

Learning Resource

For Health Care Assistants working in
Residential and Nursing Homes



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Introduction

A learning resource pack for Health Care Assistants (HCAs) involved in the care of elderly people with diabetes

This resource pack is intended to support HCA's who are involved in the day-to-day care of older people who have diabetes.

Diabetes is a complex condition and it is important that all those who provide care for clients with it are well informed and have the skills and competencies to provide optimal care.

The contents of the pack are competency and evidence based (web based references are included at the end of this resource pack).

There are opportunities within it for users to reflect on what they are learning and to build upon it in the form of 'Time-Out' activities including web links to useful external resources.

At the end of the pack there are references and recommendations for your further learning recommendations and Appendix 1 details the NICE Quality Statements for Diabetes which sets the national context.

We hope you enjoy undertaking this learning package and that it will help you understand how to provide better care for residents with diabetes in your work place.

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Competency and diabetes care

It is fundamentally important that any person who provides care for people with diabetes is safe and competent to do so.

For many years diabetes competence for Registered Nurses and Unregistered Practitioners has been described in the document: 'An Integrated Career and Competency Framework for Diabetes Nursing'¹. This document was updated in 2011 and it is from that the competency statements for each section in this resource pack are taken.

For the purposes of this document an Unregistered Practitioner should be understood as referring to Health Care Assistants.

The first competence statement below defines what an Unregistered Practitioner can be expected to provide for residents in Residential and Nursing homes.

To care for someone with diabetes living in a residential or care home as an unregistered practitioner you should be able to:

Demonstrate an understanding of specific issues relating to the care of people with diabetes in residential or nursing homes, such as:

- Access and timing of meals in relation to diabetes medication.
- Understand course of action if food is refused.
- Recognise the risk of, as well as the signs, symptoms and treatment for, hypoglycaemia.
- Perform blood glucose monitoring and urine testing according to manufacturers' instructions.
- Recognise and follow local policy around the disposal of sharps.
- Understand the normal glycaemic range and report readings outside this range to the appropriate person.
- Demonstrate knowledge of how to perform a basic foot examination and report adverse findings.
- If appropriately trained, demonstrate how to perform some of the basic components of the 9 Care Processes of Diabetes and report abnormal findings.

Time Out Activity

Think about the diabetes care you give at the moment, which of these do you feel confident to carry out?

Have you been trained and assessed as competent to perform some of the procedures e.g. blood glucose and foot assessment? Have you read your employers Diabetes Management Policies?

Section 1

Types of diabetes and treatments

Competency Statements regarding diabetes treatments:

As a Health care Assistant, you should be able to:

Oral therapies

- Describe the effect of common oral antihyperglycaemic agents on blood glucose levels.
- Demonstrate an understanding of the on-going nature of the therapy.
- Report identified problems appropriately.
- Recognise the signs of hypoglycaemia and administer glucose.

Injectable therapies

- Describe the effect of insulin on blood glucose levels.
- Be aware of local sharps disposal policy.
- Show an understanding of the on-going nature of the therapy.
- Administer insulin competently where supported by local policy.
- Report identified problems appropriately

What is diabetes?

Diabetes is a common life-long health condition. It is an endocrine disorder, meaning that hormone production is involved. There are over 3 million people diagnosed with diabetes in the UK and an estimated 630,000² people who have the condition², but don't know it.

In normal health the blood glucose level is maintained at around 4-7mmol/l. The levels vary within that range due to the starchy and sugary food consumed being broken down into glucose and the glucose being taken into the cells for energy or stored as fat.

The hormone responsible for the cells being able to use the glucose is called insulin and is produced in the pancreas. In diabetes the pancreas fails to make enough or no insulin to enable the cells to take up the glucose, so it remains in the blood stream, leading to higher levels than normal.

The higher than normal levels of glucose then lead to a range of symptoms including:

- Thirst
- Passing lots of urine
- Weight loss
- Tiredness

These symptoms are particularly common when Type 1 diabetes is developing or is not well controlled. Many people who have Type 2 diabetes do not get such noticeable symptoms at all, which is of concern as the disease may undiagnosed for a long time. If diabetes is not well controlled, meaning that for most of the time the blood glucose levels are near to normal, after 10 to 15 years blood vessel and nerve damage will start to occur.

