Diabetes management in aged care facilities

Meeting the challenges

ROSEMARY SHEEHY MB BS(Hons 1), BSc(Med)(Hons 1), FRACP

Optimal care of people with diabetes in residential aged care facilities requires an integrated team approach, best co-ordinated by the person's GP. Careful assessment, individualisation of HbA_{1c} and other care goals, frequent review, maintenance of nutrition and mobility, safe prescribing and avoidance of hypoglycaemia are important components of care.

Key points

- **Diabetes is a common disease that GPs will encounter in patients in institutional care, particularly residential aged care facilities (RACFs).**
- **Patients with diabetes benefit from a team approach to management.**
- **Effective use of Medicare-supported services, including telehealth, should encourage more GPs to manage RACF residents.**
- **The approach to diabetes management should be tailored to the individual people with and their situation.**
- **Institutions are not all the same: in-house staffing, supports and services vary and need to be well understood to manage chronic diseases well.**
- **In very elderly people with a short life expectancy, excessively tight diabetes control is inappropriate.**
- **Deprescribing can be difficult but should be considered for every older person with diabetes in institutional care.**

The prevalence of diabetes, both diagnosed and undiagnosed, increases with age.[1] US data for 2012 show a 25.9% prevalence rate in people aged 65 years or older.[2] In Australia, 50% of people registered with the National Diabetes Services Scheme are aged 65 years or older.[1] The most recent Australian data on leading causes of death show that in the 10 years since 2003, diabetes has climbed from ninth to sixth position.[3] Diabetes was the third most common problem that GPs managed in patients in residential aged care facilities (RACFs), after dementia and urinary tract infection, both of which are also associated with diabetes.[4]

The 2011 Australian census found that 6% of people aged 65 years and over live in nonprivate dwellings, such as RACFs (nursing homes and hostels), boarding houses, private hotels, psychiatric hospitals or institutions, corrective institutions and group homes.[5] There are challenges for GPs providing care to older people with diabetes living in RACFs, some related to the age of the patients and their comorbidities, and others to the institutional setting. Optimal management of patients with diabetes involves a team approach with the GP co-ordinating care. Team members may include nursing staff, family and other care providers, diabetes educators, diabetes outreach services, allied health professionals and relevant subspecialists. Outlined here are some of these challenges, suggestions to help and recommended resources (see Box 1).[6-14]

ENDOCRINOLOGY TODAY 2015; 4(5): 15-20

Dr Sheehy is a Senior Staff Specialist in the Sydney Local Health District; a Community Geriatrician and Endocrinologist in Sydney; Clinical Senior Lecturer in the Central Clinical School of the University of Sydney; and a Member of the NSW Ombudsman's Reviewable Deaths Advisory Panel, Sydney, NSW.

1. Resources for managing people with diabetes living in RACFs

Diabetes-specific resources

- International Diabetes Federation. *IDF Global Guideline for Managing Older People with Type 2 Diabetes.* Brussels: IDF; 2013[6] Detailed guidelines that include a section on RACF residents (http://www.idf.org/global-guideline-type-2-diabetes-2012).
- Dunning T, Savage S, Duggan N. *The McKellar Guidelines for Managing Diabetes in Residential Aged Care Centres.* Geelong: Barwon Health Centre for Nursing and Allied Health Research; 2013[7] (http://www.adma.org.au/clearinghouse/doc_details/133-the-mckellar-guidelines-for-managing-older-people-with-diabetes-in-residential-and-other-care-settings_9dec2013.html).
- Royal Australian College of General Practitioners, Diabetes Australia. *General Practice Management of Type 2 Diabetes 2014–15.* Melbourne: RACGP, Diabetes Australia; 2014[8] This regularly updated publication is not specific for older people but includes a section on managing diabetes in terminal care (http://www.diabetesaustralia.com.au/for-health-professionals/diabetes-national-guidelines/#diabetes-management-in-general-practice).

