Diabetes Education and Management in Aged care

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NORTH WEST NUTRITION
healthy eating made simple

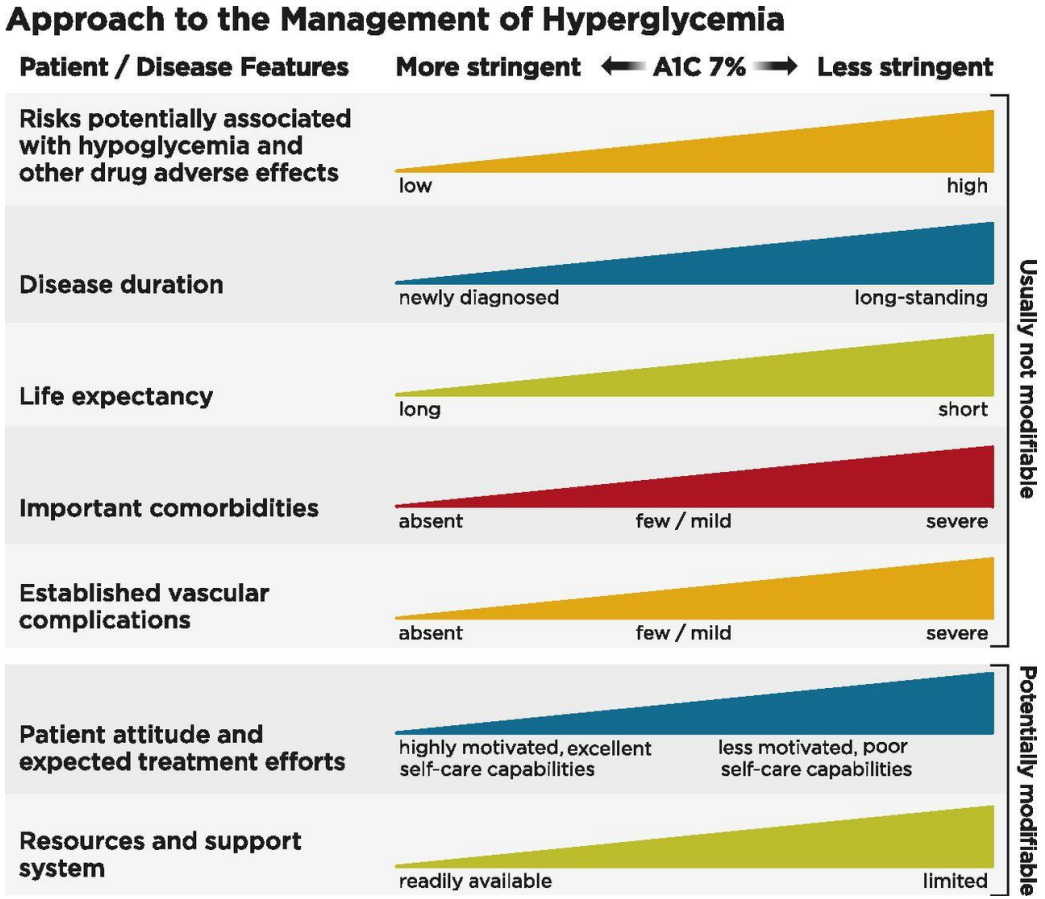
What does a Credentialled Educator do?

- Assess medication and side effects.
- Assess insulin injection technique and storage of insulin
- Education to residents and staff in regards
  - to how diabetes work in the body
  - How medication works to lower blood glucose levels
- Work with Dietitian to aim for optimal blood glucose levels and quality of life.
- Provide recommendations to GP in regards to how BGL's may be improved.

