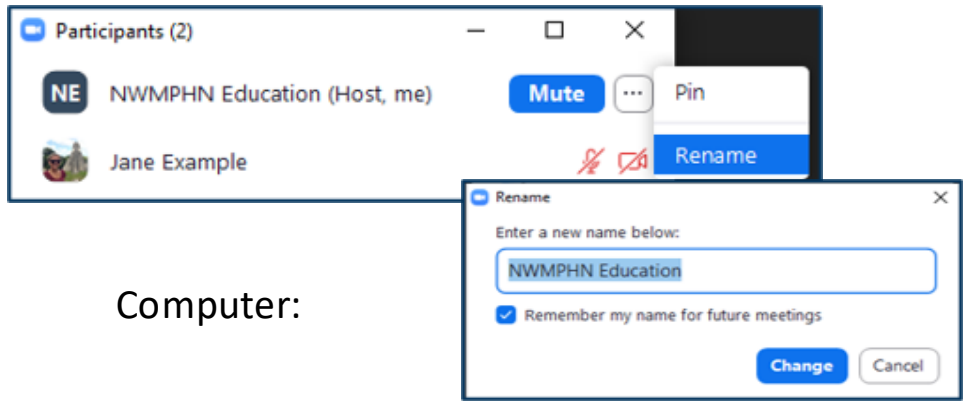


Housekeeping – Zoom webinar

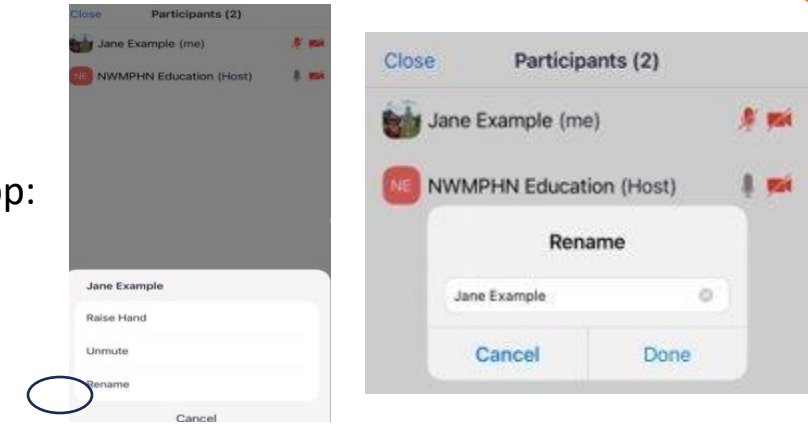
How to rename yourself

1. Click on **Participants**
2. If using
   - App: click on your name
   - Computer: hover over your name and click the 3 dots
   - Mac: hover over your name and click More
3. Click on **Rename**
4. Enter the name you registered with and click **Done** / **Change** / **Rename**

Computer:



Phone/App:



Speakers

Deepa Ariarajah

Drs Chris Preston and **Sylvia Ye** are endocrinologists working in Western Health's diabetes outpatient clinics.

Dr Fran D'Elia is an endocrinology registrar completing specialist training at Western Health.

Dr Hannah Wallace is a nephrologist with a special interest in diabetic nephropathy.

Deepa Ariarajah and **Mr Ashvin Nursing** are diabetes clinical nurse consultants.

All have clinical and research interests and expertise in diabetes.

HealthPathways Melbourne

Diabetes Masterclass - Hybrid session

24th November 2026

HealthPathways : Clinical Management and Referral Resource



Localised Clinical Pathways
(Evidence-based guidance adapted for Melbourne clinicians)

Referral Information
(Clear referral instructions for local health services and hospitals)

Regular Updates
(Pathways reviewed and updated regularly by Clinical Editors)

CPD Hours
(Track and record CPD activities directly through Pathway page)

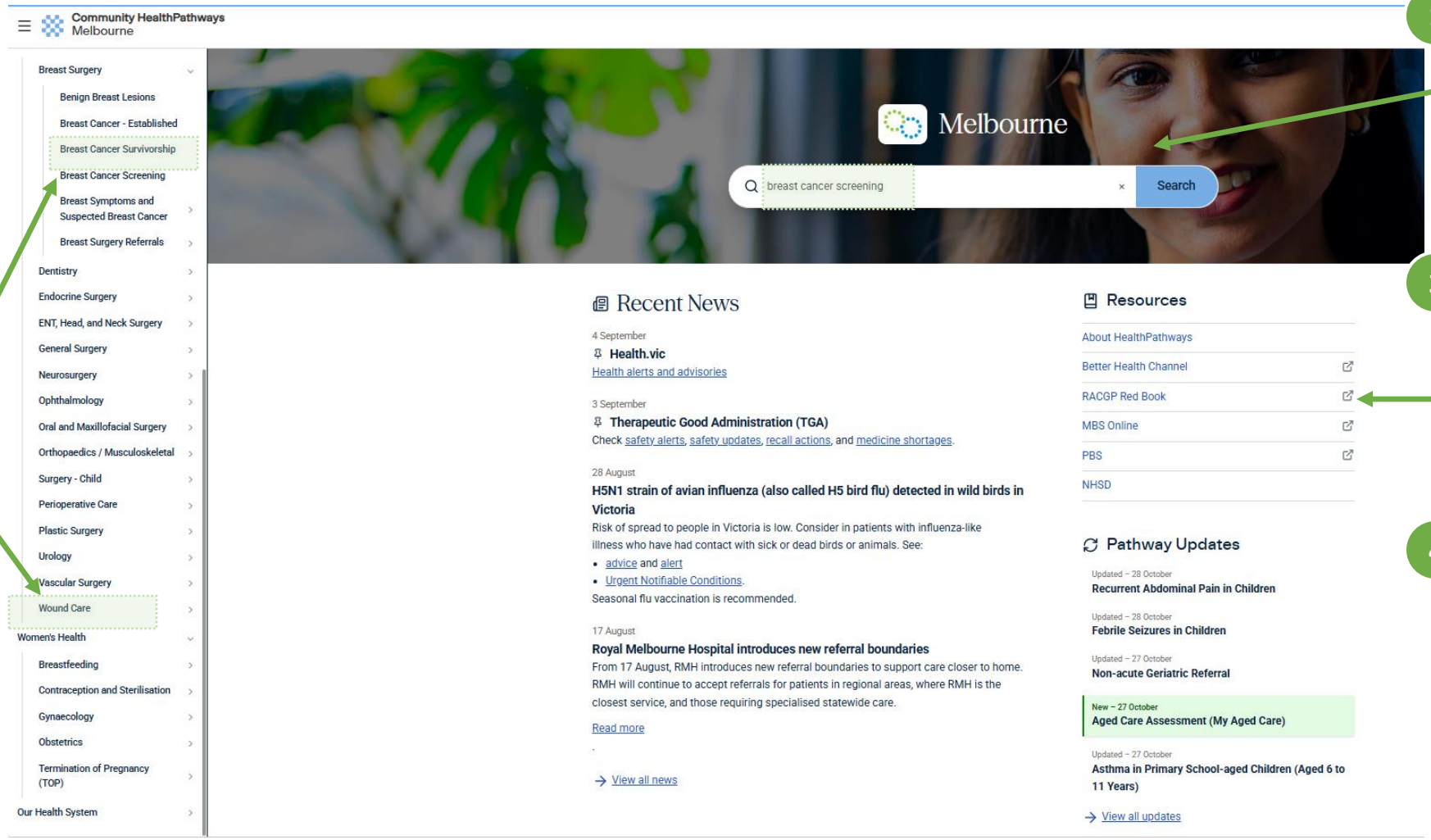
Collaborative Development
(Created by GPs, specialists, allied health and other health professionals)

Easy Access
(Web-based platform, mobile-friendly for point-of-care use)

Streamlined Workflow
(Quick navigation with Assessment, Management and Referral sections all in one place)

Free for Clinicians
(No cost access for all health professionals in North Western and Eastern Melbourne PHN catchments)

HealthPathways Melbourne Homepage



1

Search bar for quickly locating clinical pathways and conditions

2

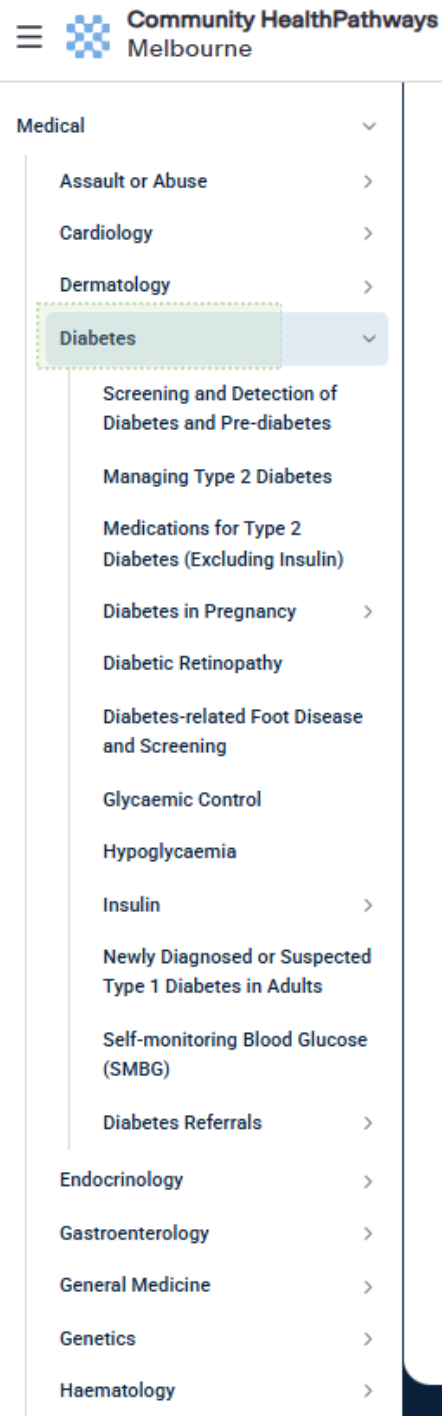
Browse clinical suites via left-hand menu, organised into easy to navigate categories

3

Essential quick-access links for latest updates, Pathway updates, clinical resources and MBS items

4

Click ‘Send Feedback’ to add comments and questions about this pathway.



Relevant and Related Pathways

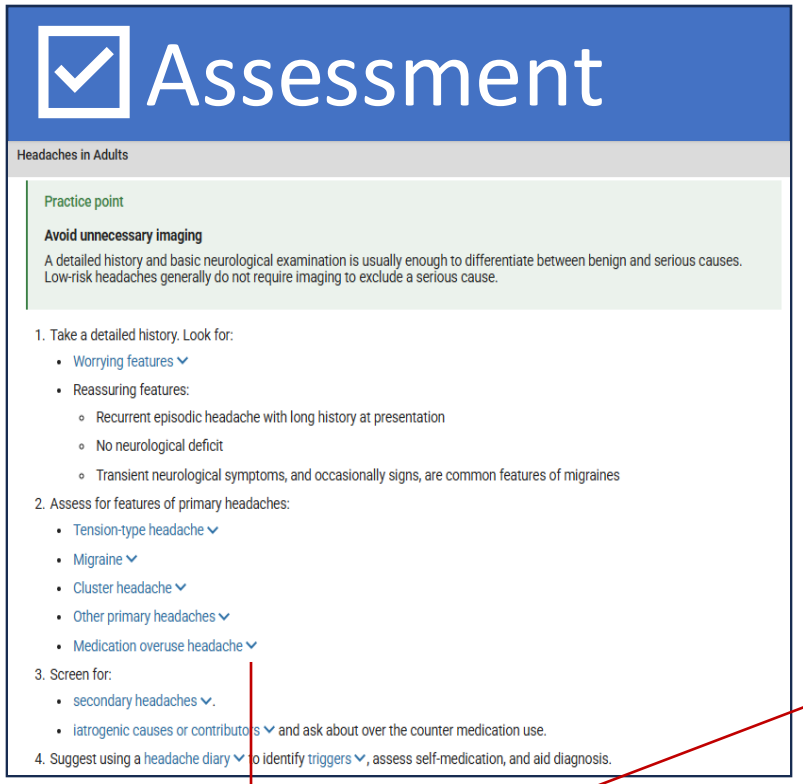
Diabetes

Screening and Detection of Diabetes and Pre-diabetes
Managing Type 2 Diabetes
Medications for Type 2 Diabetes (Excluding Insulin)
Diabetes in Pregnancy
Diabetic Retinopathy
Diabetes-related Foot Disease and Screening
Glycaemic Control
Hypoglycaemia
Insulin
Newly Diagnosed or Suspected Type 1 Diabetes in Adults
Self-monitoring Blood Glucose (SMBG)
Diabetes in Palliative Care
Chronic Kidney Disease (CKD)
Peripheral Neuropathy
Diabetes Referrals

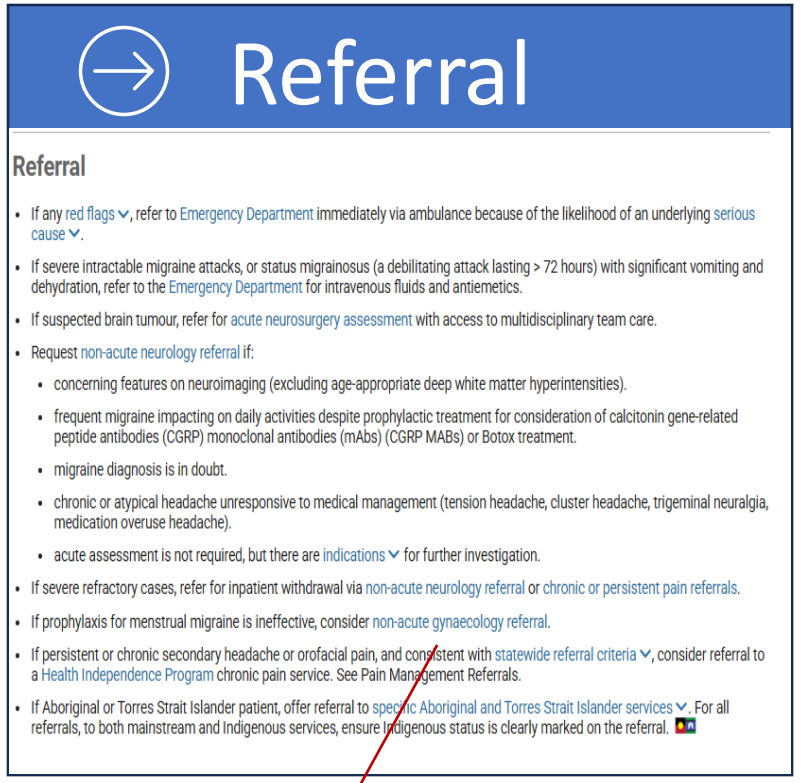
CPD Hours for HealthPathways Use

Streamlined Navigation of HealthPathways for General Practice

All Sections in One Place: Assessment, Management, and Referral sections on a single page, making it easy for GPs to quickly navigate the entire clinical pathway without switching screens.







Click to Expand

Drop-down boxes appear throughout the pathway, click them to view supplementary information.

Click on the Links

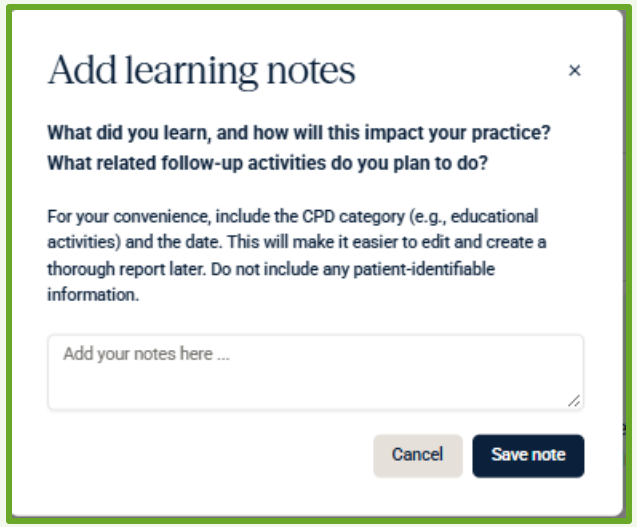
Use the interactive links to open related pathways and resources

Record Your CPD Today: Start with HealthPathways



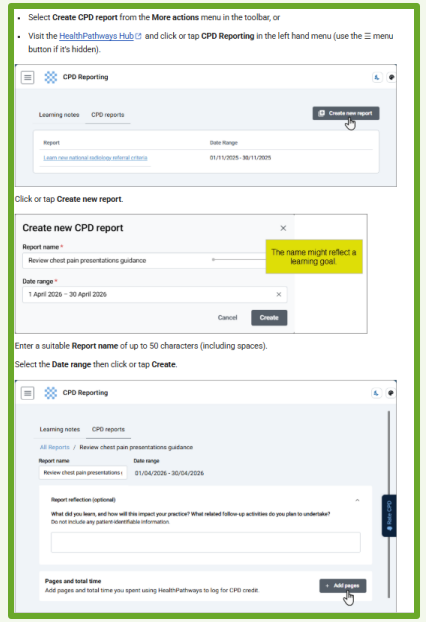
Step 1: Access a Pathway Page

- Navigate to a clinical pathway (e.g., *Psychosis – Established*).
- Click **“Add CPD note”** to begin tracking your CPD activity.