General resources for managing RACF residents

- Royal Australian College of General Practitioners. *A Best Practice Guide for Collaborative Care between General Practitioners and Residential Aged Care Facilities.* Melbourne: RACGP; 2013[9] (http://www.racgp.org.au/your-practice/business/tools/support/best-practice-guide).
- Australian Government Department of Health and Ageing. *Guiding Principles for Medication Management in Residential Aged Care Facilities.* Canberra: Commonwealth of Australia; 2012[10] (http://www.health.gov.au/internet/main/publishing.nsf/content/nmp-pdf-resguide-cnt.htm).
- NPS MedicineWise. *Stopping Medicines*. Sydney: National Prescribing Service; 2013[11] (http://www.nps.org.au/topics/ages-life-stages/for-individuals/older-people-and-medicines/for-health-professionals/medicines-management/stopping-medicines).
- Screening Tool of Older People's Potentially Inappropriate Prescriptions (STOPP) and Screening Tool to Alert Doctors to the Right Treatment (START)[12-14] These criteria are more recent than the Beers criteria and have the advantage of addressing undertreatment as well as use of medications that are potentially inappropriate.

Abbreviation: RACF = residential aged care facility.

Challenges in managing RACF residents

Helping more GPs to provide care in RACFs

Only a proportion of GPs provide care to RACF residents. For example, in the latest census of GPs in the Sydney Inner West Medicare Local, 23% of 874 reported that they attended RACF residents (unpublished data). With the ageing of the baby boomers in the next 10 years, the number of RACF residents is projected to increase from approximately 160,000 to 250,000.[15] One of the greatest challenges may be ensuring that there are adequate numbers of visiting GPs competent to provide care to people with diabetes and other chronic conditions living in RACFs. Appropriate numbers of adequately experienced nursing and allied health staff will also be essential.[16] Some large aged care providers, such as Bupa, directly employ in-house medical officers with the aim of providing more available and integrated care.[17]

The provision of specific Medicare items for services such as telehealth, as well as comprehensive medical assessments, care plans, allied heath referrals and case conferencing, has not yet overcome GP reluctance to provide care in RACFs. People living in RACFs and people attending Aboriginal Medical Services are entitled to Medicare-funded telehealth services in metropolitan Australia. However, only 221 RACFs provided telehealth services by March 2014.[18]

GPs who have no experience in telehealth should consider undertaking the excellent training provided by the Australian College of Rural and Remote Medicine.[19] The RACGP guidelines for GPs working in RACFs and resources from individual Primary Health Networks, such as HealthPathways, can help GPs develop a system that works well for themselves.[9]

Having the information needed for patient care

The discharge of an older person from hospital directly to an RACF for respite or permanent placement often necessitates a change of GP. The new GP and RACF staff require a comprehensive discharge summary from the hospital. This should include reports of all relevant investigations and geriatric and cognitive assessments, medication review, specialist consultations and involvement of other services, an ongoing plan of care and outcomes of advance care discussions. Gathering medical records from multiple sources can be frustratingly difficult, and the interface between hospital and community can feel like a brick wall. Hospital staff in charge of discharge planning should contact the treating GP about the patient's diagnoses, progress in hospital, planned discharge to the RACF and any follow-up arrangements. The Personally Controlled Electronic Health Record (PCEHR) currently being rolled out by the Australian Government should help provide the information required.

Accessing rapid referral pathways

Finding whom to contact and how to reach them should be the work of a minute when a sick RACF resident needs hospital admission or emergency department (ED) review. To speed the hospital or ED admission process, I recommend that clinicians get to know their local health district hospital staff and carry the telephone and email contact details for the ED, admitting officer and relevant subspecialty teams. For diabetes this could include endocrinologists, the diabetes centre, diabetes educator, high-risk foot clinic or podiatry services, vascular surgeon, geriatricians (who often actually admit older patients), eye clinic and interpreter services.

RACF residents represent a significant number of ED presentations, often for recurrent and potentially remediable or locally manageable issues. One quarter of the 165,000 Australian permanent RACF residents at 30 June 2011 had been hospitalised in the preceding 12 months.[20] Hospitals and local health districts have trialled innovative outreach programs to reduce inappropriate hospital and ED referrals by improving care in RACFs. An issue is inadequate assessment; for nurses in RACFs, being unable to access a GP to assess a sick resident can precipitate hospital transfer. An example of a program that aims to maximise resident-centred care and avoid inappropriate hospital transfers is the Comprehensive Aged Residents Emergency and Partners in Assessment, Care and Treatment (CARE-PACT) program in Queensland.[21] Early development of an advance care directive is an important component of this approach. Ideally, an advance care directive should be in place before a person is admitted to an RACF.

Some practice tips for GPs managing residents of RACFs are summarised in Box 2.