Why does diabetes management change in the older person

- Hypo unawareness increases
- Increase risk of falls
- Decreased kidney function
- Muscle wasting and decreased mobility of nutrients
- Multiple chronic diseases
- Reduced self care abilities

Glycemic Targets: ***Standards of Medical Care in Diabetes—2018*****,**
https://care.diabetesjournals.org/content/41/Supplement_1/S55.figures-only



Glucose Monitoring Target change with age

- Blood glucose levels should be individualised for every person.
- Fasting glucose is on waking.
- In aged care before lunch and dinner BGL's may not be accurate.
  - Fasting is 4 hours after the last meal.
  - Aged care may have short gaps between meal times

Glucose monitoring targets

Type of diabetes	When	Target	HbA1c
Type 1		Individualised	
Type 2 Adults (RACGP)	Fasting or before a meal	4-7 mmol/L	≤ 7% or 53mmol/mol
	2 hours after a meal	5-10mmol/L	
Diabetes in elderly frail or with hypo unawareness (McKellar guidelines)		6 - 15mmol/L	7.5–8.0%/ 58–64 mmol/mol or higher
Compare without diabetes		Body keeps levels within 3.5- 7.8mmol/L	

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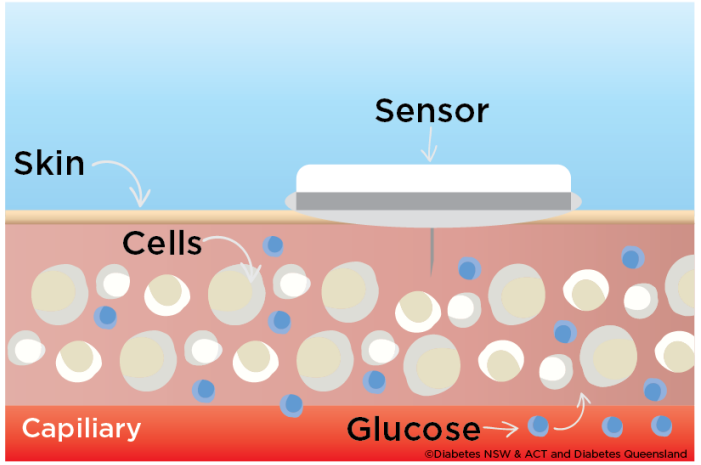
- Colagiuri S, Dickinson S, Girgis S, Colagiuri R. *National Evidence Based Guideline for Blood Glucose Control in Type 2 Diabetes.* Diabetes Australia and the NHMRC, Canberra 2009
- Dunning, T., Duggan, N., Savage, S., (2014). *The McKellar guidelines for managing older people with diabetes in residential and other care settings*, Centre for nursing and allied health, Deakin University and Barwon Health, Geelong.

Changes in monitoring diabetes in aged care

- Flash Glucose Monitor and Continuous Glucose monitoring can be used in aged care
- Records intentional fluid glucose.
- Reading every 5minutes.
- Collect data over 24 hours
- Funded under
  - DVA
  - NDSS for people with Type 1
  - Free two week trail with a CDE