Step 2: Add Learning Notes

- Reflect on what you learned and how it will impact your practice.
- Include any planned follow-up activities.
- These notes are saved to your CPD record.



Step 3: Generate Your CPD Report

- Go to the **CPD Reporting** section.
- Add reflections, review pages, and confirm time spent.
- Export your report as a **PDF for submission**.

For further information on the CPD reporting tool, please see these videos:

- How to create a CPD report
- How to add learning notes

Stay Informed: Access Case Studies and Monthly Bulletin

Case Study


HealthPathways Melbourne

Putting knowledge into practice

CASE STUDY 36:

Patient with peripheral neuropathy

John, 62, presents to his GP with a six-month history of progressive tingling and numbness in both feet.

He describes a "burning sensation" in the soles, particularly at night, which is beginning to disturb his sleep. He also reports increasing unsteadiness when walking, especially in the dark.

He has a past medical history of type 2 diabetes mellitus, hypertension, and dyslipidaemia. His medications include metformin, gliclazide, ramipril, and atorvastatin.

He states he never misses his tablets, although he admits he is not up to date with his diabetes cycle of care.

He is a non-smoker, drinks alcohol occasionally and has no known occupational toxin exposure.

On examination, he appears well. There is reduced light touch and vibration sense in a stocking distribution bilaterally. Ankle reflexes are reduced. There are no upper limb neurological deficits and no focal neurological signs. Foot pulses are present and symmetrical, and there are no ulcers.

The GP diagnoses peripheral neuropathy, most likely diabetic in origin, but also recognises the need to exclude other reversible causes. He checks the HealthPathways Melbourne Peripheral Neuropathy pathway for guidance.

phn EASTERN MELBOURNE

phn NORTH WESTERN MELBOURNE

melbourne.healthpathways.org.au | August 2026

Real clinical scenarios for everyday GP practice

- Concise, practical case studies designed to reflect real presentation in General Practice.
- Includes management summaries, pathway links and local service consideration for quick navigation.
- Access all case studies here.

Monthly Bulletin


HealthPathways Melbourne

Putting knowledge into practice

melbourne.healthpathways.org.au

Want access to HealthPathways Melbourne? Register here for your HealthPathways account for up to date guidance on clinical and referral pathways for a range of conditions.

What you'll find in this edition

HealthPathways Melbourne GP Mental Health Treatment Plan updates
Statewide referral criteria news 1: dermatology
Statewide referral criteria news 2: children's surgery and ophthalmology conditions
Insight: HealthPathways Melbourne and Mercy Health
Case study: Healthy travel preparation
Case study: Assessing suspected melanoma

Monthly updates straight to your inbox

- Be the first to know about pathway updates, service changes , new case studies and employment opportunities

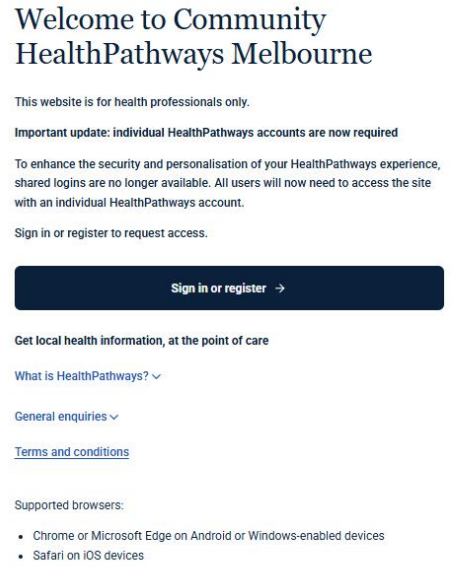
Subscribe to the HealthPathways Melbourne Monthly bulletin or contact us at info@healthpathwaysmelbourne.org.au

Access Now: Sign In or Scan to Register

Please click on the **Sign in or register** button to create your individual account or scan the QR code below.

If you have any questions, please email the team info@healthpathwaysmelbourne.org.au





Diabetes Masterclass for the Primary Care Physician

North-West PHN, 24 November 2026



Dr Dev Kevat, Head of Unit, Endocrinology & Diabetes
Dr Chris Preston, Endocrinologist
Dr Hannah Wallace, Nephrologist
Dr Sylvia Ye, Endocrinologist
Dr Fran D'Elia, Endocrinology Registrar
Ms Deepa Ariarajah, Diabetes Clinical Nurse Consultant
Mr Ashvin Nursing, Diabetes Clinical Nurse Consultant

Acknowledgement of Country

Western Health

Western Health acknowledges the Traditional Custodians of all the lands and waterways on which our staff, volunteers, consumers and caregivers come together.

As we work, learn and grow, we pay our deep respects to the Elders and Traditional Custodians past, present and emerging of the Wurundjeri Woi-Wurrung, Boon Wurrung, Bunurong and Wadawurrung Countries of the greater Kulin Nation.

We are committed to the healing of country, working towards equity in health outcomes, and the ongoing journey of reconciliation.

Western Health is committed to respectfully listening and learning from Aboriginal and Torres Strait Islander people and we are truly guided by the values of relationship, responsibility and respect.



Outline

- **1. Overview of the diabetes landscape in 2026**
- 2. Local burden of disease in Melbourne's west
- 3. Diabetes services at Western Health
- 4. Case presentations highlighting common management considerations
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- 6. Review of current guidelines
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- 8. How and when to refer?
- 9. Q+A session

Diabetes in Australia in 2026

Western Health

- Type 2 diabetes
  - 85-90% of cases; prevalence increasing
- Type 1 diabetes and LADA (Latent Autoimmune Diabetes of Adulthood)
  - 5-10% of cases; prevalence increasing; rapid advances in technology
- MODY – Monogenic Diabetes
  - <1% of cases; shift to gene specific nomenclature (eg *GCK MODY*)
- Gestational Diabetes
  - ADIPS criteria updated 2025: (i) FPG ≥5.3–6.9mmol/L; (ii) one-hour plasma glucose (1hPG)≥10.6 mmol/L; (iii) 2hPG≥9.0–11.0mmol/L.

Diabetes in Australia in 2026

- Diabetes: one in fifteen adults (6.6%)



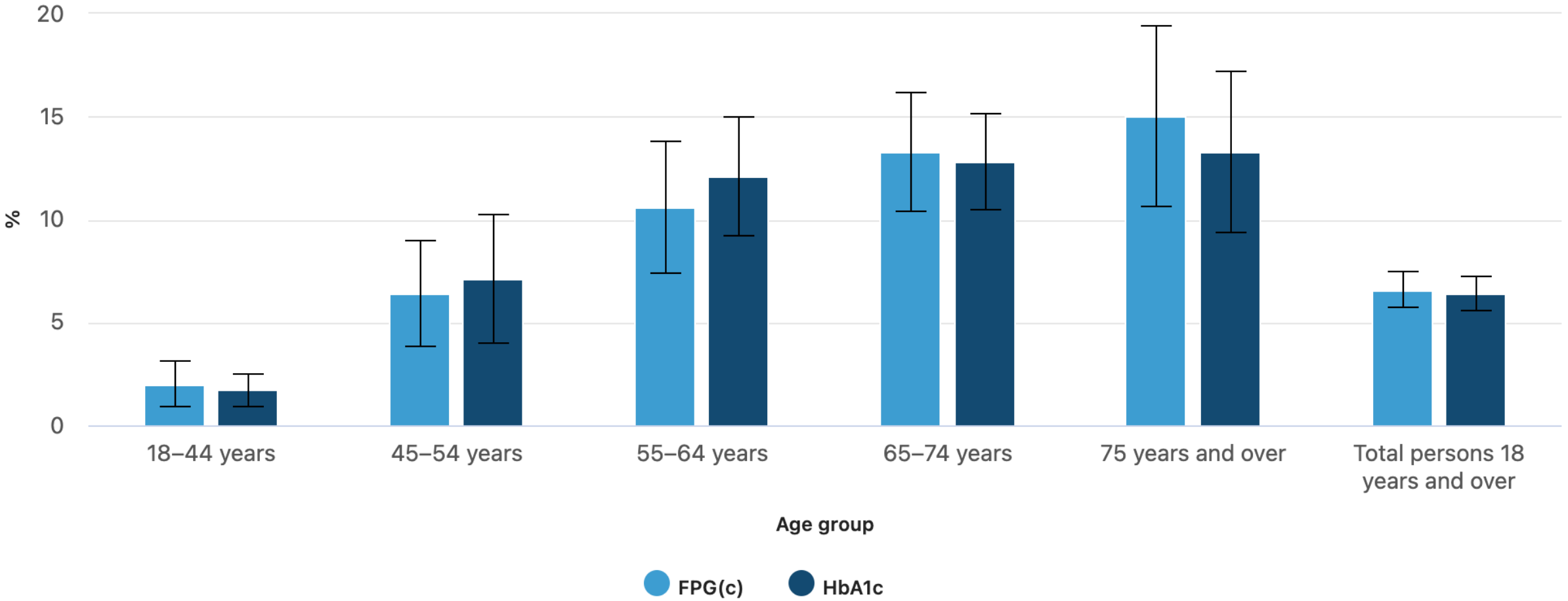
- Indicators of CKD: one in seven (14.2%)



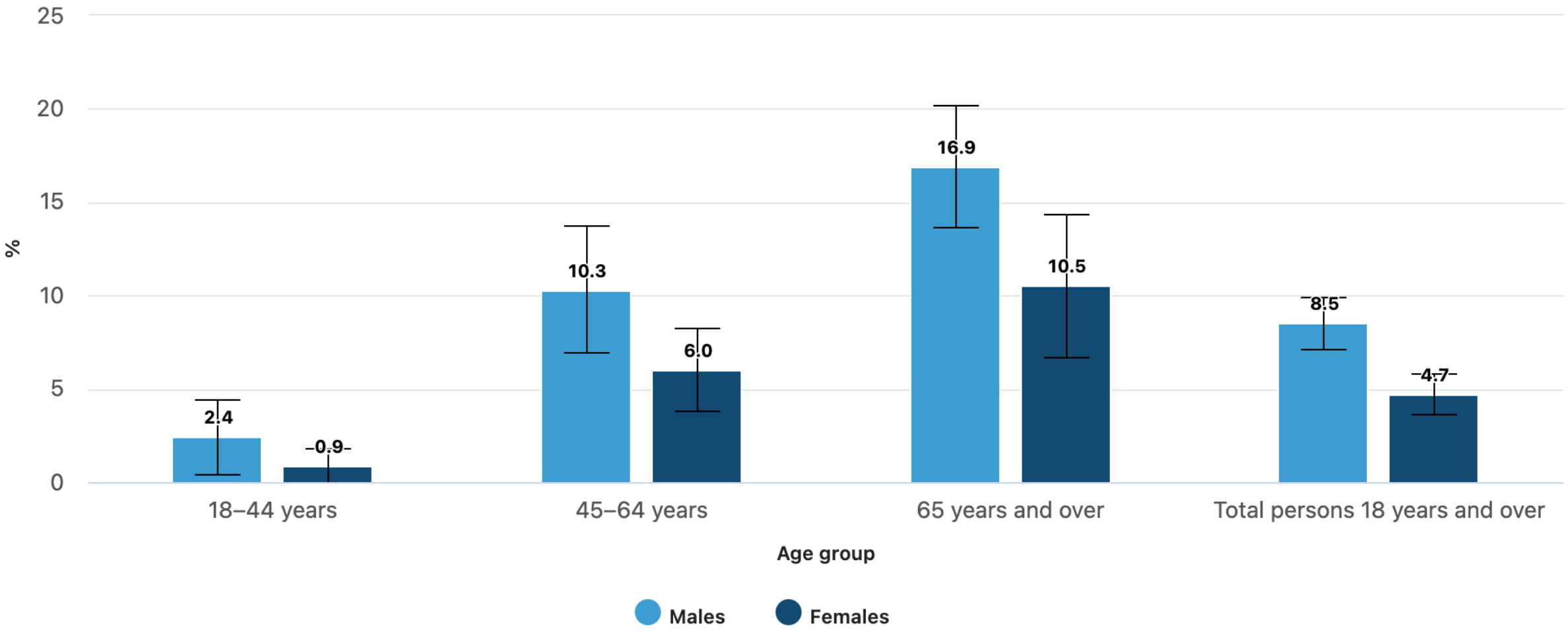
- Hypercholesterolaemia: one in three (30.2%)