This damage is known as diabetes complications, and will affect most of the body including:

- The eyes
- The kidneys

- The nervous system
- The large blood vessels supplying the legs, heart and brain.

If diabetes remains poorly controlled and the complications are not well treated serious illness e.g. heart attacks and strokes will occur and can lead to early death. Diabetes is the leading cause of lower limb amputations and renal failure in the UK³.

Type 2 diabetes is by far the most common and is the type that you are most likely to encounter in your work. Within this resource pack there is some information about Type 1 and Type 2 diabetes as well as there are increasing numbers of elderly people, living longer who have Type 1 diabetes.

Here is a link to the Diabetes UK website which has a short animated video about diabetes: <http://www.diabetes.org.uk/Guide-to-diabetes/What-is-diabetes/>

Type 1 diabetes

Type 1 diabetes develops when the insulin-producing cells in the body have been destroyed and the body is unable to produce any insulin at all. This may be due to the effects of a virus on the insulin producing cells in the pancreas known as the beta cells.

Who typically gets Type 1 diabetes?

Type 1 diabetes accounts for about 10 per cent of all adults with diabetes and is treated by insulin injections (often taken several times per day, and sometimes insulin is delivered by a special pump), a healthy diet and regular physical activity. Type 1 diabetes can develop at any age from early childhood to old age, but usually appears before the age of 40. The peak of incidence of Type 1 diabetes is around the time of puberty. It is the most common type of diabetes found in childhood. Although it may occur in childhood, it is a lifelong disease and people are living into old age with Type 1 diabetes.

What is insulin?

Insulin is a hormone. It works as a chemical messenger that helps the body use the glucose in the blood to give you energy. It can be thought of as the key that unlocks the door to the body's cells. Once the door is unlocked, glucose can enter the cells where it is used as fuel. In Type 1 diabetes the body is unable to produce any insulin so there is no key to unlock the door, and the glucose builds up in the blood.

The body can't use glucose to provide energy and tries to get it from elsewhere and starts to break down stores of fat and protein instead. This can cause weight loss. Because the body doesn't use the glucose it ends up passing into the urine.

Nobody knows for sure why these insulin-producing cells have been destroyed, but the most likely cause is the body having an abnormal reaction to the cells. This may be triggered by a virus or other infection.

Treatment for Type 1 diabetes

Type 1 diabetes is always treated with insulin injections. Insulin has a simple mode of action in that it enables cells to take up glucose from the blood and use it for energy. There are many different types of insulins and most people give their insulin with a pen injector device; although more rarely insulin pumps are used. There are many different pen injectors available from several different manufacturers. They are all fairly similar; however

they may operate in slightly different ways. It's important to seek advice on insulin pen usage from your local Diabetes Nurse, if you are at all unsure how to operate it.

What is Type 2 diabetes?

Type 2 diabetes develops when the insulin-producing cells in the body are unable to produce enough insulin, or when the insulin that is produced does not work properly (known as insulin resistance).

Who typically gets Type 2 diabetes?

Type 2 diabetes usually appears in people over the age of 40, though in South Asian people, who are at greater risk, it often appears from the age of 25. It is also increasingly becoming more common in children, adolescents and young people of all ethnicities. Type 2 diabetes accounts for approximately 90 per cent of all people with diabetes and is treated with a healthy diet and increased physical activity. In addition to this, medication and/or insulin are often required. In Type 2 diabetes there is not enough insulin (or the insulin isn't working properly), so the cells are only partially unlocked and glucose builds up in the blood.

Time Out Activity

Thinking about the people in your care at the present time, how many of them have Type 1 diabetes and how many have Type 2?

(Remember that not everyone who is on insulin has Type 1 diabetes, many people with Type 2 have insulin as well)

Diabetes treatments

As well as making lifestyle changes (eating healthier and increasing activity), people with diabetes often need additional treatments such as medication to control their diabetes, blood pressure and blood fats. This section helps to explain more about some of the more common treatments for people with diabetes.

Medication is not a substitute for following a healthy diet and taking regular physical activity.

Medication

Diabetes medication lowers blood glucose levels, and there are a number of different types that work in different ways. People with Type 2 diabetes may need medication including insulin. Diabetes medication cannot cure diabetes, and most people will have to take it for the rest of their lives.