2. Practice tips for GPs managing residents of RACFs

- Easy access to hospital and outreach services and effective communication are essential to good care
- Get to know your local hospital and service providers and update your health provider database regularly
- Attend diabetes educational sessions if you have time
- Institutions are not all the same – develop an understanding of staff–client ratios, supports and services to manage patients with diabetes and other chronic diseases well
- Be realistic with your requests of staff
- Maintain a Multidisciplinary Care Plan to support five allied health visits (usually podiatry) annually

Abbreviation: RACF = residential aged care facility.

Coping with staffing variations in different types of institution

The level of care and support provided in the different types of long-term accommodation varies greatly and directly affects medical care options. GPs who provide services in different types of facility need to understand the team structure and practical realities of care. The trained care available in an RACF is different to that available in a licensed boarding house or group home. Multidisciplinary care plans allow five Medicare-funded allied health visits per year, but these are often not sufficient to support diabetes care for patients in institutions. Calls for an increase to 12 visits appear realistic, to enable individuals to access more frequent visits to a diabetes educator, podiatrist, dietitian, physiotherapist and other services when required.

Ratios of experienced staff to residents vary greatly between the different accommodation settings, as do the requirements for registered nurses to be present and times of day they are present. To date, proposals from the Australian Nursing and Midwifery Federation to legislate minimum nursing staffing levels have not been successful.[22] Group homes providing accommodation for people with a disability or a mental illness may not have registered nurses on site but usually have clear diabetes management guidelines for staff. Assisted boarding houses are not required to have a staff member with even first aid training, yet may have frail older unwell residents. If GPs believe that the care needs of an older person are not being appropriately managed then the patient can be referred to the Aged Care Assessment Team to determine what additional services are required or whether RACF entry is necessary.

Hospital staff discharging frail older patients or young patients with a disability who were started on insulin while in hospital may not understand that trained staff are not available to administer insulin or monitor blood glucose levels in the destination facility. Group homes or assisted boarding houses may have been erroneously identified as hostels or nursing homes during the admission. Even if an older person with diabetes is discharged home, it is essential that there is a cognitively competent and willing person available to ensure safe insulin use. Liaison with community nurses, the diabetes centre and an outreach or hospital in the home program may be necessary. A change to the lowest possible dose of long-acting single daily dose insulin is helpful.

Diabetes-specific management challenges

Diabetes is a complex disease to manage regardless of the care setting. The glycosylated haemoglobin (HbA_{1c}) and other care goals must be personalised to suit the individual and ideally set through negotiations with the individual and/or their carers. The usual intensive approach to diabetes management that would be applied in a young woman with gestational diabetes is not appropriate for a 95-year-old person with dementia living in an RACF or a middle-aged person with ischaemic heart disease. The Australian Diabetes Society has produced a position statement on individualisation of HbA_{1c} targets.[23]

The principles of diabetes management are the same for all patients: diet, exercise and, where necessary, medications. In my experience, medications alone usually do not control blood glucose level adequately. In part, this is because people rely on them and assume they do not need to exercise or comply with reasonable dietary controls. Although older people predominantly have type 2 diabetes, patients with type 1 diabetes are now surviving to old age and type 1 diabetes can also be diagnosed for the first time in older people. In addition, some younger people with type 1 or type 2 diabetes live in group homes and other institutions for young people with disabilities, and may be in institutional care for four or more decades of life. So the GP's approach will need to adapt to the individual person.

Diabetes has well-known multisystem complications, including ischaemic heart disease, heart failure, stroke, dementia, renal impairment, neuropathic pain, depression and eye disease. The multiple medications required to manage these complications, combined with glucose-lowering medicines, result in polypharmacy and create a high risk of adverse drug interactions. Deprescribing may be appropriate (see below). In addition, in managing older patients with

3. Atypical presentations in older people with diabetes

GPs should be alert for the following atypical presentations which are common in older people with diabetes:

- stroke that is mistaken hypoglycaemia
- acute myocardial infarction presenting as congestive cardiac failure or new atrial fibrillation
- heart block presenting as syncope or new fracture
- severe constipation presenting as urinary incontinence or acute renal failure
- cerebral tumour or haemorrhage presenting as a presumed hypoglycaemic seizure
- pancreatic cancer presenting as increasing glucose levels (or hypoglycaemia if an insulinoma)
- unrecognised hypoglycaemia or hyperglycaemia presenting as delirium

diabetes living in RACFs, it is wise to expect the unexpected as atypical presentations are common (Box 3).