Diabetes in Australia in 2026



Diabetes in Australia in 2026



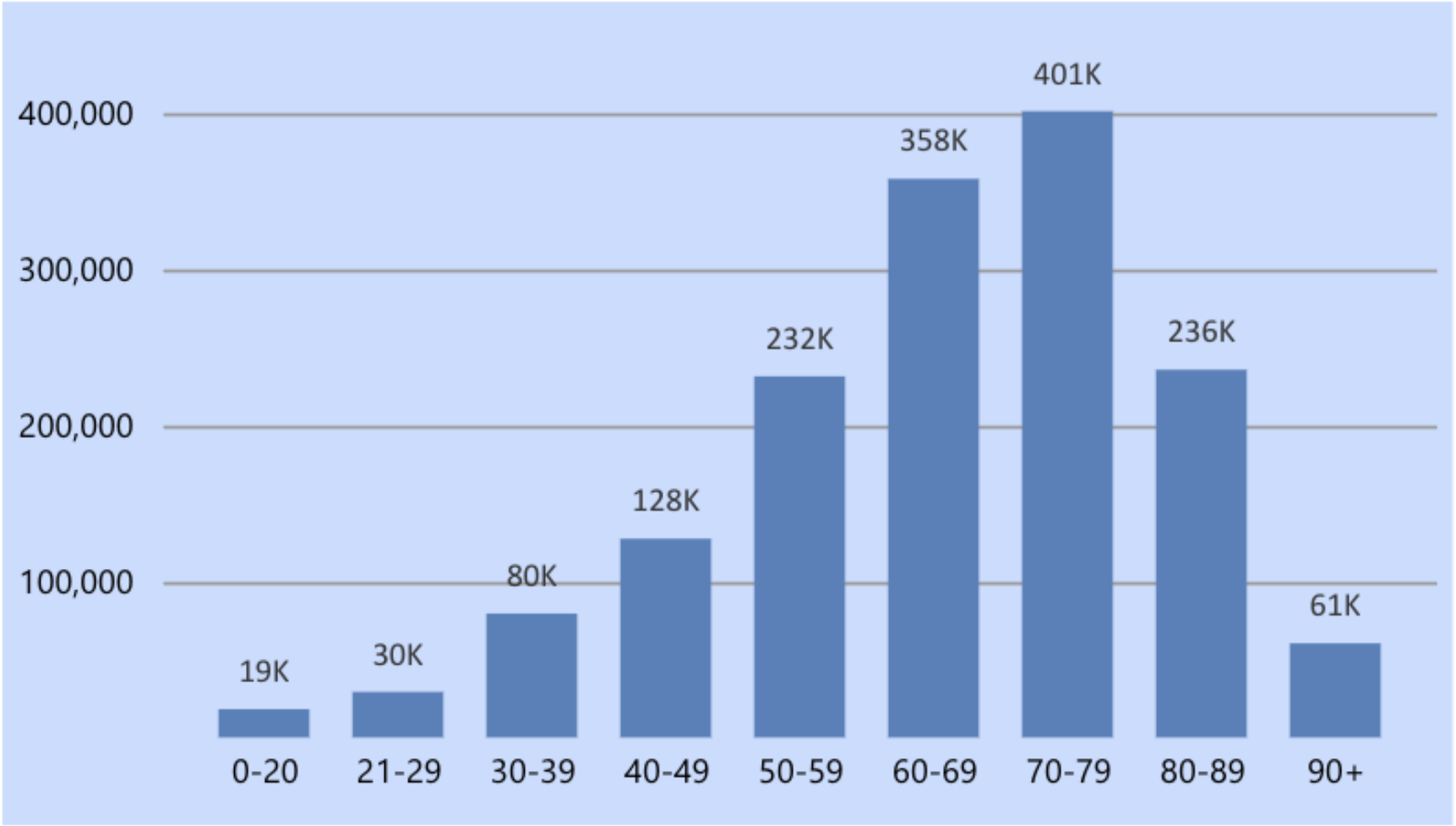
Diabetes in Australia in 2026

Western Health

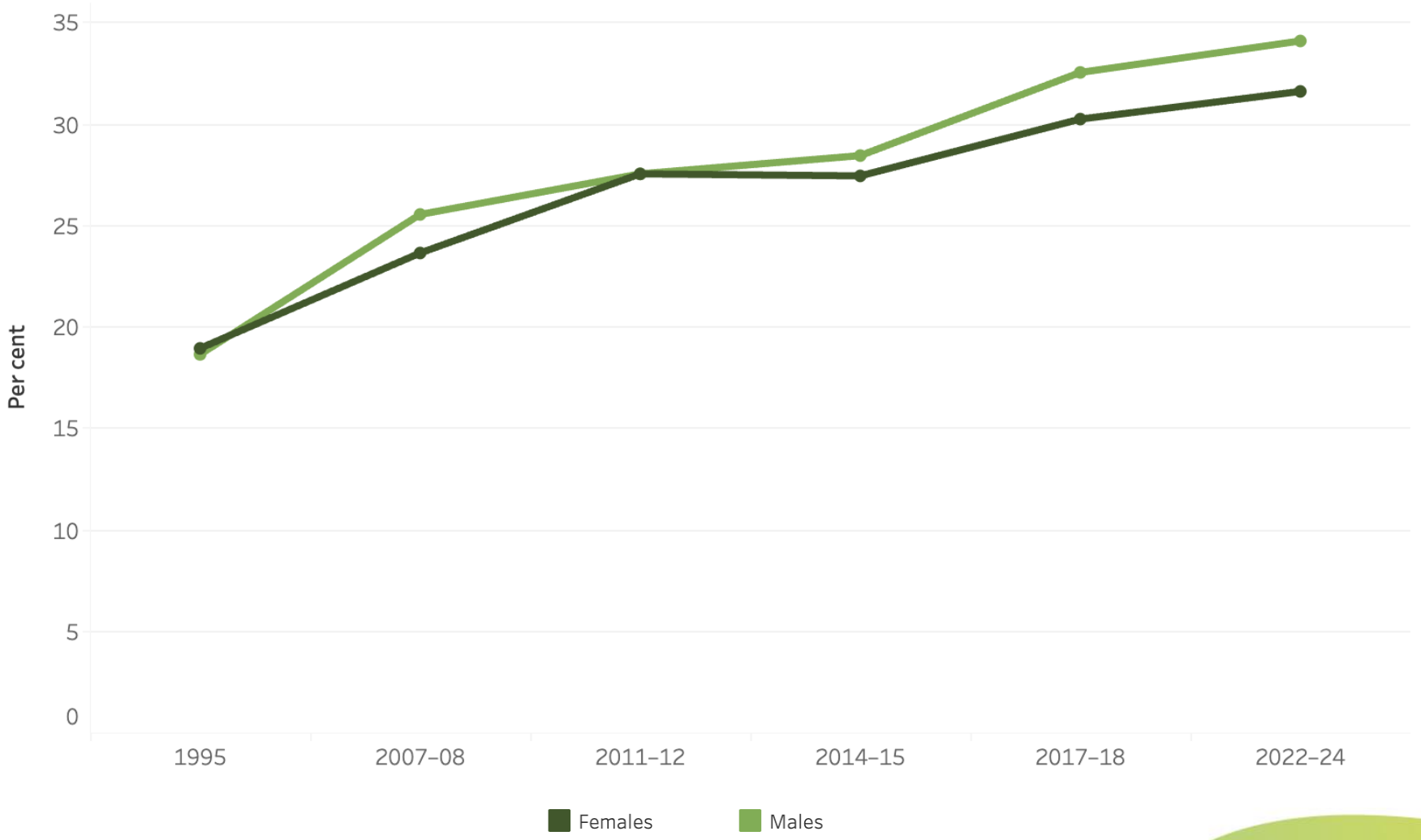
Diabetes Type	Number	%	Registered in Past Year
Type 1 diabetes	148,295	9.6%	4,377
Type 2 diabetes	1,349,866	87.5%	57,465
Gestational diabetes	30,646	2.0%	30,587
Other diabetes	14,408	0.9%	1,334
Total	1,543,215	100.0%	93,763

* An additional 200,748 women who previously had gestational diabetes are registered with the NDSS. These women are at high risk of developing type 2 diabetes and receive regular reminder letters to have a diabetes check.

Diabetes in Australia in 2026



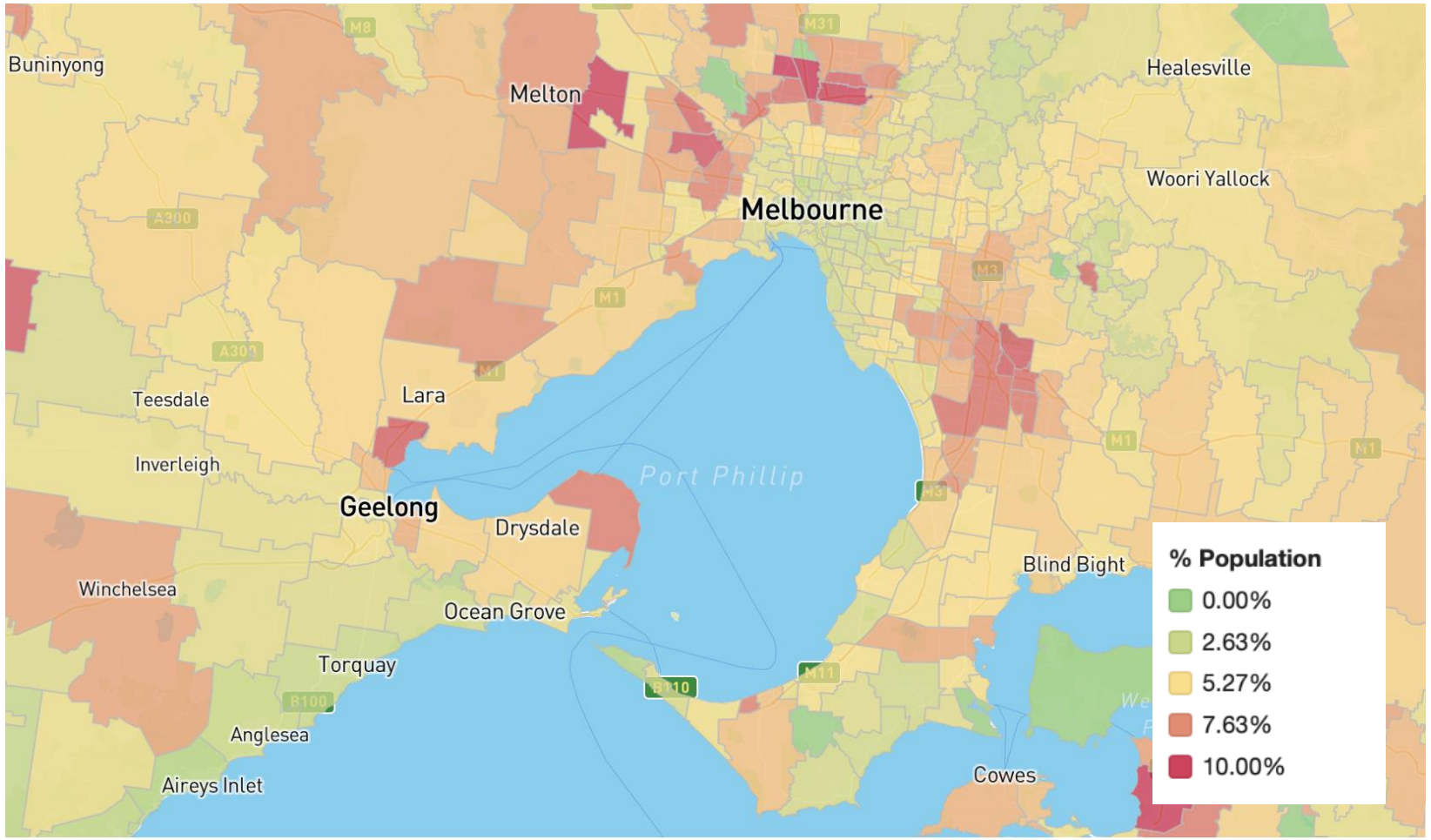
Obesity in Australia



Outline

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Diabetes – Local Burden of Disease



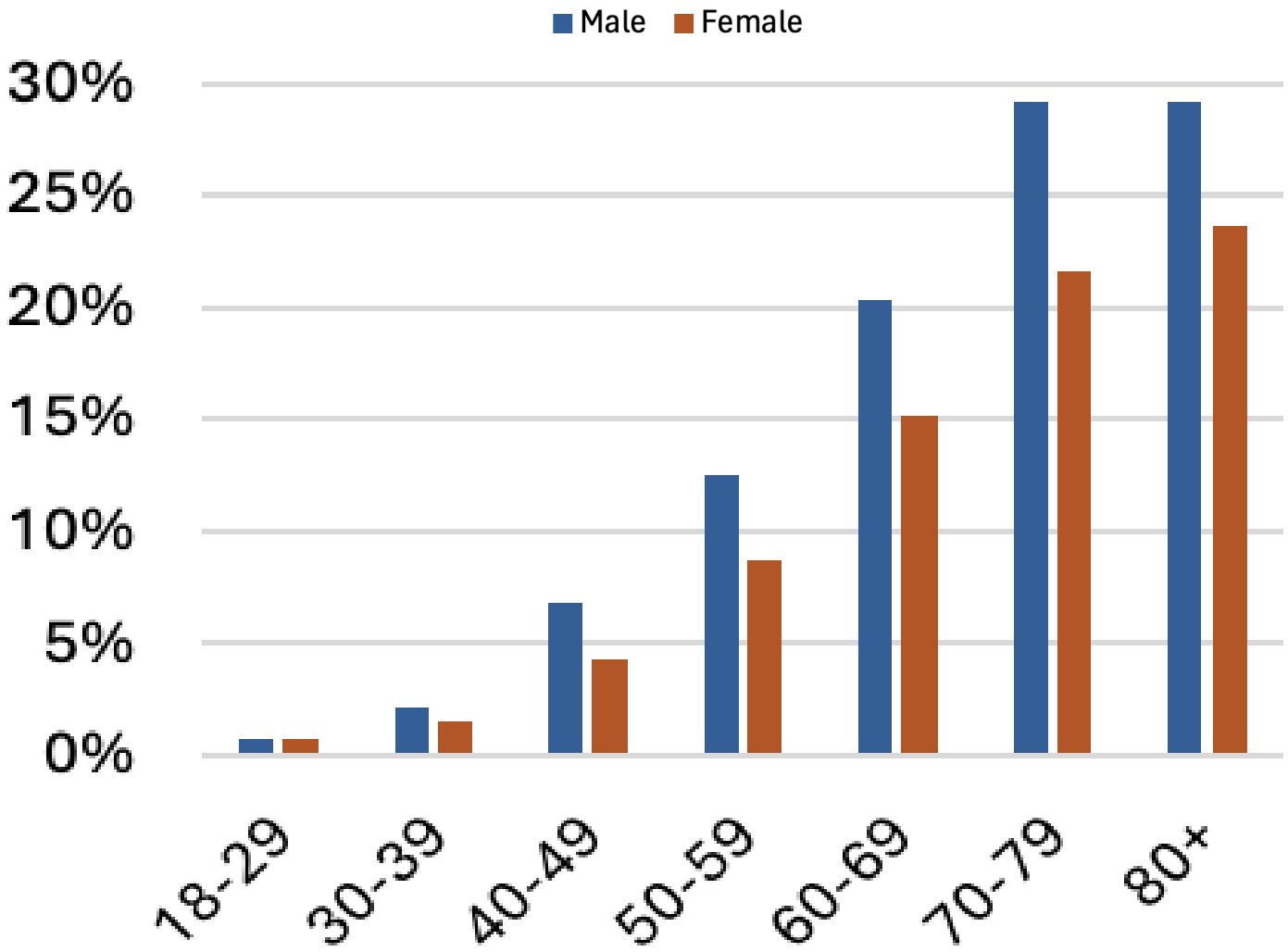
Diabetes – Local Burden of Disease

- Diabetes: one in thirteen adults (7.53%)

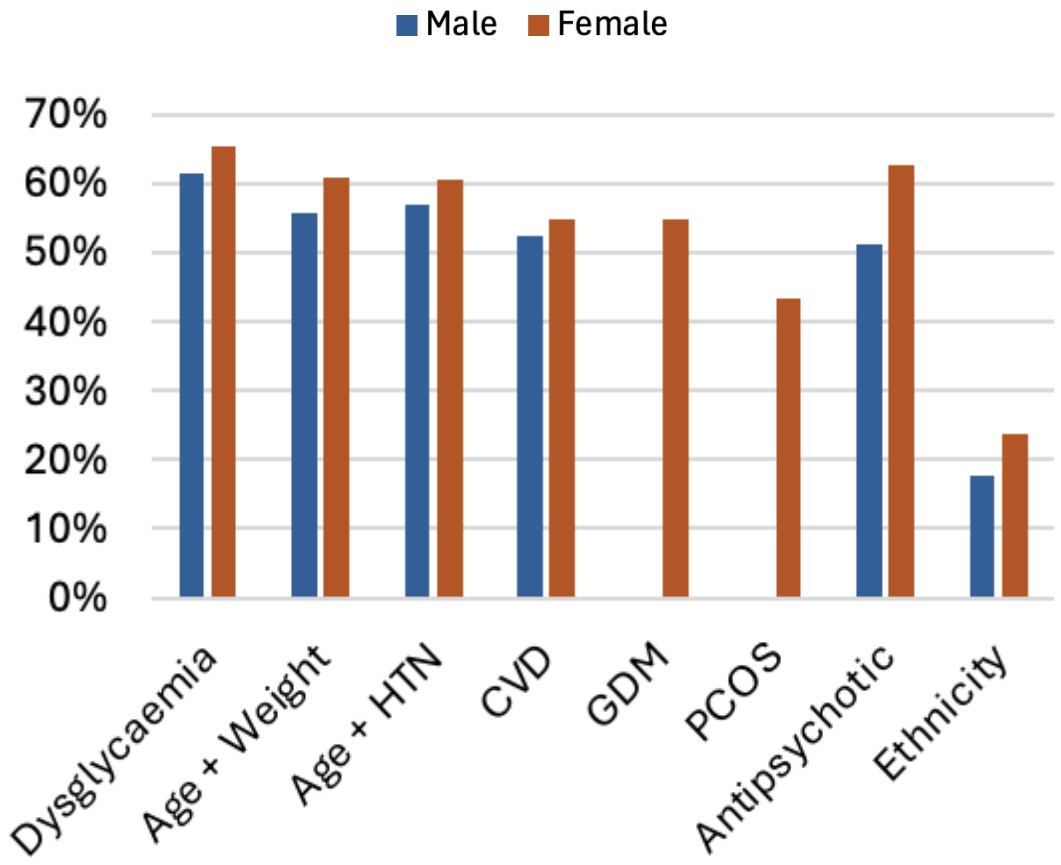


- Future Health Today
  - N = 135,054 patients attending primary care practices in Melbourne's west
  - Mean age 44.7 years ±17.0 years
  - 1 in 10 undiagnosed
- A further 26.18% at high diabetes risk

