

UNIT 3 Core aspects of care

Diabetes care for older people: A practical view on management

Roger Gadsby

Diabetes can impose a substantial health burden on older people and their informal and formal carers. If there is evidence of sub-optimal care planning, a lack of empowerment, or under-skilling of those delivering direct diabetes care to this group, independence of the individual will be under threat. This substantially increases the risk of a serious adverse outcome, such as hospital or care home admission. This article identifies the specific needs, treatments and assessments for functional loss and depression in older people with diabetes living in the community, those living in care homes and those in hospital. It also looks at end-of-life care and managing hypoglycaemia.

In many countries in the developed world more than 25% of people over 65 years of age have diabetes (Kirkman et al, 2012). The most up to date report of the National Diabetes Audit (NDA) suggests that over 50% of those diagnosed with type 2 diabetes in England and Wales are 65 years and over (NHS Digital, 2017). The prevalence of diabetes in care homes in the UK may be as high as one in four residents (Sinclair et al, 2001).

Diabetes in older people has a significant impact on healthcare utilisation and costs. Evidence suggests that older people with diabetes use primary care services two to three times more than their counterparts without diabetes (Damsgaard et al, 1987). People with diabetes are twice as likely to be admitted to hospital compared to people without diabetes. (Sampson et al, 2007). One in six people (17%) occupying hospital beds has diabetes and the vast majority of these are 65 years old and over. In some hospitals in England one in three inpatients has diabetes (NHS Digital, 2016).

It has also been shown that residents of care homes are associated with higher workload for GPs than individuals living in the community (Groom et al, 2000).

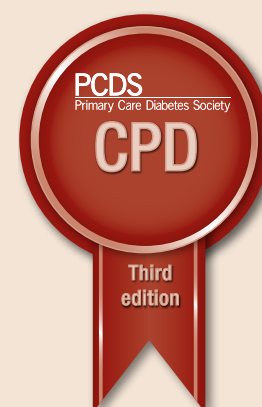
Diabetes care themes that apply to older people across all clinical settings include:

- A clinician mindset that aims to find a diagnosis for illness-related symptoms and provide good-quality care based on the individual's needs.
- A major emphasis on dignity, safety, quality of life and wellbeing for each individual.
- The early and effective use of interventions that can be applied in community settings.
- A commitment to improving or maintaining independence and functional status.
- The avoidance of ageism and a reductionist approach to care.

Influencing diabetes management in older people

Defining key aims and identifying needs

The key aims and needs for the management of older people with type 2 diabetes are presented



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Learning objectives

After reading this article, the participant should be able to:

1. Treat older people with diabetes with an emphasis on dignity, safety, quality of life and wellbeing.
2. Describe the cognitive and geriatric assessment process.
3. Discuss the diagnosis and treatment of depression in older people with diabetes.
4. Describe the optimisation of diabetes therapy in older people with diabetes, taking into account the risk of falls and hypoglycaemia.

Key words

- Carers
- Depression
- End-of-life care
- Functional impairment
- Hypoglycaemia

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“The management of type 2 diabetes is often complicated in older people because of the added effects of ageing on metabolism and renal function, the use of potentially diabetogenic drugs, and low levels of physical activity.”

Box 1. Major aims in managing older people with diabetes.

Medical

- Balance safety and risk by aligning therapy to metabolic disturbance and individual needs
- Minimise polypharmacy
- Prevent undesirable weight loss
- Avoid hypoglycaemia and other adverse drug reactions and interactions
- Detect cognitive impairment, depression and functional disability at an early stage
- Avoid unnecessary hospital admission

Patient-oriented

- Maintain general wellbeing, good quality-of-life and independent living
- Preserve dignity and safety
- Acquire skills and knowledge to adapt to lifestyle changes
- Encourage diabetes self-care
- Risk management (e.g. to reduce the risk of falls)
- Maintain optimal physical and mental performance
- Achieve a normal life-expectancy where possible

in *Box 1* and these can act as a template for developing a care plan. The care plan should be individualised and assessed regularly, as the status of older people can change quickly. Apart from social isolation, socio-economic factors and varying family dynamics, other issues may operate and influence management (see *Box 2*).