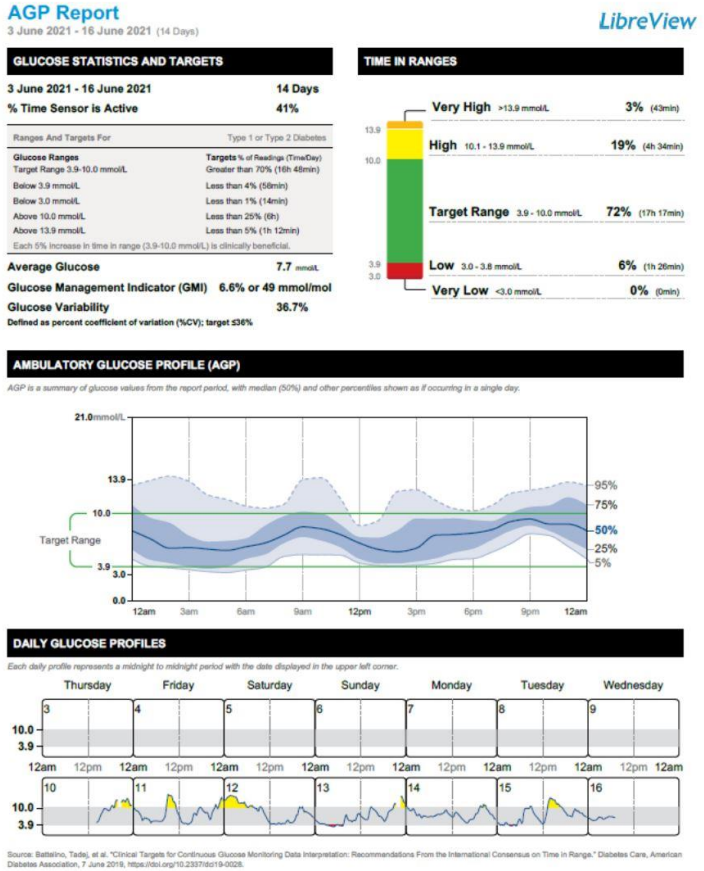


Glucose sensor measures glucose in the interstitial fluid.

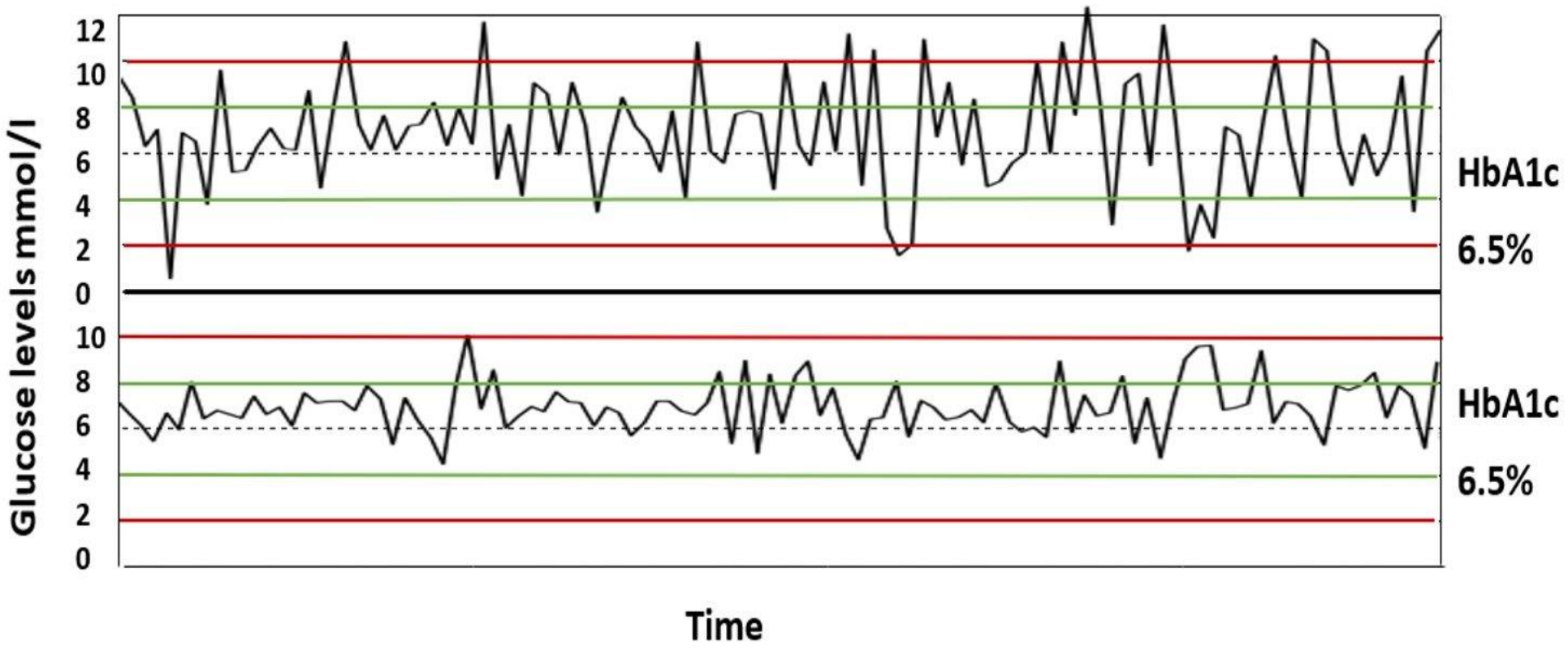
BG monitor measures glucose in the blood.