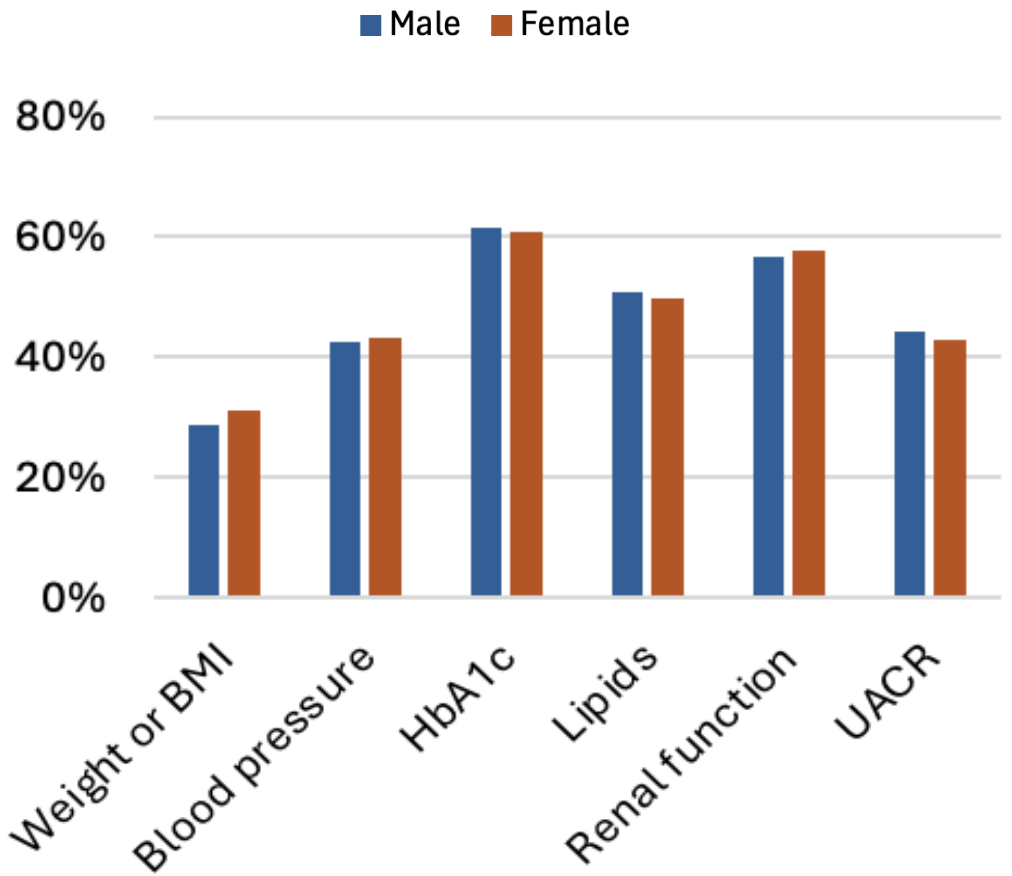
Diabetes – Local Burden of Disease



Diabetes – Local Burden of Disease



Screening rates by risk category

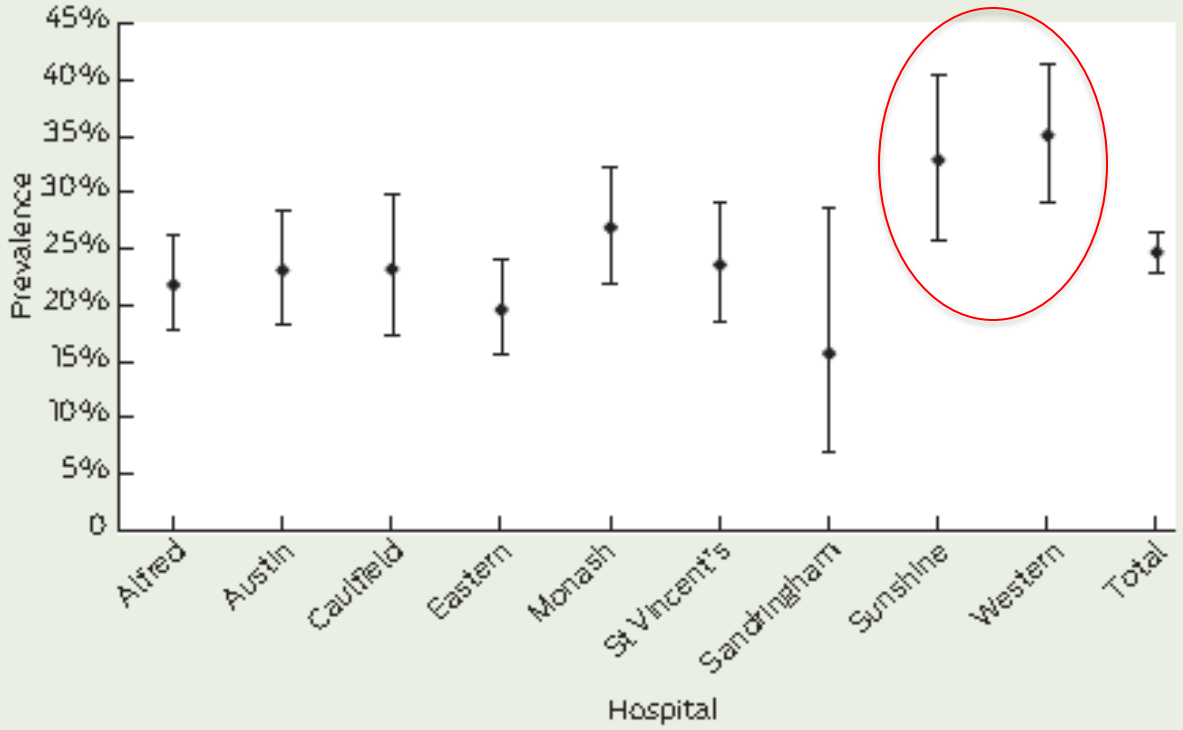


Adherence to diabetes cycle of care

Diabetes – Local Burden of Disease

Western Health

1 Diabetes prevalence (95% CI) in inpatients at Melbourne metropolitan hospitals





A limb lost every 3 hours: can Australia reduce amputations in people with diabetes?

Increased foot problems due to diabetes means a national focus on coordinated foot care is essential

Data from the Australian Institute of Health and Welfare (AIHW) suggest that one Australian loses a lower limb every 3 hours as a direct result of diabetes-related foot disease (DRFD).[1] Further data suggest there has been a 30% increase in diabetes-related amputations in Australia over the past decade, with 8% of diabetes-related deaths being attributable to foot disease.[1,2] These statistics are especially disappointing given the exponential growth in knowledge, research and published guidelines on managing DRFD.[3,4] In order to reduce this significant burden, several complementary measures are therefore urgently required.

To allow for long-term surveillance of DRFD in Australia, it is paramount that data collection is initiated at a national level. The health system does not currently allow for collection of information from both public and private sectors, and ignores the large group of people managed solely in the community. Effective allocation of resources and care coordination are likely to be hindered by this lack of data, as are identification of at-risk patient groups and development and evaluation of preventive strategies. Solutions for improving data collection would include creation of specific Medicare item numbers for DRFD and development of web-based data collection forms and databases.

The inclusion of chronic disease management items in the Medicare Benefits Schedule (MBS) is acknowledged as a step forward in the fight against DRFD. Reports suggest that 1.3 million consultations were provided by podiatrists under this program in 2004–2008, accounting for 34% of all consultations.[5] It is important to note, however, that this funding arrangement does not allow for more frequent follow-up for individuals with acute DRFD complications or needing intensive secondary prevention due to previous ulceration and/or amputation. Recurrence rates for foot ulceration range from 20%–80% annually, with many of these ulcers leading to amputation.[6] Improved access to publicly funded specialised foot care services, and increasing the number of rebates available under the MBS, are seen as cost-effective necessities for people with current or past foot complications. The cost of this would be recouped by preventing future hospitalisations and amputations.

Improved access to appropriately skilled health care providers and multidisciplinary teams is required, and could be achieved if Australian health care policymakers adopt a standardised national model of care for DRFD. This model must sustain a continuum of care between community-based health care and local hospitals. Research supports the resourcing and implementation of well defined treatment pathways provided under a multidisciplinary model of care.[7,8] A standardised national service model would also support a national network of interdisciplinary DRFD clinics, in turn facilitating the development of a national database to assist with referral pathways, data collection, initiation of quality improvement programs and benchmarking across organisations. Such a model would also allow for accreditation of specialist clinics and staff, which is necessary to ensure adequate and appropriate services.

Recommendations to improve national diabetes-related foot disease (DRFD) care

- National data collection on incidence and outcomes of DRFD.
- Improved access to care, through the Medicare Benefits Schedule, for people with diabetes who have a current or past foot complication.
- Standardised national model for interdisciplinary DRFD care.
- National accreditation of interdisciplinary foot clinics and staff.
- Subsidies for evidence-based treatments for DRFD, including medical-grade footwear and pressure off-loading devices.
- Holistic diabetes care initiatives to "close the gap" on inequities in health outcomes for Aboriginal and Torres Strait Islander peoples. ◆

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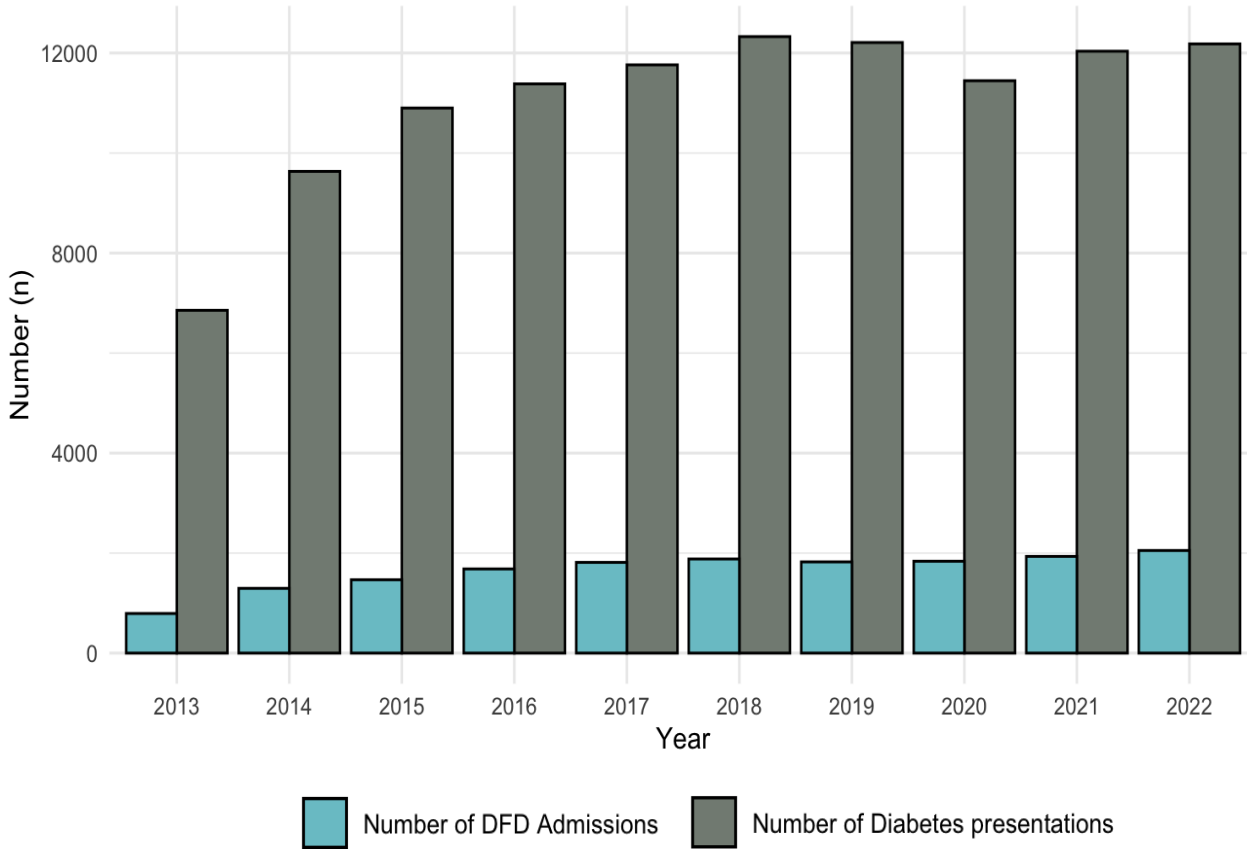
doi: 10.5694/mja10.10837

1) Bach LA, Ekinci EI, Engler D, Gilfillan C, Hamblin PS, MacIsaac RJ et al (2014) The high burden of inpatient diabetes mellitus: the Melbourne Public Hospitals Diabetes Inpatient Audit. MJA 201 (6): 334-338.

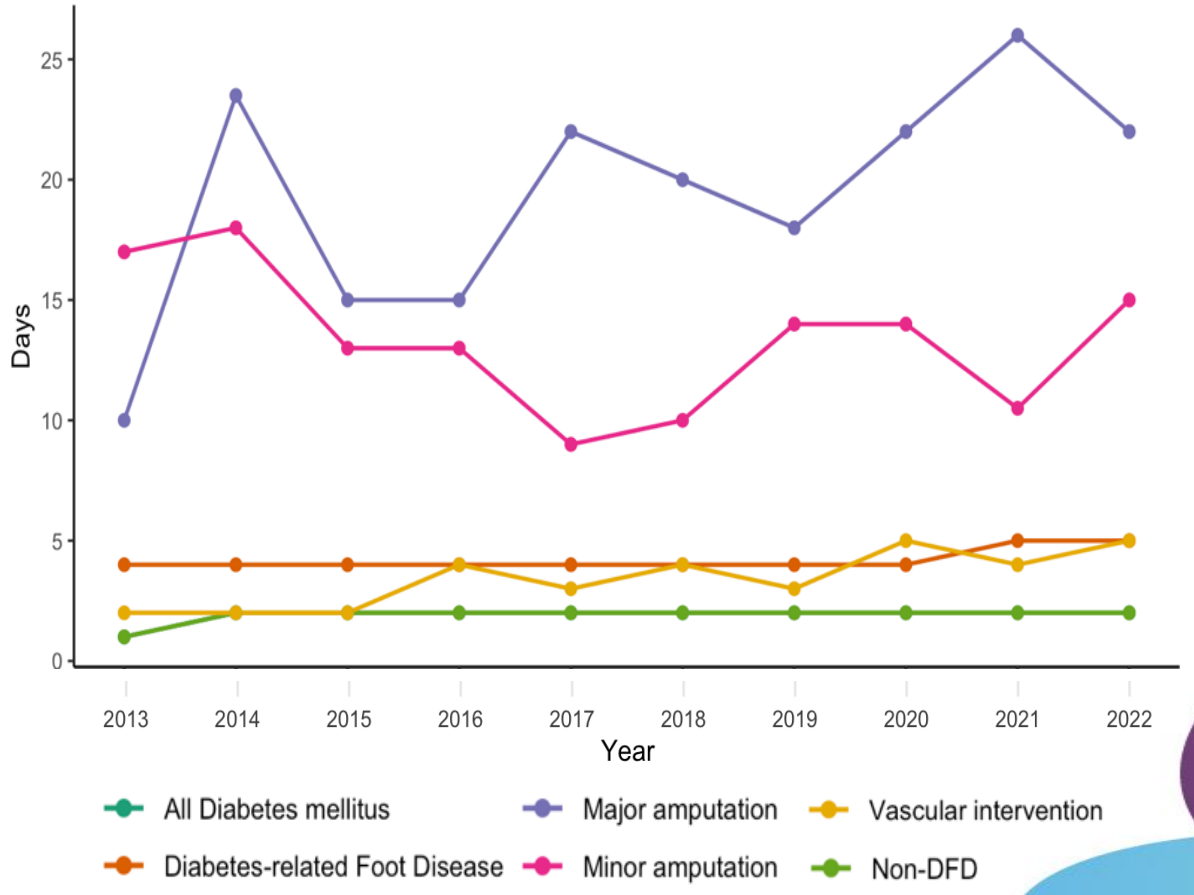
Diabetes – Local Burden of Disease

Western Health

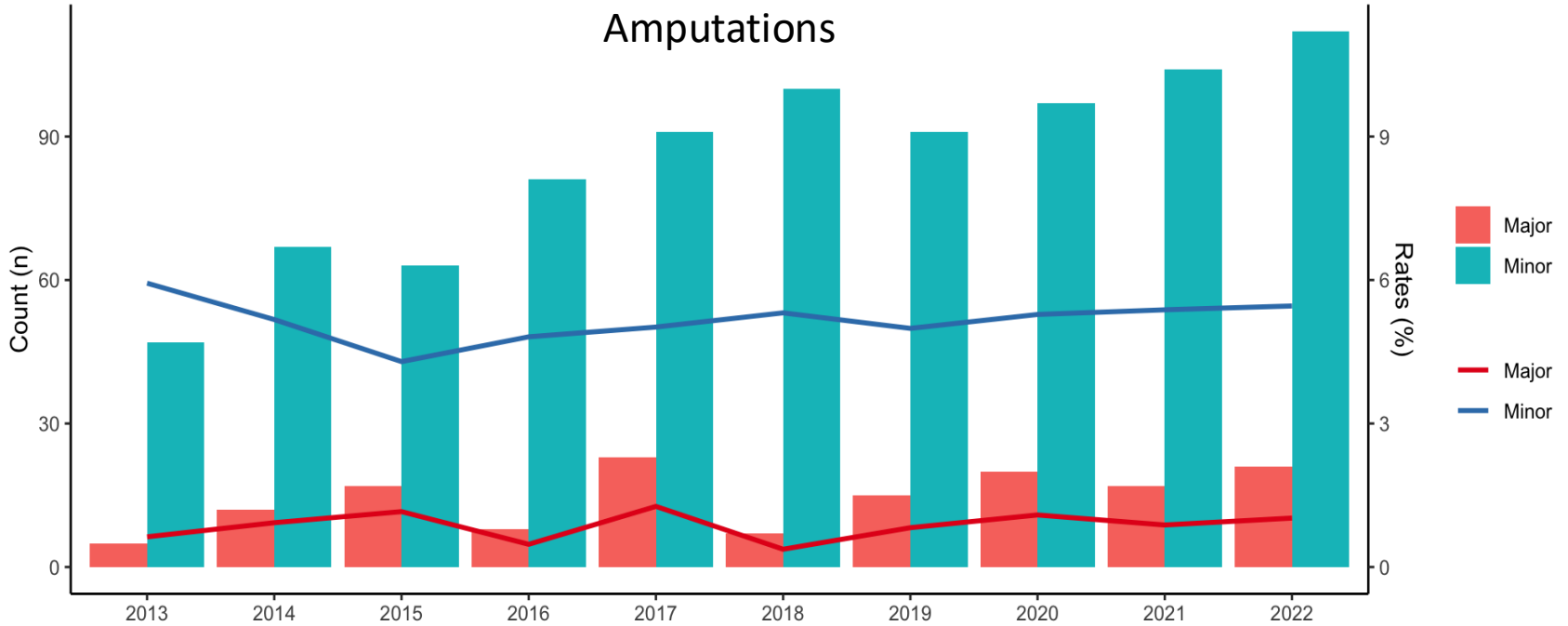
DM and DFD Presentations



Median Length of Stay (excluding HITH)