The management of type 2 diabetes is often complicated in older people because of the added effects of ageing on metabolism and renal function, the use of potentially diabetogenic drugs, and low levels of physical activity. Cardiovascular risk is particularly high because many risk factors of the “metabolic syndrome” can be present for up to a decade before type 2

diabetes is diagnosed (Alberti et al, 2005). Older people with diabetes have a set of characteristics that reveal a pattern of specific needs (*Box 3*).

Guidelines for the management of older people with type 2 diabetes

The first international guidelines on the management of type 2 diabetes in older people were published by the International Diabetes Federation (IDF) in 2013. They are freely downloadable from the IDF website (IDF, 2013). They give recommendations for all aspects of diabetes care, including assessment, screening, nutrition and physical activity, education and self-management, cardiovascular risk, glucose

Box 2. Factors that may influence diabetes management in older people.

- High medical comorbidity levels
- Frailty and limited life-expectancy
- Physiological ageing and lowered counter-regulation to hypoglycaemia
- Higher frequency of depressive illness or cognitive impairment
- Care home residency
- Reliance on informal or formal carers
- Increased risk of adverse events from multiple medications

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Box 3. Characteristics indicative of specific needs in older people with diabetes.

- Varying evidence of impaired physical function and walking ability
- Increased vulnerability to hypoglycaemia and increased risk of hospital admission
- Increased risk of cognitive dysfunction and mood disorder, making decision-making more difficult for healthcare professionals
- Increased risk of hospital and care home admission
- Increased risk of inpatient mortality

control, blood pressure, inpatient care, foot disease, eye disease and sexual health. The guidelines structure these recommendations as follows:

- Category 1 – those who are functionally independent.
- Category 2 – those who are functionally dependent, owing to either (a) frailty or (b) dementia.
- Category 3 – in end-of-life care, defined as a life expectancy of less than 1 year.

An example using this category system is that of recommendations for glycaemic targets. Here, for functionally independent people, a target HbA_{1c} of 53–59 mmol/mol (7–7.5%) is recommended. For functionally dependent people who are frail or who have dementia, an HbA_{1c} of up to 70 mmol/mol (8.5%) may be appropriate. For those in the last year of life, avoidance of symptomatic hyperglycaemia is the recommended aim.

Type 1 diabetes in older people

Type 1 diabetes can occur at any age and some older people being newly diagnosed with diabetes will have type 1. There are more people living with type 1 diabetes into older age than in the past. Together these factors explain the increasing numbers of older people living with type 1 diabetes. Data from the NDA 2015–16 suggests that around 13–15% of people living with type 1 diabetes are 70 years of age or older (NHS Digital, 2017).

Diabetes UK gives the Nabarro medal to people who have lived for 50 years with type 1 diabetes and awarded 471 of these medals in 2014. It also gives the Lawrence medal to those

living with type 1 for 60 years and the Macleod medal to those living 70 years.

In a review of Nabarro medal holders studied between 1993 and 1996 it was found that they had reasonable, but not ideal, glycaemic control, high HDL-cholesterol, low daily insulin requirements, normal body weight, and lower blood pressures, did not have microalbuminuria, and had a family history of longevity (Bain et al, 2003) There are no specific guidelines for older people with type 1 diabetes but the American Diabetes Association position statement on type 1 diabetes has a short section on older people, which says that management can be challenging because of age-related conditions (memory loss etc.) and diabetes-related complications. It suggests that in some people, less stringent glycaemic targets are appropriate. It also states that hypoglycaemia is the main acute complication of concern, that there is a risk of insulin dosing errors and that declining cognition may contribute to hypoglycaemic unawareness (Chiang et al, 2014).

Functional impairment and the role of comprehensive geriatric assessment

Diabetes is associated with both functional impairment and disability that cannot be solely accounted for by vascular disease. Metabolic disturbance, medication effects and nutritional deficits may superimpose on this to exacerbate functional loss.