The new way of managing diabetes

- Past - BGL checking aiming to be in range pre and post meals
- Currently HbA1c. Does not show true story if person has high variability in BGL's
- FGM and CGM look at time in range and variability.
  - Aim 70% time in range
  - Minimise low glucose events
  - Variability under 32%



HbA1c vs variability



Hyperglycaemia in Aged Care

Blood Glucose levels over 15 mmol

- Increased urination
  - Increase thrush and UTI
- Change in behaviour
  - Irritable and or easily becomes angry
  - Depression
- Sleepy - spends more time in bed
  - missing meals
  - Increase risk of pressure sores
- Wounds slow to heal
  - Increase risk of pressure sores and ulcers.

Diabetic ketoacidosis in Type 1 diabetes

Signs include:

- Fast onset within 24 hours,
- Polyuria/polydipsia,
- Nausea and or vomiting ,
- Abdominal pain,
- Weight loss,
- Dehydration.
- Blurred vision,
- Altered consciousness,
- Kussmaul's breathing, rapid respiratory rate,
- Ketotic breath – smells fruity, and

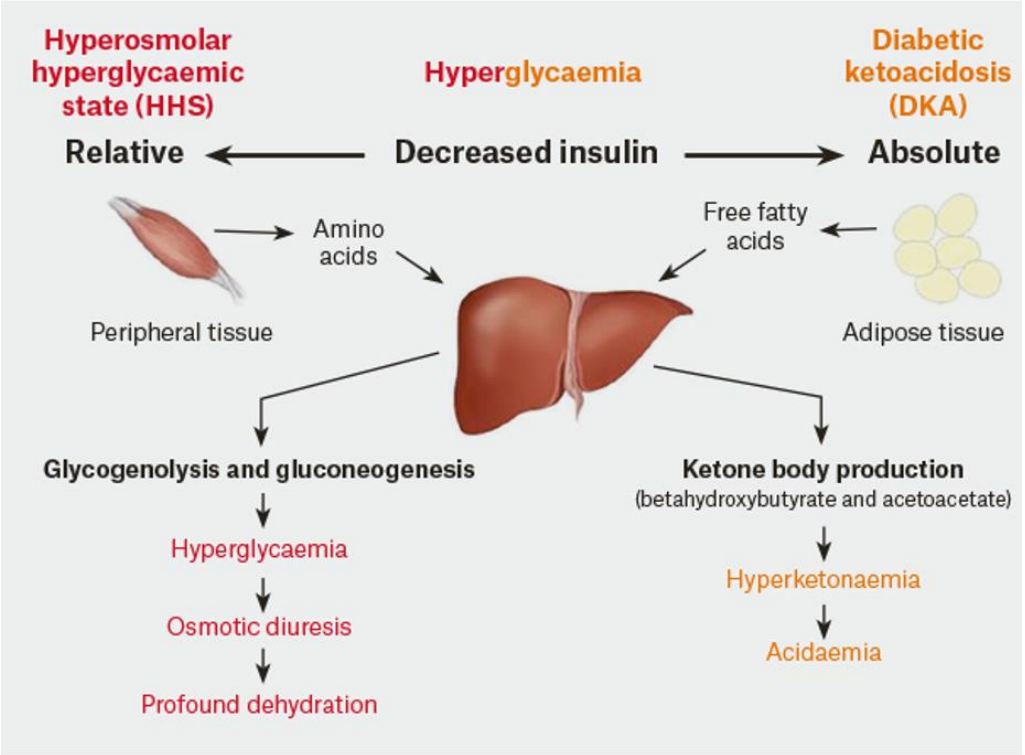
Hyperosmolar hyperglycaemic state in type 2 diabetes

Risk factors include:

- Being elderly,
- Having reduce ability for oral fluid replacement,
- Infection,
- Myocardial infarction, or a
- Cerebrovascular event.