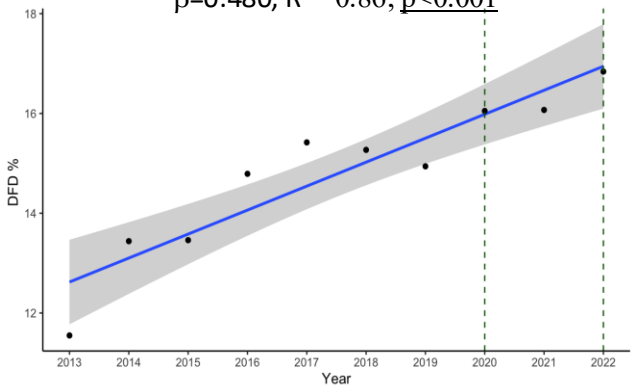


Diabetes – Local Burden of Disease



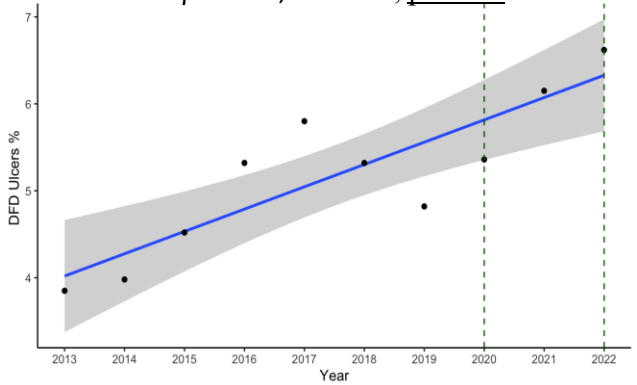
A: Rate of admissions with DFD

β=0.480, R^2= 0.86, p<0.001



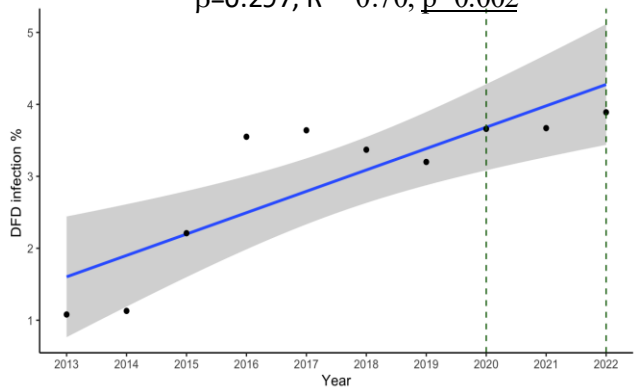
B: Rate of diabetic foot ulcers

β=0.256, R^2 =0.75, p=0.001



C: Rate of diabetic foot infections

β=0.297, R^2 =0.70, p=0.002



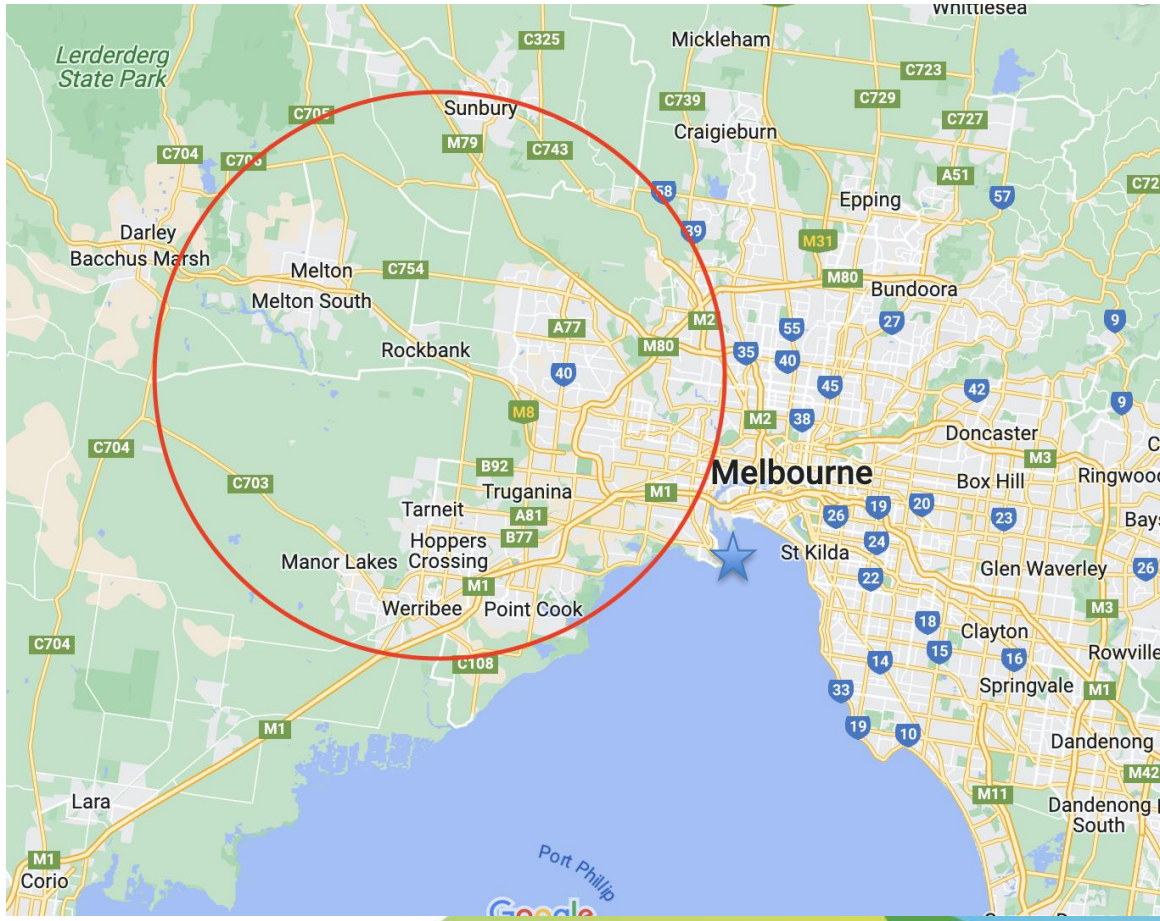
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Diabetes Services at Western Health

Western Health - Victoria

- Large catchment servicing Melbourne's West
- Population >900,000
- 270,000 > 50 years old at the 2022 Census
- Socioeconomically demanding, culturally diverse



Diabetes Services

- Endocrinology & Diabetes
- Diabetes Education
- Diabetes Foot Service: Vascular, Podiatry, ID
- Obstetric Endocrinology

Diabetes Services at Western Health

Diabetes Clinics

• Urgent Access Diabetes	Wednesday PM	Sunshine
• Rapid Access Diabetes	Wednesday AM & Friday AM	Sunshine
• SDIAB Diabetes	Wednesday PM	Sunshine
• Type 1 Diabetes	Wednesday AM	Footscray
• Type 1 Pump	Wednesday PM	Sunshine
• HARP Diabetes	Wednesday PM	Sunshine
• Neph Endo Combined Clinic	Monday PM	Sunshine
• Young Adult Diabetes Service (JK)	Thursday evenings (monthly)	Joan Kirner
• Young Adult Diabetes Service (NFH)	Tuesday PM (fortnightly)	Footscray

Diabetes Services at Western Health

Pregnancy Diabetes Clinics

• Pre-Pregnancy Planning Clinic	Wednesday PM (fortnightly)	Telehealth
• Obstetric Endocrinology	Monday - Thursday	Joan Kirner
• Diamond Clinic	Thursday AM	Joan Kirner

Melton Clinics

• Endocrinology & Diabetes	Monday and Thursday AM and PM	Melton

Speciality Clinics

• Diabetes Technology	Wednesday AM	Telehealth
• Diabetes Foot Service	Thursday AM and PM	Footscray

Diabetes Services at Western Health

Diabetes Education

- Learning to use devices, understanding the condition and the importance of testing
- Managing Type 1 diabetes, Type 2 diabetes, pre-diabetes
- Insulin titration

Pump Clinics

- Insulin pump assessment, initiation and review

Gestational Diabetes Clinics

- Group gestational diabetes education and insulin initiation
- Individual gestational diabetes insulin initiation

Diabetes Services at Western Health - DFU

- New inpatient unit at Western Health in 2025 dedicated to the management of patients with Diabetes-related Foot Disease



Diabetes Services at Western Health - DFU

- Multi-disciplinary outpatient service
- Twice weekly multi-disciplinary inpatient ward rounds
- Integration of the acute, subacute and community services in an inter-professional care model; designed to facilitate shared care approach to patients and to increase the health system's capacity to manage this complex patient cohort







NADC Centre of Excellence

Western Health

nadc National Association of Diabetes Centres 30 1994-2024

Promoting Excellence in Diabetes Care

This certificate acknowledges that the

Western Health

Diabetes Foot Service

has successfully met the NADC Collaborative Interdisciplinary Diabetes High Risk Foot Service **Centre of Excellence** Accreditation Standards and is recognised as a:

NADC Centre of Excellence High Risk Foot Service

Until January 2029

Natalie Wischer OAM
Chief Executive Officer – NADC

Professor Stephen Twigg
Honorary Chair Foot Network - NADC

ads Australian Diabetes Society NADC is a division of ADS ABN 13 053 787 965

E admin@nadc.net.au W www.nadc.net.au



nadc National Association of Diabetes Centres

Outline

- 1. Overview of the diabetes landscape in 2026
- 2. Local burden of disease in Melbourne's west
- 3. Diabetes services at Western Health
- **4. Case presentations highlighting common management considerations**
- 5. Management decisions in diabetes
- 6. Review of current guidelines
- 7. Emerging therapies
- 8. How and when to refer?
- 9. Q+A session

Case 1: Ms LM

- 32F p/w **polyuria**, **polydipsia** and **weight loss**

- Past History
  - G1P1 – GDM in pregnancy
  - Overweight
  - Hypothyroid

- Medications
  - COCP
  - Multivitamin
  - Thyroxine

- Social History
  - Lives with partner and son
  - High school teacher
  - Non-smoker, minimal EtOH

- Family History
  - Mother: Rheumatoid arthritis
  - Father: T2DM, CKD
  - Sister: Asthma, eczema

Case 1: Ms LM

- 32F p/w **polyuria**, **polydipsia** and **weight loss**

- Examination
  - Well-appearing, 72kg, BMI 26.4
  - BP 125/85, BGL 14.0
  - No signs of insulin resistance

- Considerations
  - Initial next steps?
  - Ketones?
  - Diabetes type?

- Differential diagnosis
  - Thyroxine over-replacement?
  - Type 2 diabetes?
  - Type 1 diabetes?

- Next steps
  - Initial management
  - Baseline pathology
  - Tests to confirm diabetes type

Case 2: Mr OB

- 48M p/w **hypoglycaemia** and **weight gain**

- Past History
  - T2DM dx age 42
  - Hypertension
  - Dyslipidaemia

- Medications
  - Gliclazide IR 80mg BD
  - Perindopril 10mg
  - Atorvastatin 40mg

- Social History
  - Lives alone
  - Works in finance
  - Ex-smoker, social EtOH

- Examination
  - Overweight 96kg, BMI 28.4
  - BP 145/90, BGL 5.1
  - Mild acanthosis nigricans

Case 2: Mr OB

- 48M p/w **hypoglycaemia** and **weight gain**

- HOPC
  - Symptomatic with **lightheadedness** and **confusion** mid mornings and overnight
  - Not routinely checking BGLs, down to mid 3s when does occasionally check
  - Self-treating with high caloric intake, gained 10kg in 8 months

- Further History
  - T2DM diagnosed on routine GP screening due to age and overweight
  - Initially reluctant to commence medications, age 46 commenced Metformin IR
  - Immediate GI intolerance > switched to Gliclazide IR

Case 2: Mr OB

- 48M p/w **hypoglycaemia** and **weight gain**

- Initial Pathology
  - Glucose 4.2 (<6.0)
  - HbA1c 7.2% (<6.0%)
  - Cr 86 (40-90)
  - eGFR 84 (>60)

  - TSH 3.50 (0.50-4.00)
  - UACR 8.2 (<3.0)
  - TC 4.8 (3.5-5.5)
  - LDL 2.0 (<3.5)

- Considerations
  - Cease or reduce Gliclazide?
  - Can Metformin be re-trialled?
  - Instant vs Modified Release?
  - Cardiovascular risk optimisation?

Case 3: Mr AN

- 62M new to clinic p/w **lethargy** and **polyuria**

- Past History
  - T2DM dx age 48
  - Hypertension
  - Dyslipidaemia
- Medications
  - Metformin XR 2g + Linagliptin 5mg
  - Irbesartan 300mg
  - Atorvastatin 80mg + Ezetimibe 10mg
- Social History
  - Lives with wife
  - Retired factory worker
  - Ex-smoker, moderate EtOH
- Examination
  - Centrally obese, 88kg, BMI 32
  - BP 135/85
  - Diminished pedal pulses

Case 3: Mr AN

- 62M new to clinic p/w **lethargy** and **polyuria**

- HOPC
  - Increasing **lethargy** for several months, excessive **daytime somnolence**
  - Gradual **weight gain** for many years prior to this
  - More recently noticed recurrence of **polyuria**, occasional **blurred vision**

- Further History
  - Previous history of recurrent UTIs, thrush when trialled SGLT2 inhibitor
  - Sedentary lifestyle and poor diet with frequent snacking
  - Excellent adherence with medications, father died age 58 of AMI

Case 3: Mr AN

- 62M new to clinic p/w **lethargy** and **polyuria**

- Initial Pathology
  - Hb 140 (115-160)
  - HbA1c 8.8% (<6.0%)
  - Cr 74 (40-90)
  - eGFR 90 (>60)

  - TSH 2.80 (0.50-4.00)
  - UACR 3.2 (<3.0)
  - TC 6.4 (3.5-5.5)
  - LDL 3.2 (<3.5)

- Considerations
  - Management of hyperglycaemia?
  - Investigations for daytime somnolence?
  - Weight management?
  - Investigations for PVD?
  - Cardiovascular risk optimisation?