Translating published treatment outcomes to the real world

My approach to diabetes management for elderly people in institutional care is 'safety first'. In an Australian Government review in 2012, 77% of RACF residents were aged 80 years or over, 57% were aged 85 years or over, and most had multiple comorbidities.[20] From that report, average survival for residents in Australian RACFs (nursing homes and hostels) was almost three years, but 27% of people died within six months of entry, and nearly 40% in the first year.

The rationale for a conservative HbA_{1c} goal (about 64 mmol/mol or 8%) is based on weighing up the likely life expectancy versus time required to prevent diabetes complications developing. When expected survival is very short (e.g. one to three years), I treat diabetes for symptom control. In reality, this means aiming to relieve thirst, malaise, polyuria, urinary frequency, dehydration and fungal infections and to prevent further deterioration in complications, which are usually already present.

Selecting medications and dosage

Nothing good is to be gained from maximising the doses of oral agents for diabetes in older people. Two thirds of the maximal dose will usually achieve similar results with a reduced risk of side effects.

Metformin has maintained its position as a drug of choice in diabetes. However, it is important to check the patient's vitamin B_{12} level every one to two years, as vitamin B_{12} deficiency is known to be associated with metformin use. Lactic acidosis, although uncommon, is very serious. If renal function deteriorates then the metformin dose should be reduced. I discontinue metformin if serum creatinine level is over 150 μmol/L or the estimated glomerular filtration rate (eGFR) is less than 30 mL/min.

Although I continue to prescribe oral sulfonylureas (e.g. gliclazide, glimepiride) to older people with diabetes, there is emerging evidence of a risk of heart failure with their use, suggested to be similar to the risk with rosiglitazone.[24] Of the sulfonylureas, I prescribe gliclazide more often as it does not have an active second metabolite. I do not prescribe glibenclamide in older people because of its high potency and longer half-life.

Dipeptidyl peptidase-4 (DPP4) inhibitors have the advantage of a reduced risk of hypoglycaemia and are often prescribed in the elderly age group. Sitagliptin requires dose reduction in patients with renal impairment. Recent studies have flagged a possible association between saxagliptin and heart failure. In contrast, the Trial Evaluating Cardiovascular Outcomes with Sitagliptin (TECOS) has shown good cardiovascular safety data for sitagliptin over a median of three years.[25]

Sodium-glucose cotransporter-2 (SGLT2) inhibitors are not appropriate for most older people, given the manufacturer's advice that dapagliflozin is contraindicated if the eGFR is less than 60 mL/min, and canagliflozin requires dose reduction. There are other worrying risks in the frail elderly, particularly volume depletion, falls and urinary incontinence, as well as recent reports of ketoacidosis without significant hyperglycaemia, and myalgia.

Although pioglitazone is an effective agent, I do not often prescribe it in older people. Pioglitazone is associated with a risk of peripheral oedema, heart failure, distal fractures and macular oedema.[26,27] The fracture risk increases with age.[28] Bladder cancer risk was previously flagged, although subsequent studies have disputed this.[29]

We continue to inappropriately delay the introduction of insulin. Starting insulin is usually straightforward in RACF residents, but managing insulin regimens is not always so easy. After appropriate discussions with and agreement from the patient or person responsible, start with low-dose insulin glargine (e.g. 6 units subcutaneously). Check with staff about the timing of the injection to ensure a registered nurse is available, and increase the dose progressively until the fasting blood glucose level is regularly less than 8 mmol/L. This is usually an opportune time to discontinue or reduce the dose of sulfonylureas or DPP4 inhibitors. I usually try to maintain a small dose of metformin. If HbA_{1c} is still more than 75 mmol/mol (9%) with a dose of 50 units of insulin glargine, I either change to fixed mixed insulin or add small mealtime doses of short-acting insulin. I usually check HbA_{1c} and serum electrolytes, urea and creatinine levels every six months. Nondiabetes-related testing depends on the indications. I do not generally check the urine albumin to creatinine ratio in RACF residents.