Characterised by:

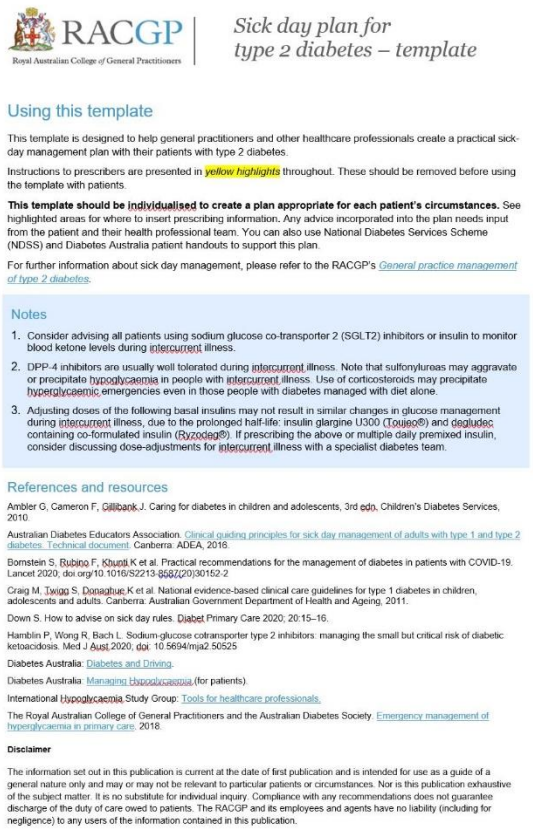
- severe hyperglycaemia (>30 mmol/L),
- profound dehydration, hypovolaemia, and
- plasma hyperosmolality (>320 mosm/kg) with hypernatraemia.



Willix, C., Griffiths, E., & Singleton, S. (2019, May). Hyperglycaemic presentations in type 2 diabetes. Australian Journal of General Practice, 48(5). doi:10.31128/AJGP-12-18-4785

Sick Day Management Plans

- Resident will need BGL checking every 2 hours.
- Ketone testing if BGL's over 15 - 20mmol
- Insulin adjustments
- Oral medication plan to withheld
- When to go to hospital



RACGP
Royal Australian College of General Practitioners

Sick day plan for type 2 diabetes – template

Using this template

This template is designed to help general practitioners and other healthcare professionals create a practical sick-day management plan with their patients with type 2 diabetes.

Instructions to prescribers are presented in *yellow highlights* throughout. These should be removed before using the template with patients.

This template should be individualised to create a plan appropriate for each patient's circumstances. See highlighted areas for where to insert prescribing information. Any advice incorporated into the plan needs input from the patient and their health professional team. You can also use National Diabetes Services Scheme (NDSS) and Diabetes Australia patient handouts to support this plan.

For further information about sick day management, please refer to the RACGP's *General practice management of type 2 diabetes*.

Notes

1. Consider advising all patients using sodium glucose co-transporter 2 (SGLT2) inhibitors or insulin to monitor blood ketone levels during intercurrent illness.
2. DPP-4 inhibitors are usually well tolerated during intercurrent illness. Note that sulfonylureas may aggravate or precipitate hypoglycaemia in people with intercurrent illness. Use of corticosteroids may precipitate hyperglycaemic emergencies even in those people with diabetes managed with diet alone.
3. Adjusting doses of the following basal insulins may not result in similar changes in glucose management during intercurrent illness, due to the prolonged half-life: insulin glargine U300 (Toujeo®) and degludec containing co-formulated insulin (Ryzodeg®). If prescribing the above or multiple daily premixed insulin, consider discussing dose-adjustments for intercurrent illness with a specialist diabetes team.

References and resources

Ambler G, Cameron F, Gillibank J. Caring for diabetes in children and adolescents, 3rd edn. Children's Diabetes Services, 2010.