A number of studies have identified diabetes as a predictor of functional decline (Gregg et al, 2000a; Volpato et al, 2002; Sinclair et al, 2008), which can manifest itself as changes in activities of daily living (ADL), domestic and leisure abilities or cognitive tests. Falls and fall-related

Page points

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1. Insulin treatment significantly increases the risk of falling in older women with diabetes.
2. Factors that may be involved in the risk of falls are the duration and severity of the diabetes, or possibly a higher rate of hypoglycaemia, which might be unrecognised.
3. Encouraging people to take an active part in lifestyle modification, including rehabilitation, can foster their autonomy, improve their self-esteem and coping skills, and reduce the anxiety and depression associated with disability and functional decline.
4. It is also important to identify individuals who should appropriately be labelled as frail because the aims of care are modified for such people.

fractures are a significant source of morbidity and resultant disability. In people with diabetes, the increased risk of falling is nearly three-fold, and they have a two-fold increase in having a fall that is injurious, with fall-related fractures being more common in women (Schwartz et al, 2002). Factors contributing to falls include problems with gait and balance, as well as neurological and musculoskeletal disabilities. Environmental factors, such as tripping on rugs or ill-fitting slippers, can also play a role.

In addition, in people with diabetes, the high rate of cardiovascular disability, visual deficit, cognitive impairment and treatment-related issues are likely to contribute. Insulin treatment significantly increases the risk of falling in older women with diabetes (Bonds et al, 2006). Factors that may be involved in the risk of falls are the duration and severity of the diabetes, or possibly a higher rate of hypoglycaemia, which might be unrecognised. Clinicians involved in managing older people with diabetes must directly question them about the occurrence of falls and provide an estimate of risk. They may require an education review or additional education. It is important that the teaching method is appropriate to the person's learning style and accounts for cognitive and memory deficits.

Encouraging people to take an active part in lifestyle modification, including rehabilitation, can foster their autonomy, improve their self-esteem and coping skills, and reduce the anxiety and depression associated with disability and functional decline.

It is also important to identify individuals who should appropriately be labelled as frail because the aims of care are modified for such people. Frailty, in this context, represents a vulnerability to a wide range of adverse outcomes secondary

to the effects of ageing, long-term vascular complications of diabetes, physical and cognitive decline, and the presence of other medical comorbidities. Healthcare professionals are often able to define a series of factors, such as recurrent hypoglycaemia, cardiac disease and reduced recovery from metabolic decompensation that underlie a frailty state (Sinclair, 2000).

The annual review process should include an assessment of basic measures of ADL function, including: a Barthel test; tests of cognitive function, such as the Mini-Mental State Examination or Clock Test; a screen for depression, such as the Geriatric Depression Score; and an assessment of gait and balance, which can be simply estimated by the timed "Get Up and Go" test. This involves asking the individual to stand from a chair that has armrests, walk 3 metres, turn, walk back to the chair, and sit down. If this takes longer than 30 seconds, there is evidence of impaired mobility. People with major mobility or falls disorder require referral to a local therapy centre where physical therapy and occupational therapy are available, or to a geriatrician, preferably one who has an interest in diabetes and falls disorder.

Nutritional assessment using "MUST" (the malnutrition universal screening tool) is an important and relatively quick method of assessing nutritional status and should form part of the assessment procedures. This integrated process of assessment – comprehensive geriatric assessment – is suitably applied to people with diabetes meeting the criteria presented in *Box 4*.

The role of carers

There is increasing recognition that informal (unpaid) carers provide considerable, if not the

Box 4. Criteria for referring people with type 2 diabetes for comprehensive geriatric assessment.

- Presence of a geriatric syndrome, elements of which can include confusional state, depression, falls, incontinence, immobility and pressure sores
- Presence of several coexisting morbidities and complex drug regimens
- Presence of disabilities resulting from lower-limb vascular disease or neuropathy requiring a rehabilitation programme in the absence of a terminal illness or dementing syndrome
- Increasing frailty

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Box 5. A summary of the optimal content of informal carer “support packages” (Sinclair et al, 2010).