Deprescribing

Although diabetes can present at any age, most older RACF patients have had type 2 diabetes for many years and are likely to have some of the following: ischaemic heart disease, peripheral vascular disease with risk of foot ulceration, stroke, neuropathy, dementia, depression, renal impairment, obesity or underweight and poor vision. As well, anaemia, atrial fibrillation, chronic obstructive pulmonary disease, gastro-oesophageal reflux disease, osteoarthritis, osteoporosis,

4. Practice tips on hypoglycaemia

- Older people do not cope well with hypoglycaemia
- Hypoglycaemia in older people can have an atypical presentation, so always check blood glucose level to exclude it
- Chronic recurrent hypoglycaemia is very likely when HbA_{1c} is less than 31 mmol/mol (5%) and the patient is using insulin or oral agents other than metformin and dipeptidyl peptidase-4 inhibitors

obstructive sleep apnoea and malignancy may be present.

Older Australians with diabetes are often prescribed many of the 10 most commonly prescribed medications, particularly statins, paracetamol, antihypertensives and esomeprazole, in addition to their diabetes medications. Daily total medication numbers can be astounding. Polypharmacy increases the risk of adverse drug interactions, falls and confusion.

Deprescribing can be difficult to achieve but is recommended. An outline on how to proceed is available on the NPS MedicineWise website (http://www.nps.org.au/topics/ages-life-stages/for-individuals/older-people-and-medicines/for-health-professionals/medicines-management/stopping-medicines).[30] The Screening Tool to Alert doctors to Right Treatment (START) and Screening Tool of Older Person's Prescriptions (STOPP30) are also helpful in deprescribing.[12-14]

Monitoring blood glucose

In most high-care RACFs, blood glucose levels are usually checked daily, or twice daily when the person is treated with insulin, commonly before insulin doses. However, in other types of accommodation, blood glucose levels may be checked only daily (often in the morning) or infrequently in assisted boarding houses. If GPs are concerned about fluctuating glucose patterns then they can request a short-term change to more frequent or different testing times in RACFs. Changes such as the introduction of percutaneous endoscopic gastrostomy (PEG) tube feeding or frequent hospitalisation should prompt more frequent testing. I recommend clinicians carry their own back-up glucometer.

Recognising and avoiding hypoglycaemia

Hypoglycaemia has very negative effects in older people. The Action to Control Cardiovascular Risk in Diabetes (ACCORD) Study was stopped early because of cardiovascular episodes associated with tight diabetes control in older people (aged over 65 years).[31] Hypoglycaemia is a significant cause of death and disability, leading to impaired cognition in the short term and dementia in the long term. Some practice tips on hypoglycaemia in older people with diabetes are summarised in Box 4.

GPs should be alert for atypical presentations of hypoglycaemia. Hypoglycaemia should be considered and excluded for patients presenting with falls and fractures, mini-strokes, seizures, aggression/behaviour change, new or worsening 'dementia', delirium, failure to thrive, daytime somnolence, sweating, nocturnal insomnia or agitation, palpitations and headaches. Older and some younger people may have no or limited hypoglycaemia awareness. When in doubt, rule out hypoglycaemia by checking the blood glucose level and also review HbA_{1c}.

Table. Relation between HbA_{1c} and average blood glucose level[32]

HbA_{1c}		Estimated average blood glucose level (mmol/L)
(%)	(mmol/mol)	
4	20	~3.3
5	31	5.4
6	42	7.0
7	53	8.6
8	64	10.2
9	75	11.8
10	86	13.4
11	97	14.9
15	140	~20
20	195	~30

Remember that an elevated HbA_{1c} does not exclude hypoglycaemia. The relation between HbA_{1c} and estimated average blood glucose level is shown in the Table.[32] For HbA_{1c} readings below 42 mmol/mol (6%), the average blood glucose level drops rapidly, making the risk of hypoglycaemia very high.

Identifying concerning causes of altered diabetes control

Substantial falls in HbA_{1c}

Clinicians who see a drop in HbA_{1c} may be tempted to congratulate themselves on good diabetes management. However, it is important to step back and consider the whole picture. Falling weight, poor nutritional intake, deteriorating renal or liver function, the development of hypothyroidism and a reduction in corticosteroid dosage should be checked for and managed. Excessive exercise (e.g. continual pacing, chronic tremor or another movement disorder) can also produce excessively tight control. Such patients require increased nutritional support.