Australian Diabetes Educators Association. Clinical guiding principles for sick day management of adults with type 1 and type 2 diabetes: Technical document. Canberra: ADEA, 2016.

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Down S. How to advise on sick day rules. Diabet Primary Care 2020; 20:15–16.

Hamblin P, Wong R, Bach L. Sodium-glucose cotransporter type 2 inhibitors: managing the small but critical risk of diabetic ketoacidosis. Med J Aust 2020; doi: 10.5694/mja2.50525.

Diabetes Australia: Diabetes and Driving.

Diabetes Australia: Managing Hypoglycaemia (for patients).

International Hypoglycaemia Study Group: Tools for healthcare professionals.

The Royal Australian College of General Practitioners and the Australian Diabetes Society. Emergency management of hyperglycaemia in primary care, 2018.

Tips in Aged Care

- Yearly HbA1c for all resistants to check for newly diagnosed people with diabetes
- Medication review
  - Sulfonylureas - falls risk
  - Decline in kidney function – when to reduce and stop glucose lowering oral medications
  - GLP-1s - reduce appetite. Increased risk of malnutrition
  - SGL T2 – improve kidney function also can increase UTI and thrush
  - DDP-4 - Linagliptin unaffected by hepatic and renal changes
  - Insulin. Newer insulins available with low variability and can reduce the number of injections

Case Study – Bruce

- 85 year old with Type 2 insulin requiring diabetes. Diagnosed 30 years ago.
- Sleeps a lot. Has to be woken for meals. Poor appetite. Does not participate in any activities. High care.
- Pays full price for blood glucose strips and needles.
- Wt: 58kg. BMI 20 kg/m2 loosing weight. Admission weight 75kg.
- Seen Dietitian and on HPHE supplements. BGL's rise after taking supplements.
- HbA1C 6.5%
- Medication Optisulin 40 units and Novorapid 10 units t.i.d. TDD 70 units.
- Bruising on stomach and signs of lipohypertrophy. Using 8mm needles. RN's use same area on stomach. Right lower quadrant.
- How do we improve his quality of life?

Case Study - Bruce

- Referred to Credentialled Diabetes Educator
- HbA1c low for someone who has had insulin resistance for over 30 years. Suspect high variability and frequent low glucose events.
- Blood Glucose checks before lunch are over 10mmol. Has supplement at morning tea. 1 ½ hours before lunch.
- CDE sends recommendations to GP
- Freestyle Libre trail to check for nocturnal hypoglycaemia
  - Results after 48 hours.
    - Low glucose events 25% of the time
    - Variability 25%

Case Study - Bruce

- Recommendations
  - NDSS registration. Strips now $1.20 per 100 and pen needles free.
  - Insulin review
    - First goal to reduce low glucose events
    - Staff provided with education in regards to rotating injection site. Changed to 4mm pen needles.
    - GP reduced Optisulin as per RACGP guidelines
      - 4 units reduction every day until nocturnal hypoglycaemia stopped.
      - Optisulin reduced from 40 to 10 units a day
    - GP used sliding scale for Novorapid. Was reduced to 1 – 4 units at meals.