- Information about the essentials of diabetes as a medical disorder
- Practical guidance on the following:
 - Monitoring of blood glucose and urinary glucose
 - Insulin administration where appropriate
 - Dietary advice
 - Exercise and lifestyle “desirable” practices
 - Carer management of hypoglycaemia, worsening glycaemic control of the person with diabetes, and management of “sick days”
- Information about local diabetes teams and other healthcare professionals involved in diabetes care, including contact persons and telephone numbers
- Information about community and neighbourhood services and social services that are available locally to support older adults with diabetes from varying ethnic backgrounds and their informal carers
- Information about local ethnic diabetes support groups, which can provide further information and advice regarding living with diabetes and the caring role, and provide a forum and link for networking in any one area

majority of, community-based care in domestic settings and this need is likely to increase dramatically over the next 25 years (Sinclair et al, 2010). At the same time, they appear to be greatly affected by the burden of this responsibility, including lost earnings (as many carers are in the working-age category) and an increased risk of depressive illness.

Apart from direct diabetes care roles, informal carers have a wide range of other care responsibilities including skin and wound care, medication management, dietary provision, financial care and even in-home dialysis where needed. Factors such as other chronic diseases or the presence of physical disability, falls and fractures, or dementia are likely to impose a particularly heavy burden. Carers are also likely to be partners or spouses of the person with diabetes and may have their own health requirements or may need diabetes education.

Reports also suggest that a particularly heavy burden is borne by informal carers among black and minority ethnic groups (Sinclair et al, 2010). Their burden may involve issues such as a more significant lack of access to services, problems relating to living within poor inner-city environments (including poverty and overcrowding), and a

greater prominence of difficulties in obtaining care home placements.

Based on the available evidence in relation to care-giving roles, *Box 5* contains a summary of the optimal content of informal carer “support packages”. This information needs to be individualised and presented in an appropriate way.

Language difficulties and health literacy (Nutbeam, 2000) remain important issues since they can hinder trust among people with diabetes and healthcare professionals, increase the likelihood of staff failing to recognise complexity in an individual, and decrease adherence to therapy (Rivadeneyra et al, 2000).

It is important to ensure that the information and instruction provided in the “support package” is translatable into relevant languages, is simple and easy to read, and is appropriately illustrated. It should also be sensitive to the cultural, educational, religious and ethnic issues for each group of people and be designed to empower individuals to successfully manage their diabetes and other healthcare issues.

Diabetes and cognitive dysfunction

Diabetes and cognitive dysfunction are related (Gregg et al, 2000b; Sinclair et al, 2000). Impaired cognitive function has been demonstrated in

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1. Failure to recognise depression can be serious and may be associated with worsening diabetes control and decreased treatment adherence.
2. Depression in diabetes can be treated successfully with pharmacotherapy or psychological therapy, but blood glucose levels should be monitored closely, especially with the former.
3. Goals for treating people with depression and diabetes are two-fold: first, remission or improvement of depressive symptoms; and, second, improvement of glycaemic control if poor.

older people with diabetes, but these studies were mostly not population based, excluded people with dementia, and generally used a large battery of tests to show the deficit.

Both dementia and diabetes are common long-term disabling conditions and will inevitably co-exist in a large number of older people by the very fact of their high prevalence rates. In the light of both epidemiological and biochemical evidence, a direct association between diabetes, Alzheimer's disease and cerebrovascular dementia has been supported, and studies suggest a 1.5- to 2-fold increased risk of dementia in people with type 2 diabetes (Cheng et al, 2012).

Impaired cognitive function may result in poorer adherence to treatment, worsened glycaemic control (due to an erratic diet and medication schedule), and an increased risk of hypoglycaemia if individuals forget that they have taken their blood glucose-lowering medication and repeat the dose. Depending on its severity, cognitive dysfunction in older people with diabetes may remain undiagnosed and have considerable implications that include increased hospitalisation, less ability for self-care, less likelihood of specialist follow-up and increased risk of institutionalisation. Clinicians must be prepared to refer people for specialist assessment if memory loss or behaviour change becomes an issue.