As is shown in the Table, for an HbA_{1c} of 31 mmol/mol (5%), the average blood glucose level in the previous two to three months is approximately 5.4 mmol/L, making recurrent hypoglycaemia very likely. When HbA_{1c} is less than 53 mmol/L (7%) or weight is decreasing rapidly, the doses of hypoglycaemic agents should be reduced and the blood glucose level should be monitored to assess whether a further reduction or cessation is required. Also, if the HbA_{1c} is unexpectedly low then anaemia should be excluded (although iron deficiency without anaemia can increase HbA_{1c}).[33]

Substantial increases in HbA_{1c}

Similarly, a rising HbA_{1c} should always prompt review. Although the most likely cause is pancreatic endocrine failure, it is important to exclude marked weight gain, medication omission or error, dietary factors, infection, thyrotoxicosis, pancreatic malignancy or the addition of medications, particularly corticosteroids. A more detailed list of possible causes of increasing HbA_{1c} is available at the NPS MedicineWise website.[34] Alcohol intake should be queried for residents who can leave the premises.

The commencement of PEG or nasogastric feeding is also a time of likely deterioration in glycaemic control or initial presentation of diabetes. If there has been a period of very poor oral intake before starting nasogastric or PEG feeding, the patient will also be at high risk of refeeding syndrome. Dietitian support is essential for these patients. Be very cautious about an elderly person discharged from hospital soon after PEG or nasogastric tube insertion, as their blood glucose level can rise rapidly, particularly if there is pre-existing diabetes. This also depends on the type of feed used. Clinicians should ask institution staff to monitor blood glucose levels more frequently in the short term and to contact them if levels are over 15 mmol/L. Insulin may need to be started immediately.

Diabetic ketoacidosis is uncommon in the elderly population. Hyperosmolar hyperglycaemic state (HHS) is usually seen in older people with type 2 diabetes when an intercurrent illness has reduced fluid intake. Infections, particularly chest and urinary infections, are common causes. However, PEG or nasogastric feeding can also induce HHS. Diabetic ketoacidosis and HHS are life-threatening, and patients require prompt treatment in hospital.

Differentiating causes of dementia

Dementia is a common association with diabetes. Brain imaging often shows a combination of cerebral atrophy, lacunes and chronic small vessel ischaemic changes. Behaviour disturbance can feature prominently and can easily be misdiagnosed as related to hypoglycaemia, and vice versa.

It is always essential to look for potentially reversible causes of dementia. Vitamin B_{12} deficiency leads to dementia. It can be due to nutritional deficiency or malabsorption (e.g. pernicious anaemia) but is also associated with metformin use. Hypothyroidism can also present as a dementing illness.

For patients with behaviour disturbance, highly specialised advisory services such as the Australian Government Dementia Behaviour Management Advisory Service (DBMAS) can provide institutional support.

Managing mental illness

Diabetes is associated with a higher incidence of depression. The incidence of diabetes is increased in people with major mental illness, both by the effects of the illness on mobility and dietary control and by the medications required for treatment. Smoking is also more common in people with mental illness and increases the risk of developing type 2 diabetes, as well as the risk of diabetes complications and malignancy. A detailed review of this important topic is beyond the scope of this article.

Knowing how far to go in diabetes management

Given the likely life expectancy of people who require nursing home level of care, it is usually not appropriate to pursue an intensive approach to diabetes management. For a patient who may previously have been regularly reviewed by an endocrinologist, cardiologist, renal physician, ophthalmologist and neurologist, the withdrawal of this care can be confronting and require a period of adjustment.

An increasing number of older Australians now have an advance care directive and enduring guardian appointment in place. However, in my experience, it is the people who most need these who have never considered them. The first six months after admission to institutional care is the most appropriate time to discuss and agree on a strategy for end-of-life care. Considering end-of-life issues in the stress and bustle of an emergency department with staff who are not personally known to the person or family is less than ideal but has often become the default. More advice on palliative and end-of-life care for patients with diabetes is available in a review in the February 2015 issue of *Endocrinology Today*.[35]

An advance care directive will guide the clinician's approach to end-of-life care, but until that time, most people in institutional care reasonably expect that if they are acutely ill and not improving with conventional management then they will be transferred to hospital. In the absence of outreach programs or telehealth access, patients with acute severe illnesses such as chest pain, new stroke or delirium, falls with suspected major fractures, diabetic ketoacidosis or HHS, limb ischaemia, sepsis not improving with oral antibiotics and major organ failure require hospital referral.