Outline

- 1. Overview of normal bone metabolism and common metabolic bone disorders
- 2. Local burden of disease - minimal trauma fractures
- 3. Metabolic bone services at Western Health
- 4. Case presentations highlighting common management considerations
- **5. Management decisions in diabetes**
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Management Decisions in Diabetes

Western Health

- Classification of diabetes type
- Who requires treatment with glucose-lowering medications?
- When to start treatment?
- How and how often to monitor blood glucose levels?
- Choice of first-line medication? Single agent or combination?
- Who requires insulin at diagnosis (i.e. clinical suspicion of Type 1)?
- When to escalate (or de-escalate) treatment?
- Annual cycle of care – frequency of monitoring and targets?
- Additional considerations – eg cardiovascular and metabolic risk optimisation

Determining the best treatment: What the Patient thinks

- Cost of GP and specialist appointments, investigations and medications
- Safety
- Side effects – common vs rare but severe
- Route of administration (needle phobia)
- Burden of monitoring
    - Frequency of BGL monitoring
    - Alarm fatigue with CGM
- Burden of living with diabetes
    - Avoidance of emergencies
    - Diabetes distress and burnout

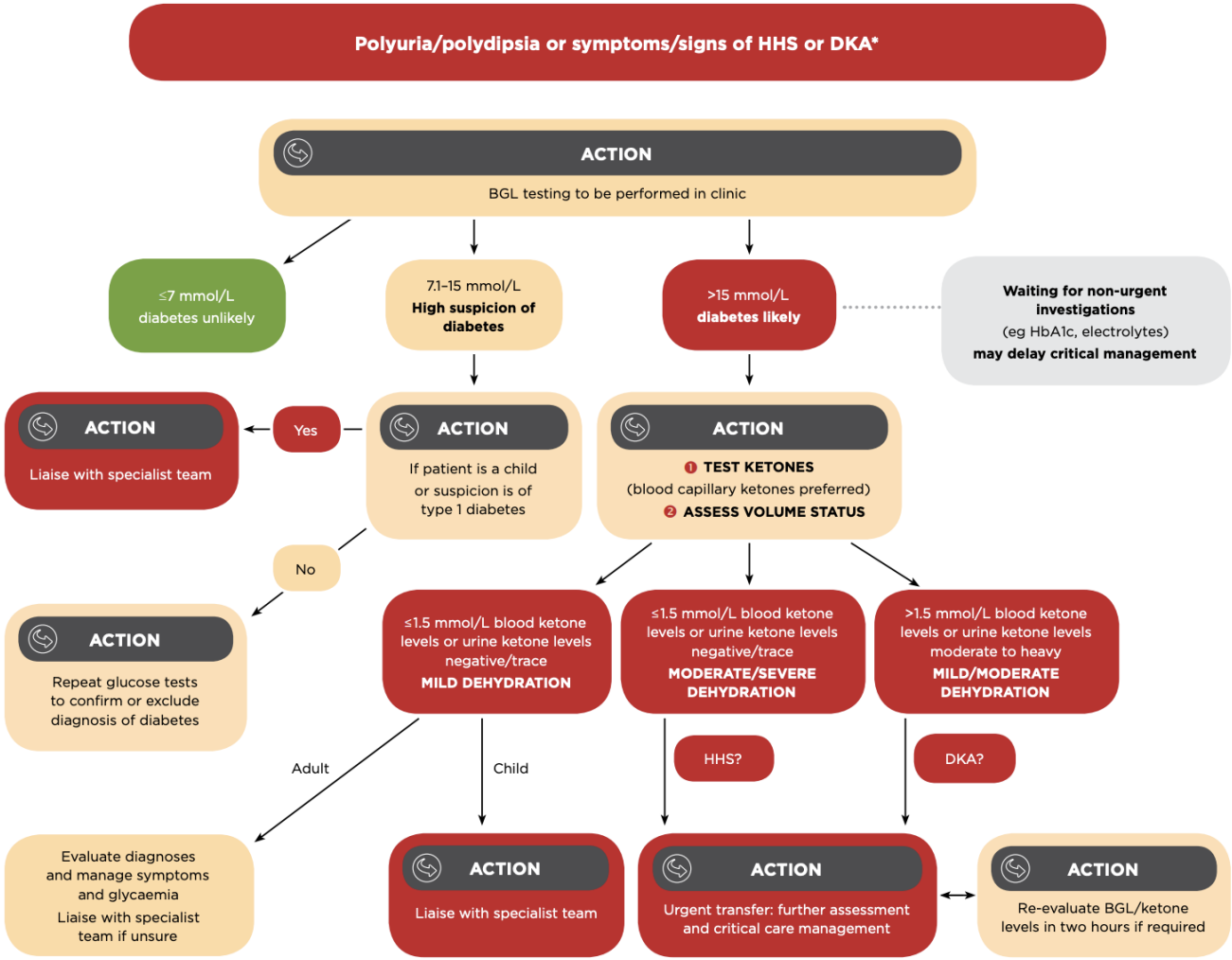
Determining the best treatment: What the Dr thinks

- Type of diabetes
- Comorbidities and renal function
- Cardiovascular risk profile of patient
- Contraindications to any particular treatment option
- Patient preference
- Expected glycaemic improvement eg with oral vs injectable agents
- PBS eligibility vs patient capacity to privately fund
- Cardiometabolic benefits of treatment options
- Safety and driving considerations

Outline

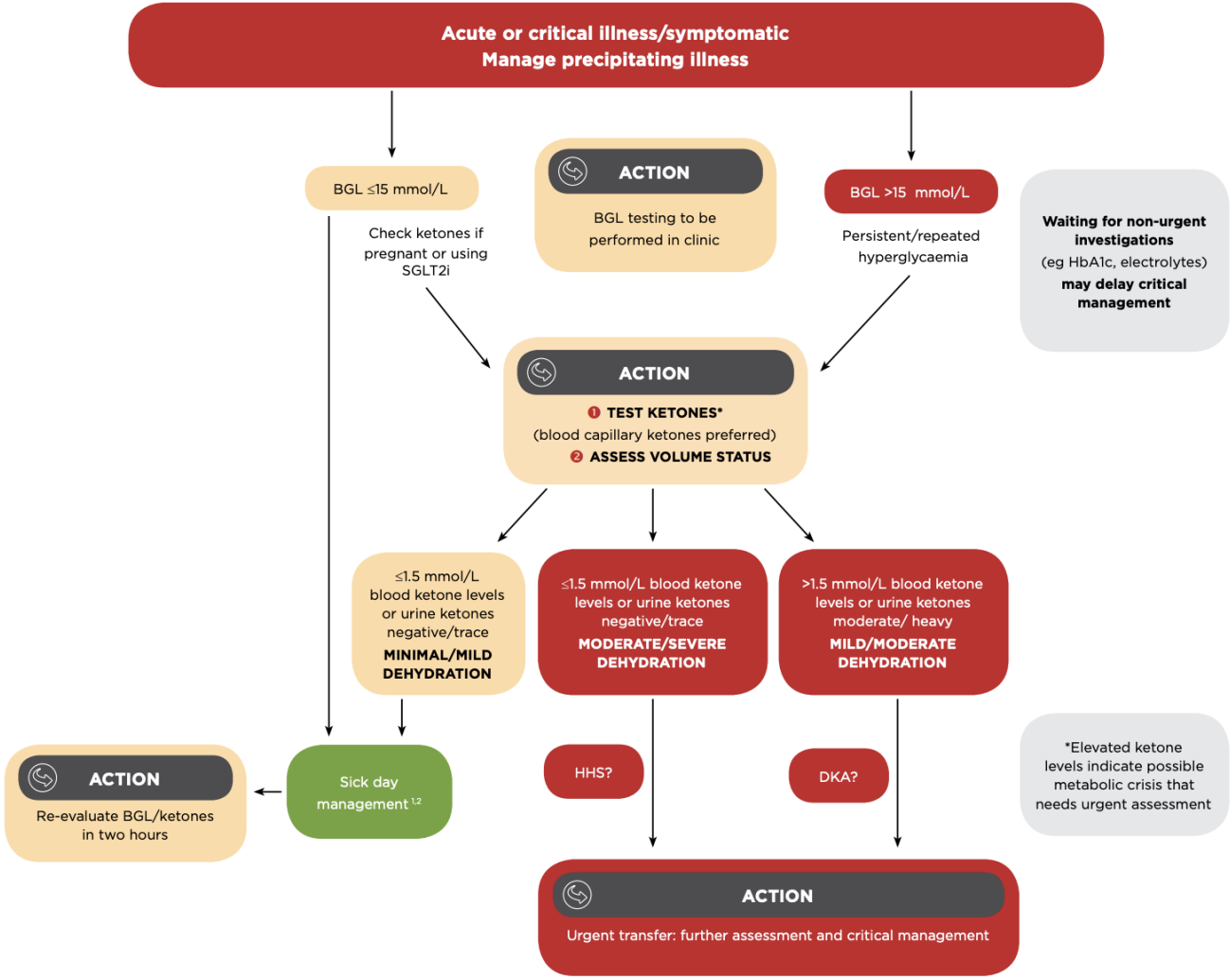
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Current Guidelines – Hyperglycaemia



RACGP Emergency management of hyperglycaemia in primary care – People not known to have diabetes

Current Guidelines – Hyperglycaemia



RACGP Emergency management of hyperglycaemia in primary care – People known to have diabetes

Current Guidelines – Type 1 Diabetes

Western Health

Consider Type 1 diabetes if there is the presence of:

- Ketosis/ketonuria (which may be absent)
- Polyuria, polydipsia
- Acute weight loss (>5% in less than four weeks)
- Age <50 years
- Personal and family history of autoimmune disease
- Acute onset of symptoms

If suspicious of Type 1 diabetes:

- Management of hyperglycaemia should not be delayed
- Consider testing for plasma C-peptide level
- Consider confirmatory tests for GAD and/or IA2 antibodies

Current Guidelines – Type 2 Diabetes

Western Health

Box 1. The diabetes cycle of care[3]

At least six-monthly:

- Measure weight, height, weight circumference and body mass index
- Measure blood pressure
- Assess diabetes management by measuring HbA1c (funded by the Medicare Benefit Schedule for up to four measurements per year)
- Assess feet for complications

At least annually:

- Review and discuss diet, physical activity, smoking status, medications (the need for more frequent review should be individualised, as outlined in Table 1)
- Sick-day management and, when indicated, glucose monitoring
- Review and discuss complication prevention – eyes, feet, kidneys, cardiovascular disease
- Measure total cholesterol, triglycerides and high-density lipoprotein cholesterol (interval may be less [eg six monthly] if adjusting therapy)
- Assess for microalbuminuria

Current Guidelines – Type 2 Diabetes

Western Health

In addition, consider assessment for:

- Psychosocial issues or other individual specific concerns and include assessment for diabetes distress or depression
- Review vaccination status and provide guidance of appropriate preventive activities

At least every two years:

- Undertake a comprehensive eye examination (more frequently for those at high risk)

Current Guidelines – Type 2 Diabetes

Western Health

Individual goals	
Encourage all people with type 2 diabetes to approach/reach these goals	
Diet	Advise individual dietary reviews Refer to 'Lifestyle interventions for the management of type 2 diabetes: Diet'
BMI	Advise a goal of 5–10% weight loss for people who are overweight or obese with type 2 diabetes Refer to 'Weight management interventions for type 2 diabetes'
Physical activity	Children and adolescents: Aim for at least 60 min/day of moderate to vigorous physical activity, plus muscle- and bone-strengthening activities at least three days per week Adults: Aim for 150 minutes of aerobic activity, plus two to three sessions of resistance exercise (to a total of ≥60 minutes), per week Refer to 'Lifestyle interventions for the management of type 2 diabetes: Physical activity'

Current Guidelines – Type 2 Diabetes

Western Health

Cigarette consumption	Zero per day Refer to **'Lifestyle interventions for the management of type 2 diabetes: Smoking cessation'**
Alcohol consumption	No more than 10 standard drinks per week and four on any one day Refer to **'Lifestyle interventions for the management of type 2 diabetes: Alcohol consumption'**
Blood glucose monitoring	Advise 4–7 mmol/L fasting and 5–10 mmol/L postprandial blood glucose levels SMBG is recommended for patients with type 2 diabetes who are using sulfonylureas and/or insulin. Education should be provided regarding the frequency and timing of insulin dose based on SMBG For people not on insulin, the need for and frequency of SMBG should be individualised, depending on the type of glucose-lowering medications, level of glycaemic management and risk of hypoglycaemia, as an aid to self-management SMBG is recommended in pregnancy complicated with diabetes or gestational diabetes SMBG is also recommended for people with hyperglycaemia arising from intercurrent illness (see **ADEA clinical guidelines for sick days**). It may be helpful in haemoglobinopathies or other conditions where HbA1c measurements may be unreliable

Current Guidelines – Type 2 Diabetes

Western Health

Clinical management goals	
Treatment targets for people with type 2 diabetes include the following. For a comprehensive list of assessments and screening intervals, refer to 'Assessment of the patient with type 2 diabetes'.	
HbA1c	Target needs individualisation according to patient circumstances Generally ≤7% (53 mmol/mol)
Lipids	Initiation of pharmacotherapy in primary prevention is dependent on the assessment of absolute CVD risk (refer to the **Australian CVD risk calculator**, which assess multiple risk factors and summates risk rather than using individual parameters) Once therapy is initiated, Australian guideline-specified targets should be used as a guide to treatment. For secondary prevention, treatment to target an LDL cholesterol reduction of ≥50% from baseline and an LDL cholesterol goal of <1.4mmol/L

Current Guidelines – Type 2 Diabetes

Western Health

Blood pressure	Treatment targets should be individualised and monitored for side effects from medications used to lower blood pressure Lower blood pressure targets may be considered for younger people and for secondary prevention in those at high risk of stroke The target for people with diabetes and CKD remains <130/80 mmHg. However, 140/90 mmHg is still considered a general target (see the Heart Foundation's 2016 **Guideline for the diagnosis and management of hypertension in adults**)
Urine albumin excretion	uACR: • Women: <3.5 mg/mmol • Men: <2.5 mg/mmol Timed overnight collection: <20 µg/min; spot collection: <20 mg/L
Vaccination	Recommended immunisations: influenza, pneumococcus, dTpa, COVID-19 , RSV (aged >60 years) Consider: Hepatitis B (if travelling), herpes zoster Consult the **Australian immunisation handbook** for specific advice

Current Guidelines – Type 2 Diabetes

Western Health

MONOTHERAPY: Metformin is the usual monotherapy unless contraindicated or not tolerated

- **Metformin**
- **SU**
- **Insulin**

Less commonly used: acarbose, DPP-4 inhibitor, SGLT2 inhibitor GLP-1RA, or TZD. Only acarbose is PBS reimbursed for monotherapy.

DUAL THERAPY: Choice of treatment – add on an oral agent or injectable therapy

Choice of dual therapy should be guided by clinical considerations (presence of, or high risk of, cardiovascular disease, heart failure, chronic kidney disease, hypoglycaemia risk, obesity), side effect profile, contraindications and cost.

- **SGLT2 inhibitor**
- **GLP-1RA**
- **DPP-4 inhibitor**
- **SU**
- **Insulin**

Less commonly used are: acarbose or TZD.

Current Guidelines – Type 2 Diabetes

Western Health

MULTIPLE THERAPIES: Choice of treatment : include additional oral agent or GLP-1 RA or insulin

Choice of agents should be guided by clinical considerations as above. Note: combinations not approved by PBS include GLP-1RA with SGLT2i. Consider reviewing any previous medication that has not reduced HbA1c by ≥0.5% after 3 months and take into consideration **glycaemic AND non-glycaemic benefits**.

SGLT2 inhibitor	GLP-1RA	DPP-4 inhibitor	SU	Insulin	Less commonly used are: acarbose or TZD.

THEN...

To intensify treatment to meet glycaemic targets

- If on metformin+SU+DPP-4i, consider *adding* SGLT2i, or *switching* DPP-4i to a GLP-1RA, or an SGLT2i.
- When adding incretin therapy, use either a DPP4i or GLP-1RA (not both together).
- If on basal insulin, consider *adding* SGLT2i or GLP-1RA or bolus insulin with meals, or *change* to premixed/coformulated insulin.
- If on metformin+DPP4i+SGLT2i *consider* adding SU or insulin.

With increasing clinical complexity consider specialist endocrinology consultation

Current Guidelines – Why Diagnose CKD?

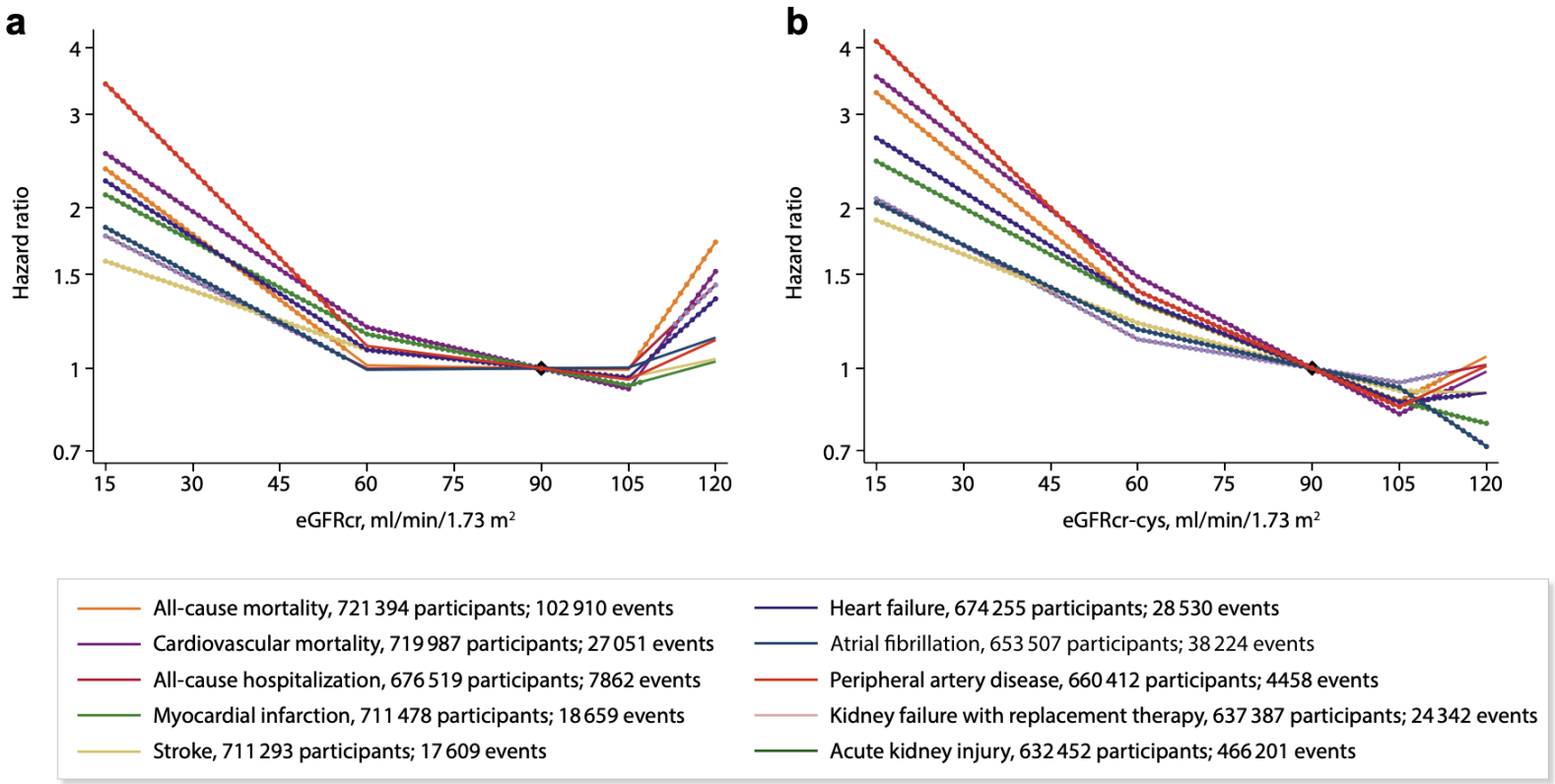


Figure 7 | Hazard ratios for adverse outcomes using the continuous model of estimated glomerular filtration rate (eGFR), comparison of the shape of associations between creatinine-based eGFR (eGFRcr) and creatinine and cystatin C–based eGFR (eGFRcr-cys) in the population with cystatin C (eGFRcr-cys population). (**a**) Associations of eGFR based on creatinine alone with all-cause mortality, cardiovascular mortality, all-cause hospitalizations, myocardial infarction, stroke, heart failure, atrial fibrillation, and peripheral artery disease; (**b**) Associations of eGFR based on creatinine and cystatin C with all-cause mortality, cardiovascular mortality, all-cause hospitalizations, myocardial infarction, stroke, heart failure, atrial fibrillation, and peripheral artery disease. Reproduced with permission from *JAMA*, Writing Group for the CKD Prognosis Consortium; Grams ME, Coresh J, Matsushita K, et al. Estimated glomerular filtration rate, albuminuria, and adverse outcomes: an individual-participant data meta-analysis. *JAMA*. 2023;330(13):1266–1277.[12] Copyright © 2023 American Medical Association. All rights reserved.