A UK working group on diabetes and dementia has met to develop best practice guidelines and their report was published in 2014 (Sinclair et al, 2014). Their statement gives a list of points of best practice, outlines an integrated care pathway, gives suggestions for diagnosing diabetes in people with dementia, and dementia in people with diabetes, and lists the competencies needed by healthcare workers looking after people who have both diabetes and dementia.

Depression and diabetes

Depression and diabetes are common in an ageing community and there is evidence of an association (Egede et al, 2002). A major depressive disorder appears to significantly increase the risk of diabetes (Maraldi et al, 2007),

and the presence of depression is an important predictor of subsequent death in people with diabetes admitted into hospital (Nouwen and Oyeboode, 2009). Depression occurs in up to a quarter of people with cardiovascular disease and diabetes, and in both cases, clinical outcomes are worse (Nouwen and Oyeboode, 2009).

Failure to recognise depression can be serious and may be associated with worsening diabetes control and decreased treatment adherence. Diabetes and depression may have a similar symptomatology, with elements such as fatigue, irritability and sexual dysfunction. This may delay or confuse the diagnosis, although the commonly used diagnostic assessment scales are still likely to be valid. Enquiries about wellbeing, sleep, appetite and weight loss should be part of the routine history, with a more comprehensive psychiatric evaluation if appropriate.

A Geriatric Depression Scale score of >5 can indicate probable depression. Other scales to be considered include the two-question test by NICE (2009) or the World Health Organization-5 Well-Being Index (Henkel et al, 2003).

A Quality and Outcomes Framework clinical indicator for depression screening in people with diabetes or cardiovascular disease was introduced in April 2006. It offered a financial incentive based on the indicator of the "percentage of patients on the diabetes register and/or the CHD register for whom case finding for depression has been undertaken on one occasion during the previous 15 months using two standard screening questions." This indicator was withdrawn in April 2013. Concern had been expressed that screening for depression in this way could be counterproductive (Maxwell et al, 2013).

Depression in diabetes can be treated successfully with pharmacotherapy or psychological therapy, but blood glucose levels should be monitored closely, especially with the former. Goals for treating people with depression and diabetes are two-fold: first, remission or improvement of depressive symptoms; and, second, improvement of glycaemic control if poor. The preferred first-line treatment is a selective serotonin reuptake

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Box 6. Recommendations for improving diabetes management in care homes.

- Screen for diabetes on admission and regularly thereafter
- Policies must include strategies to minimise hospital admission, metabolic decompensation, pressure sore development, pain, diabetes-related complications, infections and weight loss
- All residents should have an individual diabetes care plan that is reviewed regularly and after any intermittent illness
- All residents with diabetes should have an annual review which includes a medication review and access to specialist services
- All care homes should have a diabetes care policy that can be regularly updated and be a basis for diabetes audit
- Staff should have the relevant knowledge and skills, and participate in regular diabetes CPD programmes

inhibitor (SSRI) or a serotonin noradrenaline reuptake inhibitor, as well as psychotherapy. Treatment with an appropriate SSRI may improve symptoms and consequently metabolic control, although close observation for side effects and changes to glycaemic control are needed (Nouwen and Oyebo, 2009).

Diabetes in care homes

Between 7% and 27% of care home residents in the UK and USA have diabetes (Sinclair et al, 2001). The wide range is partly because of differences in the diagnostic criteria used and the prevalence of impaired glucose tolerance may be as high as 30%. People with diabetes in care homes should receive care commensurate with their health and social needs. The best possible quality of life and wellbeing should be maintained, without unnecessary or inappropriate interventions, while helping residents to manage their own diabetes wherever feasible, reasonable and appropriate.

Metabolic control should reduce both hyperglycaemic lethargy and hypoglycaemia, with a well-balanced dietetic plan that prevents weight loss and maintains nutritional wellbeing. Foot care and vision require screening and preventative measures to maintain mobility and prevent falls and unnecessary hospital admissions.