Preventing diabetes in family members

Clinicians are likely to meet the families of their patients frequently in RACFs and so have the opportunity to advise children and grandchildren of older people with diabetes about their individual risk of developing diabetes. There is rarely a better time to discuss strategies to prevent the development of diabetes.

Conclusion

Maintaining the care of a patient you have managed in your office or their home for many years is often greatly appreciated by the patient and their family. Taking over care in an institutional setting requires an integrated approach. Careful assessment, frequent review, sensible goals, use of a team approach, maintaining nutrition and mobility, safe prescribing and avoidance of hypoglycaemia are all essential components of diabetes management in institutional care. **ET**

References

A list of references is included in the website version (www.medicinetoday.com.au) of this article.

COMPETING INTERESTS: None.

Diabetes management in aged care facilities

Meeting the challenges

ROSEMARY SHEEHY MB BS(Hons 1), BSc(Med)(Hons 1), FRACP

References

1. Australian Institute of Health and Welfare. How many Australians have diabetes? Canberra: AIHW; 2015. Available online at: http://www.aihw.gov.au/how-common-is-diabetes/ (accessed October 2015).
2. Centers for Disease Control and Prevention. National diabetes statistics report: estimates of diabetes and its burden in the United States, 2014. Atlanta, GA: US Department of Health and Human Services; 2014. Available online at: http://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf (accessed October 2015).
3. Australian Bureau of Statistics. Causes of death Australia 2012. ABS 3303.0. Available online at: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/3303.0~2012~Main%20Features~Introduction~10000 (accessed October 2015).
4. O'Halloran J, Britt H, Valenti L. General practitioner consultations at residential aged-care facilities (The Beach Study). Med J Aust 2007; 187: 88-91.
5. Australian Bureau of Statistics. Where and how do Australia's older people live? Reflecting a nation: stories from the 2011 census. 2012-2013. Available online at: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2071.0main+features602012-2013 (accessed October 2015).
6. International Diabetes Federation. IDF global guideline for managing older people with type 2 diabetes. Brussels: IDF; 2013. Available online at: http://www.idf.org/global-guideline-type-2-diabetes-2012 (accessed October 2015).
7. Dunning T, Savage S, Duggan N. The McKellar guidelines for managing diabetes in residential aged care centres. Geelong: Barwon Health Centre for Nursing and Allied Health Research; 2013. Available online at: http://www.adma.org.au/clearinghouse/doc_details/133-the-mckellar-guidelines-for-managing-older-people-with-diabetes-in-residential-and-other-care-settings_9dec2013.html (accessed October 2015).
8. Royal Australian College of General Practitioners, Diabetes Australia. General practice management of type 2 diabetes 2014–15. Melbourne: RACGP, Diabetes Australia; 2014. Available online at: http://www.diabetesaustralia.com.au/for-health-professionals/diabetes-national-guidelines/#diabetes-management-in-general-practice (accessed October 2015).
9. Royal Australian College of General Practitioners. A best practice guide for collaborative care between general practitioners and residential aged care facilities. Melbourne: RACGP; 2013. Available online at: http://www.racgp.org.au/your-practice/business/tools/support/best-practice-guide (accessed October 2015).
10. Australian Government Department of Health and Ageing. Guiding principles for medication management in residential aged care facilities. Canberra: Commonwealth of Australia; 2012. Available online at: http://www.health.gov.au/internet/main/publishing.nsf/content/nmp-pdf-resguide-cnt.htm (accessed October 2015).
11. NPS MedicineWise. Stopping medicines. Sydney: National Prescribing Service; 2013. Available online at: http://www.nps.org.au/topics/ages-life-stages/for-individuals/older-people-and-medicines/for-health-professionals/medicines-management/stopping-medicines (accessed October 2015).
12. Gallagher P, Ryan C, Byrne S, Kennedy J, O'Mahony D. STOPP (Screening Tool of Older Person's Prescriptions) and START (Screening Tool to Alert doctors to Right Treatment). Consensus validation. Int J Clin Pharmacol Ther 2008; 46: 72-83.
13. Hamilton HJ, Gallagher PF, O'Mahony D. Inappropriate prescribing and adverse drug events in older people. BMC Geriatrics 2009; 9: 5.
14. Barry PJ, Gallagher P, Ryan C, O'Mahoney D. START (screening tool to alert doctors to the right treatment) – an evidence-based screening tool to detect prescribing omissions in elderly patients. Age Ageing 2007; 36: 632-638.
15. Willett B. The future of aged care nursing in Australia. HealthTimes 2015; 27 May. Available online at: http://healthtimes.com.au/hub/aged-care/2/news/nc1/the-future-of-aged-care-nursing-in-australia/495 (accessed October 2015).
16. Saunders C; General Practice NSW. Submission to Productivity Commission Inquiry: caring for older Australians. Sydney: GP NSW; 2010.
17. Bupa Care Services Australia (Aged Care). Available online at: http://www.bupaagedcare.com.au (accessed October 2015).
18. MBS Online Medicare Benefits Schedule. Telehealth statistics (last updated 4 February 2014). Available online at: http://www.mbsonline.gov.au/telehealth (accessed October 2015).
19. Australian College of Rural and Remote Medicine (ACRRM). eHealth [website]. Available online at: http://www.ehealth.acrrm.org.au (accessed October 2015).
20. Australian Institute of Health and Welfare. Residential aged care in Australia 2010–11: a statistical overview. Aged care statistics series no. 36. Cat. no. AGE 68. Canberra: AIHW; 2012.
21. Burkitt E, Scott I. CARE-PACT: a new paradigm of care for acutely unwell residents in aged care facilities. Aust Fam Phys 2015; 44: 204-209.
22. Australian Nursing Federation. Budget submission 2010-2011. Because we care: quality care for older Australians. Melbourne: ANF; 2009. Available online at: http://anmf.org.au/documents/submissions/Sub_Budget_2010_11.pdf (accessed October 2015).
23. Australian Diabetes Society. Australian Diabetes Society position statement: individualisation of HbA_{1c} targets for adults with diabetes mellitus. Sydney: ADS; 2009. Available online at: https://diabetessociety.com.au/position-statements.asp (accessed October 2015).
24. Gilbert R, Krum H. Heart failure in diabetes: effects of anti-hyperglycaemic drug therapy. Lancet 2015; 385: 2107-2117.
25. Green JB, Bethel MA, Armstrong PW, et al; TECOS Study Group. Effect of sitagliptin on cardiovascular outcomes in type 2 diabetes. N Engl J Med 2015; 373: 232-242.
26. Graham DJ, Quellet-Hellestom R, MaCurdy TE, et al. Risk of acute myocardial