Bruce – 2 weeks later

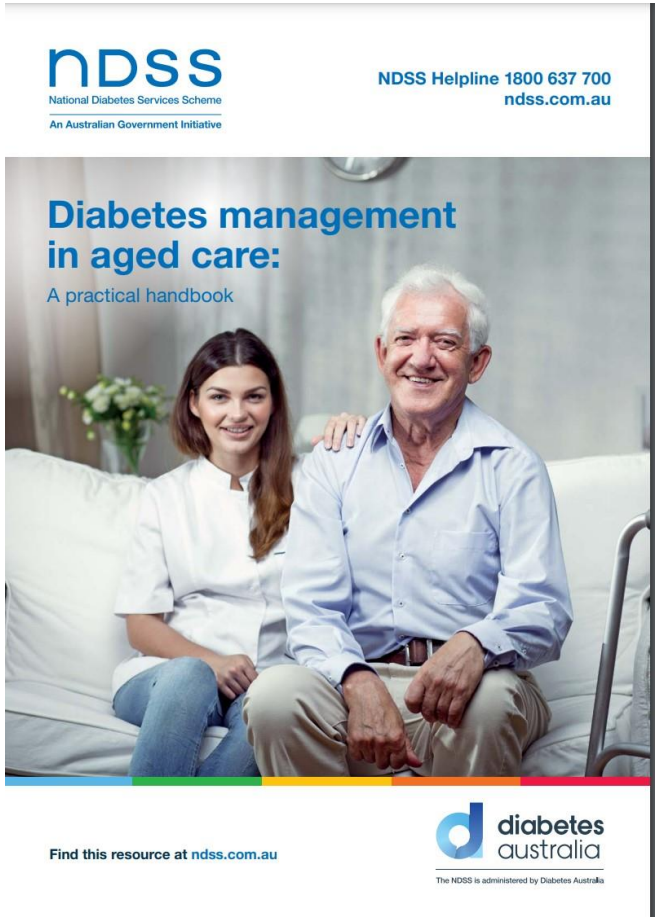
- Libre report 80% time in range, no low glucose events and variability now 25%.
- Bruce now alert and eating meals in dinning room
- Bruce participating in daily activities with other residents
- Dietitian review showed steady weight gain and plan to stop supplements when BMI reaches over 24 kg/m2
- Less staff required for his daily needs. He now feeds himself.

Bruce – 3 months later

- HbA1C: 7.2%.
- Supplements stopped. BMI 24 kg/m2 and stable
- Bruce no longer having UTI's.
- BGL's guidelines changed. On waking aiming for between 6 – 8mmols and before bed under 15mmols.
- Novorapid stopped. Optisulin stopped. Changed to Ryzodeg 70. 10 units with lunch.
- Bruce is happy with money he has saved with NDSS registration and now only has one injection a day

Diabetes Management in Aged care

- National Diabetes Services Scheme developed a handbook in 2016
- Based on the 2014 McKellar Guidelines for managing diabetes in the older person
- Free via NDSS
  - https://www.ndss.com.au/about-diabetes/resources/find-a-resource/diabetes-management-in-aged-care/



Diabetes yearly review in RACF

- Age is a non modifiable risk factor for Type 2 diabetes.
- Yearly screening of all residents to check for undiagnosed
  - Type 2 diabetes
  - Type 1 diabetes
  - LADA
- Yearly review of all residents with diabetes to ensure care meets requirements

NDSS
National Diabetes Services Scheme
An Australian Government Initiative

NDSS Helpline 1800 637 700
ndss.com.au

Quality Review Tool

Management of residents who have diabetes

Date completed:

Review conducted by:

Certain policies and procedures must be in place in residential aged care facilities, in line with evidence based practice, for residents with diabetes. Attached is a tool to assist you to assess the quality of the management and care of residents diagnosed with diabetes in your facility. This tool is consistent with the Aged Care Quality Standards.

All evidence should be documented in this checklist.

If the quality review identifies policies and procedures that could be improved, these should be noted in the 'Action plan' part of the checklist. The following resources may be useful in bringing these up to the required standard:

- Diabetes Management in Aged Care: A Practical Handbook
- The McKellar Guidelines for Managing Older People with Diabetes in Residential and Other Care Settings
- The McKellar Way – how to use the McKellar guidelines for managing older people with diabetes in residential and other care settings.

For more information, call the NDSS Helpline on **1800 637 700**, email **ndss@diabetesaustralia.com.au** or visit the website **ndss.com.au**.

Find this resource at ndss.com.au

diabetes australia

Further education

- Diabetes Qualified
  - https://www.diabetesqualified.com.au/learning/healthcare-workers/
  - Online courses and also certificate courses
    - 2 hour course on diabetes for aged care workers
    - Chronic Disease Self management
    - Administer and Monitor Medication Skill set – online and also hand on.
    - Diabetes in Practice for Nurse

Questions

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