At present, residents with diabetes in care homes appear to be generally vulnerable and neglected, with high prevalences of macrovascular complications and infections

(especially skin and urinary tract), frequent hospitalisation, and much physical and cognitive disability. Known deficiencies of diabetes care include lack of individual management care plans and dietary supervision, infrequent review by specialist nurses, doctors and ophthalmologists, and poor knowledge and training for care staff.

Various strategies may improve diabetes care in this setting (see *Box 6*). National clinical guidelines are available (Diabetes UK, 2010). There is emerging evidence that many people with diabetes in care homes are severely disabled yet are still being prescribed multiple medications, especially for cardiovascular disease risk reduction, which may be inappropriate (Gadsby et al, 2012). Regular medication review will help to identify medications that may no longer be necessary or appropriate.

Issues in end-of-life care

Any clinician regularly involved in delivering diabetes care in older people will face one or more end-of-life care (EOLC) scenarios in their patient population each year. Each of these episodes requires the clinician to demonstrate knowledge of key palliative care principles, skill in revising goals of diabetes care, and a compassionate understanding of what the individual with diabetes is experiencing.

The Association of British Clinical Diabetologists (ABCD) position statement (Kilvert et al, 2010) demonstrates a commitment

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1. The presenting symptoms of hypoglycaemia in older adults can primarily be neuroglycopenic (confusion, delirium and dizziness) rather than adrenergic (palpitation, sweating and tremors).
2. People with cognitive impairment or loss of the warning symptoms of hypoglycaemia are at increased risk, as they may not recognise impending hypoglycaemia or fail to communicate their feelings to their carers.
3. Recurrent hypoglycaemia may be a particular problem in care home residents with diabetes taking insulin or sulfonylurea therapy.

by diabetes specialists to integrate important EOLC approaches into diabetes teamwork. This requires close working with community-based teams and primary care. As stated in the ABCD guidance (Kilvert et al, 2010):

“The multidisciplinary diabetes team will need to be proactive in recognising the onset of a patient’s terminal decline in health and liaising with the appropriate EOLC services. Services will be based around high quality EOLC, symptom management, and the provision of psychosocial support. There will be an agreed set of criteria to identify those who require urgent palliative care, support worker responses in different situations, e.g. unresolved pain, rapid discharge from hospital, or care breakdown at home.”

Issues that need to be addressed include adjusting glycaemic targets that lead to greater safety from hypoglycaemia, a reduction in unnecessary blood glucose monitoring, treating infections promptly to minimise pain and discomfort, providing pain relief, and at times considering withdrawal of treatment in type 2 diabetes when the individual is in the near stages of death and is not being troubled by hyperglycaemia.

Diabetes UK also published its updated End of Life Diabetes Care strategy document and clinical care recommendations in 2013 (Diabetes UK, 2013). This gives clear and comprehensive guidance in this area.

Diabetes treatment considerations

Along with glucose regulation, active management of other cardiovascular risk factors – especially hypertension and dyslipidaemia – is necessary from the outset. Advice on diet and lifestyle are given as for middle-aged people, including an exercise programme if possible. Incorporating a resistance training component, may be important in minimising the disability (by increasing muscle strength) associated with lower-limb dysfunction.

Treatment strategies aimed at blood glucose lowering in older people are similar to those in younger people, but treatment decisions need to be influenced by hypoglycaemia risk, presence of

frailty, renal impairment, carer involvement and the glycaemic targets that have been agreed.

Hypoglycaemia

The presenting symptoms of hypoglycaemia in older adults can primarily be neuroglycopenic (confusion, delirium and dizziness) rather than adrenergic (palpitation, sweating and tremors). Hypoglycaemia in this context would be the presence of symptoms in addition to a plasma glucose level of ≤ 3.9 mmol/L. Healthcare professionals may misdiagnose hypoglycaemia as a stroke, transient ischaemic attack, unexplained confusion or seizure.