The type of medication required will depend on individual needs and situation, whichever medication is prescribed, it will only work and help control diabetes if it is taken correctly. The Doctor, Pharmacist or Diabetes Nurse will advise how medications should be taken in relation to food – before, during or after food.

Type 2 diabetes is a progressive condition and, over time more medications may be needed to manage blood glucose levels.

Types of diabetes medication

There are several different 'families' (or classes) of diabetes medication:



- Biguanide (eg Metformin). Metformin works by making the cells in the body more sensitive to insulin so helps to reduce blood glucose levels. It can cause gastro-intestinal upsets in some people. It doesn't usually cause hypoglycaemia. It is often used in combination with other diabetes treatments.
- Sulphonylureas (eg Gliclazide, Glimepiride, Glipizide) This class of drugs works by increasing the amount of insulin produced by the pancreas, and lowers blood glucose levels. It can cause weight gain and is associated with hypoglycaemia. It is often used in combination with other diabetes treatments.
- Alpha glucosidase inhibitor. (Acarbose) This class of drug is not commonly used these days. It works by blocking starchy foods from being absorbed by the gut, so glucose levels do not rise too fast. It can cause gastrointestinal upsets.
- Prandial glucose regulators (e.g. Rapaglinide, Nateglinide). This class of drug works by stopping the blood glucose levels rising too high after food. There is a low risk of hypoglycaemia. It is often used in combination with other diabetes treatments.
- Thiazolidinediones (Pioglitazone) This class of drug works by increasing sensitivity to insulin. They can increase risk of hypoglycaemia, and may worsen heart failure and increased risk of bone fracture. It may be associated with bladder cancer. They are not used so readily these days. It is often used in combination with other diabetes treatments.
- Incretin mimetics – GLP-1 (Liraglutide, Exenatide, Lixisenatide, Bydureon). This class of injectable drug helps the body to produce more insulin as needed when food is eaten. It helps to lower blood glucose levels and helps with weight loss. There is a low risk of hypoglycaemia. It is often used in combination with other diabetes treatments.
- DPP-4 inhibitors (Alogliptin, Sitagliptin, Saxagliptin, Linagliptin, Vildagliptin). This class of drug help the body to produce more insulin as needed when food is eaten. It helps to lower blood glucose levels and does not cause weigh gain. There is a low risk of hypoglycaemia. It is often used in combination with other diabetes treatments.
- SGLT2 inhibitors (Dapagliflozin, Canagliflozin, Empagliflozin). This class of drug work by reducing the amount of glucose being reabsorbed by the kidneys and passing the excess glucose out into the urine. The amount of glucose in the blood is therefore reduced. Urinary tract infections are more common in people who use this drug. They can cause increase urinary frequency, dehydration and lower blood pressure. It is often used in combination with other diabetes treatments

People with diabetes may need several different types of treatment to keep them well, not only diabetes treatments as above but also treatments for blood pressure, lipids, and other health conditions. This means that compliance with treatment can be an issue. It is difficult for people to remember to take lots of different medications, and also with older people swallowing can also present difficulties.

Mental health conditions such as dementia and depressions can also lead to difficulties in managing medication use correctly. Many people with Type 2 diabetes will need insulin in the longer term to help control their diabetes. This does not mean that they have developed Type 1 diabetes as the two conditions are different. Insulin is given at a later stage in the disease to improve diabetes health. Increasingly other injectable drugs are used to treat Type 2 diabetes and they also may help with weight loss. This class of drug is called GLP-1, and although it is injected the same as insulin, it is not insulin and carries a lower risk of causing hypoglycaemia.

Time Out Activity

Think about person that you have cared for who had Type 2 diabetes, what medications did they have?

Did any of those medications cause difficulties for the person? If so, how did or could you have helped them with this?