Current Guidelines – Why Diagnose CKD?

Western Health

Overall	Urine albumin-creatinine ratio, mg/g					Urine albumin-creatinine ratio, mg/g				
eGFRcr	<10	10–29	30–299	300–999	1000+	<10	10–29	30–299	300–999	1000+
	All-cause mortality: 82 cohorts 26 444 384 participants; 2 604 028 events					Myocardial infarction: 64 cohorts 22 838 356 participants; 451 063 events				
105+	1.6	2.2	2.9	4.3	5.8	1.1	1.4	2.0	2.7	3.8
90–104	ref	1.3	1.8	2.6	3.1	ref	1.3	1.6	2.2	3.2
60–89	1.0	1.3	1.7	2.2	2.8	1.1	1.3	1.6	2.2	3.1
45–59	1.3	1.6	2.0	2.4	3.1	1.4	1.7	2.0	2.8	3.7
30–44	1.8	2.0	2.5	3.2	3.9	1.9	2.0	2.4	3.2	4.3
15–29	2.8	2.8	3.3	4.1	5.6	2.7	3.1	3.1	4.2	5.1
<15	4.6	5.0	5.3	6.0	7.0	4.6	5.6	4.8	6.0	6.0
	Cardiovascular mortality: 76 cohorts 26 022 346 participants; 776 441 events					Stroke: 68 cohorts 24 746 436 participants; 461 785 events				
105+	1.4	2.0	3.0	4.1	5.4	1.2	1.6	2.2	3.1	4.3
90–104	ref	1.3	1.9	2.7	3.6	ref	1.3	1.6	2.4	3.1
60–89	1.0	1.4	1.7	2.4	3.2	1.1	1.3	1.7	2.2	3.0
45–59	1.4	1.7	2.2	2.8	3.8	1.4	1.6	1.9	2.3	2.9
30–44	2.0	2.3	2.8	3.7	4.6	1.6	1.7	2.0	2.4	3.0
15–29	3.2	3.1	3.5	5.0	6.5	1.8	2.1	2.1	2.7	3.0
<15	6.1	6.4	6.4	7.3	8.2	3.2	2.8	2.9	3.2	3.8
	Kidney failure with replacement therapy: 57 cohorts 25 466 956 participants; 158 846 events					Heart failure: 61 cohorts 24 603 016 participants; 1 132 443 events				
105+	0.5	1.2	2.9	7.7	25	1.2	1.7	2.7	4.2	6.9
90–104	ref	1.8	4.3	12	43	ref	1.3	2.0	2.8	4.2
60–89	2.3	4.9	10	27	85	1.1	1.4	1.9	2.7	4.2
45–59	13	19	37	89	236	1.6	1.8	2.4	3.4	5.0
30–44	50	58	115	240	463	2.2	2.5	3.1	4.2	6.5
15–29	283	301	443	796	1253	3.6	3.5	4.1	5.8	8.1
<15	770	1040	1618	2297	2547	5.1	5.7	5.8	7.9	9.9

	Acute kidney injury: 49 cohorts 23 914 614 participants; 1 408 929 events					Atrial fibrillation: 50 cohorts 22 886 642 participants; 1 068 701 events				
05+	1.0	1.6	2.4	3.7	5.5	1.1	1.3	1.7	2.4	3.5
0–104	ref	1.4	2.1	3.2	5.0	ref	1.2	1.5	1.9	2.3
0–89	1.6	2.2	3.1	4.3	6.7	1.0	1.2	1.4	1.7	2.2
5–59	3.5	4.0	5.1	6.9	9.0	1.2	1.3	1.5	1.8	2.4
0–44	5.6	5.9	6.8	8.6	11	1.4	1.5	1.7	2.0	2.4
5–29	8.3	8.0	8.5	9.9	10	1.9	1.8	2.0	2.6	3.0
:15	8.5	11	7.9	5.5	5.7	2.6	2.5	3.1	3.6	4.2
	Hospitalization: 49 cohorts 25 426 722 participants; 8 398 637 events					Peripheral artery disease: 54 cohorts 24 830 794 participants; 378 924 events				
05+	1.4	1.7	2.1	2.1	2.3	0.9	1.4	1.9	2.8	5.0
0–104	ref	1.1	1.3	1.5	1.7	ref	1.3	1.9	2.8	4.3
0–89	1.0	1.1	1.3	1.5	1.8	1.0	1.3	1.8	2.5	3.8
5–59	1.3	1.3	1.5	1.7	2.1	1.5	1.7	2.1	2.9	4.2
0–44	1.5	1.5	1.6	1.9	2.3	2.0	1.9	2.5	3.6	5.0
5–29	1.8	1.8	1.9	2.4	2.8	3.3	3.3	3.8	5.7	8.1
:15	2.7	2.8	3.0	3.2	3.8	9.1	9.0	9.6	13	14

Figure 5 | Associations of chronic kidney disease (CKD) staging by estimated glomerular filtration rate by creatinine (eGFRcr) and albumin-to-creatinine ratio (ACR) categories and risks for 10 common complications in multivariable-adjusted analyses. Numbers reflect the adjusted hazard ratio compared with the reference cell. Adjustment variables included age, sex, smoking status (current, former, or never), systolic blood pressure, total cholesterol, high-density lipoprotein cholesterol, body mass index, use of antihypertensive medications, and a medical history of diabetes, coronary heart disease, stroke, heart failure, atrial fibrillation, peripheral artery disease, cancer, and chronic obstructive pulmonary disease, where relevant. The colors were determined for each outcome separately using the following rule: the percentile shaded the darkest green color corresponds to the proportion of cells in the grid without CKD (e.g., 6 of 35 cells with eGFR ≥60 ml/min per 1.73 m^2 and ACR <30 mg/g [<3 mg/mmol]), and the percentile shaded the darkest red color corresponds to proportion expected to be at highest risk (e.g., 11 of 35 cells with eGFR <15 ml/min per 1.73 m^2 and albumin-to-creatinine ratio 1000+ mg/g [100+ mg/mmol]). In this manner, the numbers of green and red cells are consistent across outcomes, but the patterns are allowed to differ. ref, reference cell.
Reproduced with permission from *JAMA*, Writing Group for the CKD Prognosis Consortium; Grams ME, Coresh J, Matsushita K, et al. Estimated glomerular filtration rate, albuminuria, and adverse outcomes: an individual-participant data meta-analysis. *JAMA*. 2023;330(13):1266–1277.[12]
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Current Guidelines – Why Diagnose CKD?

Western Health

Who should I test?

Patients with risk factors for CKD

- Diabetes*
- Hypertension*
- Established cardiovascular disease
- Family history of kidney failure
- Obesity
- Smoker
- Aboriginal or Torres Strait Islander origin ≥30
- History of AKI

Kidney Health Check:

- eGFR
- Urine albumin creatinine ratio (uACR)
- Blood pressure

How often:

- Kidney Health Check every 1-2 years.
- * Patients with DM and HTN should all be screened yearly.

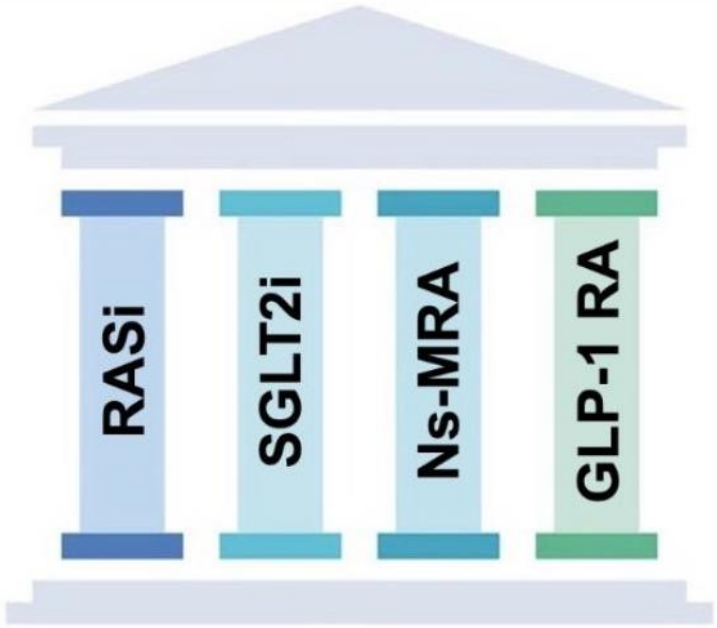
Current Guidelines – CKD Management

Western Health

Lifestyle	Blood pressure	Cardiovascular risk	Medications
• Smoking cessation • Physical activity • Weight reduction if overweight • Salt reduction	• <130/80mmHg *being updated to <120/80 • ACEi / ARB first line	• Mod-severe CKD (eGFR < 45 OR macroalbuminia = highest CVD risk • Statin therapy as per CVD guidelines • LDL < 2 (primary) & <1.8 (secondary)	• ACEi / ARB • SGLT2i • MRAs • *GLP1-agonists*

Current Guidelines – CKD Management

- **Able to delay and prevent disease progression**
- **Requires early diagnosis and management**



Renin angiotensin aldosterone system inhibitors (RASi)- prior standard of care

Sodium glucose co-transporter 2 inhibitors (SGLT2i)

- ↓ 37% progressive CKD (1)
- ↓ 20% HF hospitalisation or death (2)

Glucagon-like peptide 1 receptor agonist (GLP1-RA) in DM with CKD

- ↓ 24% CKD progression or death (3)
- ↓ 13% CVD events (4)

Non steroidal mineralocorticoid antagonists (nsMRA) in DM with CKD

- ↓ 14% CVD events (5)
- ↓ 23% CKD progression (5)

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Emerging Therapies – Type 1 Diabetes

Western Health

Glucose Monitoring

- Newer sensors are smaller, last longer, further Bluetooth range
- Trials of Continuous Glucose and Ketone Monitoring (CGKM)

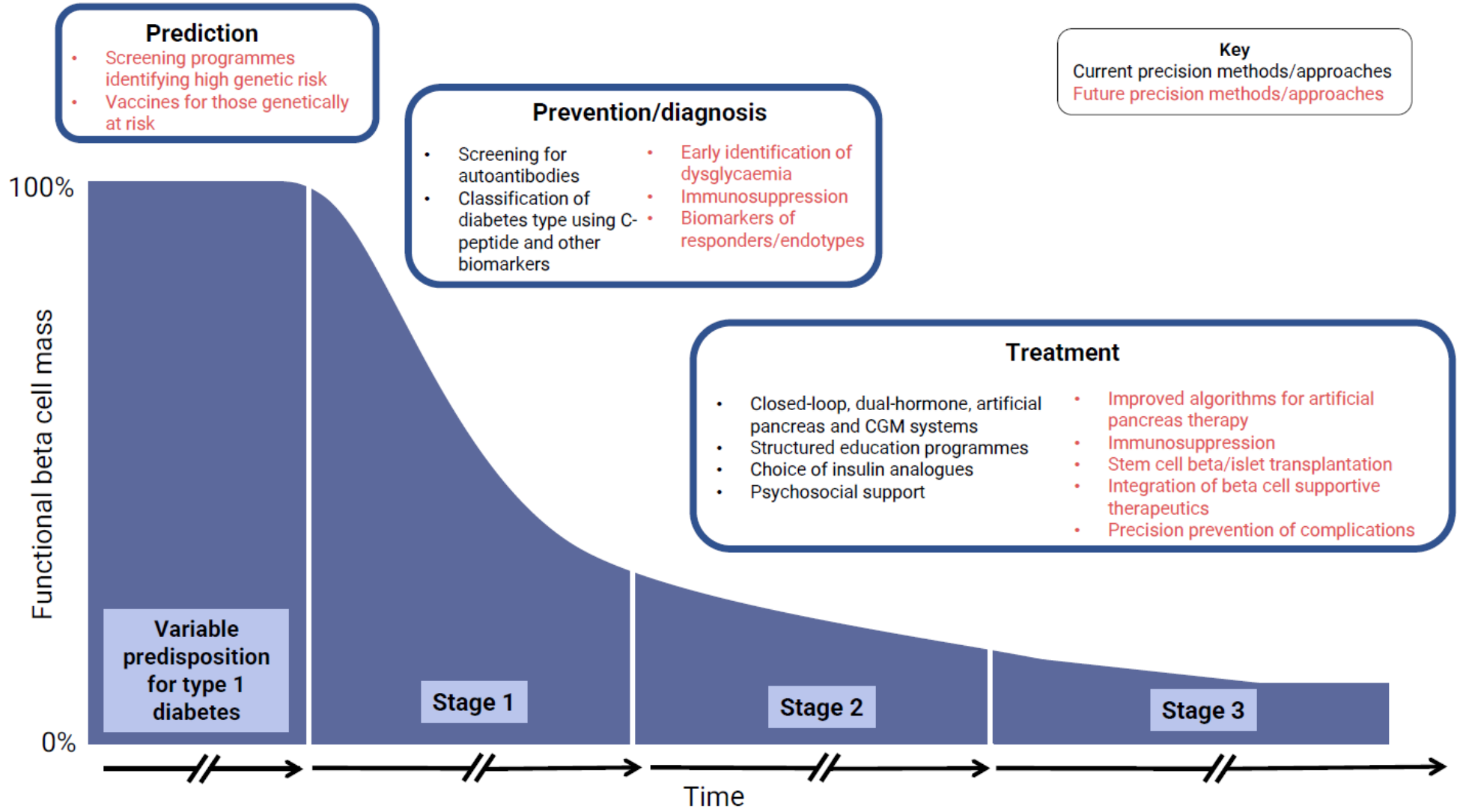
Insulin Pumps

- Closed Loop Systems, improved predictive algorithms

Prediction and Prevention

- Type 1 Screen
- Disease modifying therapies e.g. Teplizumab, Baricitinib

Emerging Therapies – Type 1 Diabetes



Carr et al (2022) Diabetologia DOI 10.1007/s00125-022-05778-3

Emerging Therapies – Type 2 Diabetes

Western Health

Tirzepatide (GIP-GLP-1 RA)

- More effective than sole GLP-1 Ras for HbA1c reduction and weight loss

Other enteroendocrine hormone targets

- GLP-1-Glucagon (Survodutide)
- GLP-1 Amylin (Cagrilinitide)
- GLP-1-GIP-Glucagon (Retatrutide)

Oral Semaglutide

- TGA approved

Emerging Therapies – Type 2 Diabetes

Western Health

Ultra-long acting insulin (Insulin Icodec)

- Once weekly dosing, non-inferior to glargine

Incretin therapies for MASLD

- Multiple in research phase…

Combination injectables

- Multiple in research phase…

Western Health

Back to our cases…

Case 1: Ms LM

- 32F p/w **polyuria**, **polydipsia** and **weight loss**

- Examination
  - Well-appearing, 72kg, BMI 26.4
  - BP 125/85, BGL 14.0
  - No signs of insulin resistance

- Considerations
  - Initial next steps?
  - Ketones?
  - Diabetes type?