People with cognitive impairment or loss of the warning symptoms of hypoglycaemia are at increased risk, as they may not recognise impending hypoglycaemia or fail to communicate their feelings to their carers. Multiple factors underlie the increased susceptibility to hypoglycaemia in older people, including recent discharge from hospital with altered sulfonylurea dosages, renal or hepatic impairment, excess alcohol and insulin therapy. In addition, older people show a diminished counter-regulatory response to hypoglycaemia (Meneilly et al, 1994), and this may delay recovery.

The risk of hypoglycaemia may be elevated, to differing degrees, in older people taking insulin therapies, but prolonged hypoglycaemia is also an important clinical issue for those taking certain sulfonylurea drugs. Impaired renal function further prolongs hypoglycaemia secondary to sulfonylureas that are cleared through the kidneys. Stopping sulfonylurea therapy in an older person at risk of hypoglycaemia with a low HbA_{1c} of below 53 mmol/mol (7%) and reviewing the HbA_{1c} in 3 months is becoming an accepted management strategy (Gadsby et al, 2017). In older people, serious hypoglycaemia appears to carry a worse prognosis and higher mortality risk.

Recurrent hypoglycaemia may be a particular problem in care home residents with diabetes taking insulin or sulfonylurea therapy (Abdelhafiz and Sinclair, 2009). Residents appear to have many hypoglycaemia risk factors that increase their vulnerability to hypoglycaemia, which further impairs their wellbeing and may increase

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hospital admission rates. An approach to reducing this risk is given in the Diabetes UK (2010) guidance.

Many older people cannot treat hypoglycaemia themselves. An educational programme should focus on detecting and treating hypoglycaemia, with advice to others about how to manage cases of unresponsive hypoglycaemia. In view of the additional vulnerability of older people to hypoglycaemia, extra caution is required when there is a history of recurrent symptoms, when drowsiness is present, when the person is on relatively large doses of insulin or when the individual's diabetes care is delegated to an informal carer. This increased risk must be balanced by a lower threshold for admission to hospital when hypoglycaemia is suspected. In this setting, a glucose level <4 mmol/L may warrant admission.

Concluding thoughts

Diabetes is a high-impact disorder that poses challenges of a highly complex nature for many health and social care professionals. This article describes key areas where change leading to enhanced care is feasible without major changes in healthcare policy being necessary.

All members of the diabetes care team must honour their commitment to strive for excellence in medical care, and diabetes in ageing people poses one of the more distinct of these challenges. Thoroughness, vigilance, compassion and professionalism are prime qualities in caring for older people with diabetes. When this care can be integrated and meet the aims of agreed clinical pathways, we help to lower inequality, reduce inequity of care and enhance the likelihood of a better outcome. ■

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“Thoroughness, vigilance, compassion and professionalism are prime qualities in caring for older people with diabetes.”

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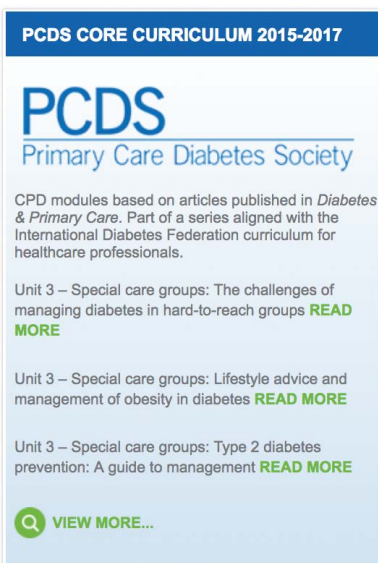
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“All members of the diabetes care team must honour their commitment to strive for excellence in medical care, and diabetes in ageing people poses one of the more distinct of these challenges.”