infarction, stroke, heart failure and death in elderly Medicare patients treated with rosiglitazone or pioglitazone. JAMA 2010; 304: 411-418.
27. Idris I, Warren G, Donnelly R. Association between thiazolidinedione treatment and risk of macular edema among patients with type 2 diabetes. Arch Intern Med 2012; 172: 1005-1011.
28. Jones SG, Momin SR, Good MW, Shea TK, Patric K. Distal upper and lower limb fractures associated with thiazolidinedione use. Am J Manag Care 2009; 15: 491-496.
29. Wei L, MacDonald TM, Mackenzie IS. Pioglitazone and bladder cancer: a propensity score matched cohort study. Br J Clin Pharmacol 2012; 75: 254-259.
30. Le Couteur D, Banks E, Gnjidic D, McLachlan A. Deprescribing. Aust Prescriber 2011; 34: 182-185.
31. Action to Control Cardiovascular Risk in Diabetes Study Group; Gerstein HC, Miller ME, Byington RP, et al. Effects of intensive glucose lowering in type 2 diabetes. N Engl J Med 2008; 358: 2545-2559.
32. National Glycohemoglobin Standardization Program. HbA_{1c} and estimated average glucose (eAG). Missouri: NGSP; 2010. Available online at: http://www.ngsp.org/A1ceAG.asp (accessed October 2015).
33. English E, Idris I, Smith G, Dhatariya K, Kilpatrick ES, John WG. The effect of anaemia and abnormalities of erythrocyte indices on HbA1c analysis: a systematic review. Diabetologia 2015; 58: 1409-1421.
34. NPS MedicineWise. Medicines that affect blood glucose levels in type 2 diabetes. Sydney: National Prescribing Service; 2011. Available online at: http://www.nps.org.au/conditions/hormones-metabolism-and-nutritional-problems/diabetes-type-2/for-individuals/medicines-and-treatments/medicines-that-affect-blood-glucose-levels (accessed October 2015).
35. Dunning T, Martin P. Palliative and end-of-life care for patients with diabetes. Endocrinol Today 2015; 4(1): 16-20.