- Differential diagnosis
  - Thyroxine over-replacement?
  - Type 2 diabetes?
  - Type 1 diabetes?

- Next steps
  - Initial management
  - Baseline pathology
  - Tests to confirm diabetes type

Case 1: Ms LM

- 32F p/w **polyuria**, **polydipsia** and **weight loss**

- Progress
  - Commenced insulin!
  - Previously used in GDM
  - Safely stabilise BGLs pending results

Case 1: Ms LM

- 32F p/w **polyuria**, **polydipsia** and **weight loss**

- Baseline Pathology
  - Glucose 7.2 (<6.0)
  - HbA1c 9.2% (<6.0%)
  - Cr 88 (40-90)
  - eGFR 86 (>60)
  - TSH 2.20 (0.50-4.00)
  - UACR 2.0 (<3.0)
  - TC 4.2 (3.5-5.5)
  - LDL 1.4 (<3.5)

- Additional Testing
  - C-peptide 0.22 (0.3-1.30)
  - GAD Ab 56.0 (<10.0)
  - IA2 Ab 12.1 (<10.0)

Case 1: Ms LM

- 32F p/w **polyuria**, **polydipsia** and **weight loss**

- Diagnosis = Type 1 Diabetes
  - Symptomatic at presentation
  - Low C-peptide, GAD and IA2 positive
  - FHx of autoimmune disease

The 4 Ts of Type 1 Diabetes

Thirst (polydipsia)
Toilet (polyuria)
Tiredness (metabolic fatigue)
Thinner (unexplained weight loss)

- Treatment
  - Insulin from onset to prevent DKA

- Progress
  - DNE, CGM, enrolled in DAFNE course

Case 2: Mr OB

- 48M p/w **hypoglycaemia** and **weight gain**

- Initial Pathology
  - Glucose 4.2 (<6.0)
  - HbA1c 7.2% (<6.0%)
  - Cr 86 (40-90)
  - eGFR 84 (>60)

  - TSH 3.50 (0.50-4.00)
  - UACR 8.2 (<3.0)
  - TC 4.8 (3.5-5.5)
  - LDL 2.0 (<3.5)

- Considerations
  - Cease or reduce Gliclazide?
  - Can Metformin be re-trialled?
  - Instant vs Modified Release?
  - Cardiovascular risk optimisation?

Case 2: Mr OB

- 48M p/w **hypoglycaemia** and **weight gain**

- Progress
  - Gliclazide ceased, hypoglycaemia resolved
  - Engaged with DNE team, much improved understanding of diabetes and treatment targets
  - Commenced Metformin XR with largest meal, tolerated well, up-titrated to maximum dose

  - Improved adherence with statin, LDL 1.6 on repeat testing
  - Weight back down from 96kg > 90kg after 4 months (BMI 28.4 > 26.6)
  - Added Empagliflozin in combination tablet for high cardiovascular risk
  - BP improved to 130/80
  - UACR 2.2 on repeat testing

Case 3: Mr AN

- 62M new to clinic p/w **lethargy** and **polyuria**

- Initial Pathology
  - Hb 140 (115-160)
  - HbA1c 8.8% (<6.0%)
  - Cr 74 (40-90)
  - eGFR 90 (>60)

  - TSH 2.80 (0.50-4.00)
  - UACR 3.2 (<3.0)
  - TC 6.4 (3.5-5.5)
  - LDL 3.2 (<3.5)

- Considerations
  - Management of hyperglycaemia?
  - Investigations for daytime somnolence?
  - Weight management?
  - Cardiovascular risk optimisation?

Case 3: Mr AN

- 62M new to clinic p/w **lethargy** and **polyuria**

- Progress
  - Insulin commenced to stabilise BGLs, polyuria resolved
  - Engaged with DNE team, much improved understanding of diabetes and treatment targets
  - Linagliptin ceased, Semaglutide commenced and up-titrated then insulin weaned

  - Engaged with dietetics team, improved diet, energy levels much improved
  - Weight improved from 88kg > 80kg after 6 months (BMI 32 > 29); HbA1c 8.8% > 7.0%
  - FIB-4 2.40 > F2 on FibroScan > referred to Gastro, ceased EtOH, monitoring on GLP1
  - PSG confirmed OSA > commenced CPAP; Tibial disease on LL US, commenced aspirin
  - Inclisiran added for non-familial hypercholesterolaemia, LDL improved 3.2 to 1.6

Outline

- 1. Overview of normal bone metabolism and common metabolic bone disorders
- 2. Local burden of disease - minimal trauma fractures
- 3. Metabolic bone services at Western Health
- 4. Case presentations highlighting common management considerations
- 5. Management decisions in diabetes
- 6. Review of current guidelines
- 7. Emerging therapies
- **8. How and when to refer?**
- 9. Q+A session

When to refer - Diabetes

Western Health

Criteria for referral to public hospital specialist clinic services

- Diagnosed with type 1 diabetes.

Information that must be provided

- Reason for referral
- Details of previous medical management including the course of treatment and outcome of treatment
- Current and previous HbA1c results
- Current and complete medication history (including non-prescription medicines, herbs and supplements)
- Known complications or comorbidities (e.g. cardiovascular disease, kidney disease, retinopathy, cerebral vascular disease, neuropathy, anxiety, depression)
- Urea and electrolyte results
- Creatinine blood results
- Albumin to creatinine ratio (ACR) urine results
- Liver function results
- Lipid profile results
- If the person identifies as an Aboriginal and/or Torres Strait Islander
- Functional impact of symptoms on daily activities including impact on work, study or carer role.

When to refer - Diabetes

Western Health

Direct to an emergency department for:

- Diabetic ketoacidosis or suspected diabetic ketoacidosis (e.g. abdominal pain, dehydration, confusion, nausea and vomiting, raised ketones)
- Hyperosmolar hyperglycemic state
- Diabetes and severe vomiting
- Acute, severe hyperglycaemia
- Acute, severe hypoglycaemia
- Suspected Charcot's neuroarthropathy (e.g. unilateral, red, hot, swollen, possibly aching foot)
- Foot ulceration with absent pulses.

Immediately contact the endocrinology registrar to arrange an urgent endocrinology assessment for:

- New diagnosis of type 1 diabetes
- Pregnancy in known diabetic woman
- Recent, resolved hypoglycaemia episode resulting in unconsciousness.

When to refer - Diabetes

Western Health

Criteria for referral to public hospital specialist clinic services

- Type 2 diabetes not responding to a combination of dietary AND medical management (i.e. has tried at least three glucose-lowering medicines) with HbA1c greater than 64 millimoles per mole or 8 percent
- Patients with type 2 diabetes with complications (e.g. cardiovascular disease, kidney disease, retinopathy, cerebral vascular disease, neuropathy)
- Planning for pregnancy
- Management of unstable glycaemic control due to concomitant use of medicines that impact on glycaemic control (e.g. corticosteroids, chemotherapy protocols)
- Assessment for commercial driver's licence
- Diagnosis of type of diabetes.

Information that must be provided

- Reason for referral.
- All medicines previously tried, duration of trial and effect
- Current and previous HbA1c results
- Known complications or comorbidities (e.g. cardiovascular disease, kidney disease, retinopathy, cerebral vascular disease, nerve damage in the lower limbs, anxiety, depression, foot ulcers)
- Current and complete medication history (including non-prescription medicines, herbs and supplements)
- Urea and electrolyte results
- Creatinine blood results
- Albumin to creatinine ratio (ACR) urine results
- Liver function results
- Lipid profile results.
- Functional impact of symptoms on daily activities including impact on work, study or carer role
- If the person identifies as an Aboriginal and/or Torres Strait Islander
- If the person is part of a vulnerable population.

When to refer - Diabetes

Western Health

Direct to an emergency department for:

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Diabetes Specialist Clinics at Western Health:

Western Health provides the following Specialist Clinics for patients who require assessment and management of diabetes conditions. Patients will be triaged by Consultant Endocrinologists into one two pathways: Diabetes Clinics (Type 1 & 2 Diabetes) OR Rapid Access Clinic.

Please refer:

- Patients with gestational diabetes – add relevant information to **Maternity referral.**
- Patients with diabetes aged under 25 to **Paediatrics – YADS Clinic**
- Patients on insulin pumps to the **Insulin Pump Clinic**
- Patients with a diabetic foot ulcer present for > 4 weeks to the **Diabetes Foot Service**

Conditions not seen by Diabetes Specialists at Western Health:

- Uncomplicated Type 2 diabetes, HbA1c < 8% (64 mmol/mol). These patients are mostly appropriately managed in primary care (Management of type 2 diabetes: A handbook for general practice (RACGP). Discuss exceptions with the Endocrinology Registrar (8345 6666 and page). No HbA1c threshold applies to patients with an EGFR <30 mL/min/1.73m2
- Patients with HbA1c ≥ 8.0% (64 mmol/mol) but appropriate for their age and /or comorbidities (e.g., elderly patients, asymptomatic patients with limited life expectancy)
- Patients managed by an endocrinologist at another health service (public or private) unless special circumstances exist (e.g., change in care provider due to change of address)
- Patients without diabetes (insulin resistance, pre-diabetes, polycystic ovarian syndrome, obesity)
- Patients discharged from Diabetes Clinic (Western Health or other) in the last 12 months, unless new symptoms, new/worsening complications, or a rise in HbA1c > 1.0% (8 mmol/mol) which has not responded to escalation in primary care management. If your patient has a HbA1c rise since discharge, please consider lifestyle measures review and medication changes, including commencement or change of insulin dose. The Endocrinology Registrar is contactable for advice.

Alarm Symptoms:

The following alarm symptoms should trigger an immediate referral to an **Emergency Department:**

- Suspicion of diabetic ketoacidosis (DKA) e.g., abdominal pain, nausea and vomiting, dehydration, significantly elevated ketones
- Hypoglycaemia resulting in unconsciousness
- Infected diabetic foot ulcer
- Acute deterioration in vision

Western Health Specialist Clinics
Access & Referral Guidelines

Call Endocrinology Registrar to discuss (03 8345 6666 and page):

- Newly diagnosed/suspected Type 1 diabetes (not in DKA)
- Blood glucose greater than 20 mmol/L, or repeatedly over 15 mmol/L

Access & Referral Priority:

The clinical information provided in your referral will determine the triage category. The triage category will affect the timeframe in which the patient is offered an appointment.

URGENT **Appointment timeframe within 30 days**	ROUTINE **Appointment timeframe greater than 30 days, depending on clinical need.**
• Recently diagnosed Type 1 diabetes (already started insulin therapy – phone Endocrine Registrar **8345 6666 and page**)	• Patients with Type 1 diabetes and HbA1c less than 10% (86 mmol/mol)
• Patients with Type 1 diabetes, HbA1c > 10%	• Patients with Type 1 or 2 diabetes transitioning from a Young Adult Diabetes Service
• Symptomatic Type 2 diabetes despite recommended diabetes management (Management of type 2 diabetes: A handbook for general practice (RACGP).	• Patients with Type 2 diabetes with suboptimal control, with or without complications (HbA1c above 8.0% (64 mmol/mol) in most cases, a higher HbA1c may be acceptable if elderly or limited life expectancy)
• History of hypoglycaemia requiring assistance of another person or repeated symptomatic hypoglycaemia	
• Planned surgery Western Health (or Western Health patient with planned cardiac or neurosurgery at a Victorian public hospital) in the next 6 months with HbA1c ⩾ 9%.	
• Patients discharged from inpatient care < 4 weeks with unstable blood sugar levels.	

Western Health

Condition Specific Referral Guidelines:

Key information enables Western Health to triage patients to the correct category and provide treatment with fewer visits to specialist clinics, creating more capacity for care. If key information is missing, you may be asked to return the referral with the required information.

Condition:	Key Information Points:	Clinical Investigations:
Diabetes	• Reason for referral including dates of diagnosis and details of any macrovascular (IHD, stroke, PVD) or microvascular complications (neuropathy, retinopathy) • Details of most recent eye review • List of all current medications and doses • Details of past diabetes treatment and reasons for medication changes • Details of smoking and alcohol intake • Details of Aboriginal or Torres Strait Islander status • Relevant family history • Contact details of diabetes educator and other specialists (e.g., cardiologist, nephrologist)	• HbA1c within last 3 months and copies of results over the last 12 months if available • Urea & Electrolytes including Creatinine • Morning Urine albumin: creatine ratio • Lipid profile (fasting)

When to refer to DFU and DFS outpatient services

Western Health

Criteria for referral to public hospital specialist clinic services

- Non-healing foot ulceration present for more than 1 month with no reduction in size despite medical management
- Red hot swollen foot (active Charcot foot)
- Foot osteomyelitis with ulceration
- Chronic ischaemic signs and symptoms of the lower limb with foot ulceration
- Neuropathic symptoms associated with deranged function and structure.

Direct to an emergency department for:

- Sepsis or acutely unwell due to foot infection
- Tissue loss with absent pulses
- Suspected acute limb ischaemia
- Rapidly deteriorating ulceration or necrosis
- Suspected infection from a foreign body in the foot
- Rapidly deteriorating ulceration or necrosis
- Suspected Charcot's neuroarthropathy (e.g. unilateral, red, hot, swollen, possibly aching foot).

Diabetes Foot Service (DFS) at Western Health

The Western Hospital (Footscray) Diabetes Foot Service (DFS) provides high risk assessment and management to patients with diabetes related foot complications in the Western Region.

The DFS clinic includes the following disciplines:

- Podiatry
- Endocrinology
- Vascular Surgery
- Orthopaedic Surgery
- Infectious Diseases
- Diabetes Education
- Orthotics

Please review the following guidelines before referring a patient to the DFS

Eligibility for DFS services at Western Health

Diabetes related foot problem including but not limited to:

- Non healing foot ulceration
- Active Charcot Foot
- Foot osteomyelitis with ulceration
- Chronic ischaemic signs and symptoms of the lower limb WITH foot ulceration

Conditions/Patients not seen at Western Health DFS

The following conditions are not seen by the DFS specialists at Western Health:

- Referrals for routine foot checks for people with diabetes
- Patients requiring footwear and/or orthotics in the absence of an active foot wound
  Patients in residential aged care facilities (if required refer to relevant medical/surgical Western Health outpatient clinic)

Alarm Symptoms

Urgent conditions are beyond the scope of these guidelines. If immediate assessment is required, please refer patients directly to Footscray Emergency Department. Please note there is no DFS at Sunshine or Williamstown Hospitals

Refer immediately to Emergency Department:

- Septic patient or acutely unwell patient due to foot infection
- Critical lower limb ischemia with necrosis, pain or ulceration
- Suspected acute limb ischaemia
- Rapidly deteriorating ulceration/necrosis

Minimum clinical information for referral

- Diabetes history e.g. Type, year of onset etc.
- Medical history

Western Health

Western Health HARP
Access & Referral Guidelines

- Medications, including current antibiotics (if any)
- Recent pathology tests e.g. routine bloods, HbA1c, wound swabs etc.
- Recent vascular imaging e.g. Duplex ultrasound
- X-ray or other imaging, with results/reports
- Wound history and location
- Details of any current podiatry involvement

Please note referrals that do not provide adequate information for triaging may be returned with a request for further information.

Referral requirements

- Clearly address referral to the Diabetes Foot Service, fax referrals to 8345 7315
- List your provider number and the patient's Medicare number
- Provide any health advocacy requirements for the client

Please contact the DFS on 8345 6922 or the DFS Coordinator on 0466 48 77 27 if you would like to discuss a referral

How to refer to Diabetes outpatient services

Western Health

Adult Specialist Clinics

- Phone: 03 8345 6856
- Fax: 03 8345 6490

https://westernhealth.org.au/health-professionals/referrals/how-refer

The Endocrinology team can also be contacted via switch if you wish to provide direct handover regarding a patients care

How to refer to DFU and DFS outpatient services

Western Health

DFS outpatient services

- Phone: 03 8345 6922
- Email: diabetesfootservice@wh.org.au

Early referrals encouraged!

The DFU team (inpatient service) can also be contacted via switch if you wish to provide direct handover regarding a patients care

How to refer to Melton Diabetes Education

Western Health

Melton Community Health

- Phone: 03 9746 0668
- Email: BM-intake@wh.org.au

Refer with OR without a chronic disease management care plan

- $15 per visit but can be waived if financial distress
- Diabetes education, meter supply, education on BGL monitoring and targets
- Insulin initiation and titration with an insulin titration order

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Western Health

Questions?

Thank you for attending. What's next?

After this session you will receive:

1. *Slides, resources and the recording of this session within the week*
2. *RACGP CPD hours will be uploaded within 14 days.*
3. *Attendance certificate will be received within 4-6 weeks.*

- ***Register for more education sessions here:*** *nwmphn.org.au/resources-events/events*
- ***Past education sessions can be found here:*** *nwmphn.org.au/resources-events/resources*
- ***Session Survey Link***

https://www.surveymonkey.com/r/26BM285

Feedback - QR code

We welcome your feedback. Let us know if you got what you needed from this session.