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The questions for the online CPD activity can be found on the next page



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Online CPD activity

Visit www.diabetesonthenet.com/cpd to record your answers and gain a certificate of participation

Participants should read the preceding article before answering the multiple choice questions below. There is ONE correct answer to each question. After submitting your answers online, you will be immediately notified of your score. A pass mark of 70% is required to obtain a certificate of successful participation; however, it is possible to take the test a maximum of three times. A short explanation of the correct answer is provided. Before accessing your certificate, you will be given the opportunity to evaluate the activity and reflect on the module, stating how you will use what you have learnt in practice. The CPD centre keeps a record of your CPD activities and provides the option to add items to an action plan, which will help you to collate evidence for your annual appraisal.

- According to recent National Diabetes Audit figures, what APPROXIMATE percentage of people with newly diagnosed type 2 diabetes are aged 65 years and over? Select ONE option only.
 - 25
 - 33
 - 50
 - 66
 - 75
- A 79-year-old woman has Alzheimer's disease and type 2 diabetes. She is cared for in a nursing home and has become increasingly frail over the past 12 months, but enjoys her food and watching television. What is the SINGLE MOST appropriate target HbA_{1c} (mmol/mol) to recommend? Select ONE option only.
 - <47
 - 47–9
 - 50–2
 - 53–9
 - 60–70
- According to a review of people living for 50 years since their diagnosis of type 1 diabetes, which is the SINGLE MOST likely factor associated with their survival? Select ONE option only.
 - Family history of longevity
 - High daily insulin requirements
 - Low HDL-cholesterol levels
 - Presence of microalbuminuria
 - Very tight glycaemic control
- What is the THRESHOLD time (in seconds) ABOVE which a "Get Up and Go" test is considered consistent with 'impaired mobility'? Select ONE option only.
 - 15
 - 30
 - 45
 - 60
 - 90
- A 77-year-old woman has hypertension, type 2 diabetes and CKD3. She has recently developed moderate-to-severe depression which has not responded to support and CBT. Which is the SINGLE MOST appropriate antidepressant? Select ONE option only.
 - Amitriptyline
 - Lofepramine
 - Mirtazepine
 - Sertraline
 - Trazodone
- An 83-year-old man has type 2 diabetes and metastatic colon cancer. His life expectancy is less than 6 months. In addition to regular analgesia, his current medication is ramipril 10 mg once daily, metformin 1 g twice daily, glipizide 5 mg twice daily, simvastatin 40 mg once daily and amlodipine 10 mg once daily. His recent annual diabetes review results are as follows:

eGFR	53 mL/min
HbA _{1c}	40 mmol/mol
Blood pressure	135/85 mmHg
Urine ACR	Negative

 Which is the SINGLE MOST appropriate INITIAL medication to stop? Select ONE option only.
 - Amlodipine
 - Glipizide
 - Metformin
 - Ramipril
 - Simvastatin
- A 73-year-old man with type 2 diabetes, COPD and benign prostatic hyperplasia has become increasingly unwell over the past 24 hours. He is confused, irritable and sweaty. He takes regular losartan, doxazosin, gliclazide and atorvastatin in addition to inhalers. He has a pulse rate of 100 bpm, temperature 37°C and blood pressure 134/76. His blood glucose is 4.3 mmol/L. Which is the SINGLE MOST likely diagnosis? Select ONE option only.
 - Hypoglycaemia
 - Renal failure
 - Sepsis
 - Stroke
 - Thyrotoxicosis
- According to recent National Diabetes Audit figures, what APPROXIMATE percentage of people living with type 1 diabetes are ≥70 years of age? Select ONE option only.
 - 5
 - 15
 - 25
 - 35
 - 45
- A 75-year old woman has type 2 diabetes, osteoarthritis and hyperlipidaemia. According to Bonds et al (2006), which SINGLE ONE of her medications is MOST LIKELY to increase her risk of falls? Select ONE option only.
 - Atorvastatin
 - Insulin
 - Metformin
 - Naproxen
 - Paracetamol
- According to Maraldi et al (2007), which ONE of the following conditions appears to significantly INCREASE the risk of developing diabetes? Select ONE option only.
 - Asthma
 - Depression
 - Hypertension
 - Osteoarthritis
 - Rheumatoid arthritis