Section 2

Diagnosing diabetes and diabetes prevention

Competency statement:

For the prevention and early detection of Type 2 diabetes you should be able to:

- Describe the risk factors for Type 2 diabetes.
- Explain the importance of prevention or delay of onset of Type 2 diabetes in individuals at risk.
- Explain the role of exercise in the prevention or delay in progression to Type 2 diabetes.
- Explain the importance of weight control and the role of diet in the prevention or delay

Type 1 diabetes is relatively easy to diagnose – the symptoms commonly are so extreme that the person suffering from it will seek medical advice very quickly:

- Thirst
- Passing lots of urine very frequently
- Tiredness
- Weight loss, including muscle wasting
- Sometimes infections, particularly of the skin e.g. boils, thrush, occur

When tested the blood glucose levels are much higher than normal (4-7mmol/L). Sometimes over 50mmol/l. Ketones may well be detected in the urine as well as high levels of glucose. A lab test will confirm high blood glucose and a diagnosis can be made. Although Type 1 diabetes is not preventable at the present time, considerable research is on-going to discover how it may be prevented in the future.

Time Out Activity

Visit these web sites to gain a greater understanding of what is happening regarding Type 1 diabetes prevention

- <http://dipp.utu.fi/index.php?mid=2&language=en>
- http://care.diabetesjournals.org/content/27/suppl_1/s133.full

Diagnosing Type 2 diabetes

It is very important for diabetes to be diagnosed early, so that treatment can be started as soon as possible and appropriate lifestyle changes encouraged.

If a person experiences the symptoms of diabetes, referral to the GP should be made as soon as possible. The GP or Practice Nurse ask about symptoms and will request blood and urine tests.

A urine sample will be tested for glucose. Urine doesn't normally contain glucose, but if diabetes is present, glucose can overflow through the kidneys and into the urine. If the urine contains glucose, a special blood test, known as glycated haemoglobin (HbA1c), can be used to determine whether diabetes is present.

Glycated haemoglobin (HbA1c)

In people who have been diagnosed with diabetes, the glycated haemoglobin (HbA1c) test is often used to show how well their diabetes is being controlled.

The HbA1c test gives your average blood glucose levels over the previous two to three months.

The results can indicate whether the measures taken to control diabetes are working.

When diabetes is diagnosed, it's recommended that HbA1c is measured at least twice a year.

However, it needs to be tested more frequently if:

- There is a recent diabetes diagnosis
- The blood glucose levels remain too high
- The treatment plan has been changed

Unlike other tests, such as the oral glucose tolerance test (OGTT), the HbA1c test can be carried out at any time of day and it doesn't require any special preparation, such as fasting. However, the test can't be used in certain situations, such as when a person has Sickle Cell Disease or is anaemic.

The advantages associated with the HbA1c test make it the preferred method of assessing how well blood glucose levels are being controlled in a person with diabetes.

HbA1c can also be used as a diagnostic test for diabetes and as a screening test for people at high risk of diabetes (see below).

HbA1c as a diagnostic test

In 2011, the World Health Organisation (WHO) recommended that HbA1c could also be used to help diagnose type 2 diabetes in people who are not known to have the condition.

HbA1c results used to be reported as a percentage but this was changed in 2012 to mmol/mol. We have added the old equivalent % values in brackets for your information, in case your patients are only familiar with these; however as a Healthcare professional you should only document mmol/mol and report values in mmol/mol.

An HbA1c level of 48mmol/mol (6.5%) or above indicates type 2 diabetes. Although there's no fixed point to indicate when someone has pre-diabetes, a UK expert group has

recommended that an HbA1c level of 42-47 mmol/mol (6-6.4%) would indicate that a person has a high risk of developing diabetes.

Oral Glucose tolerance test (OGTT)

The OGTT is less commonly used these days, but sometimes will be required.

Below is the sort of information that will be given to a client who may need to under this test:

A glucose tolerance test can show if the body is having problems processing glucose.

Before having the test, the patient is asked not to eat or drink certain fluids for 8-12 hours. They may also need to avoid taking certain medications before the test, as these may affect the results.

A blood sample will be taken before the test and the blood glucose will be measured. They will then be given a sweet glucose drink.

After drinking the glucose drink, the blood glucose will be measured again after two hours.

Patients are required to stay seated and not exercise between these two tests. As this is a long time to wait between blood tests, they may want to take something to read or listen to.

Test results

The results of the OGTT will show whether the person has a normal response to glucose; an impaired glucose tolerance (IGT) or diabetes. This is based on the amount of glucose in the blood both before and after drinking the glucose drink.

Blood glucose is measured in millimoles per litre, often written as mmol/l.

For someone without diabetes, the amount of glucose in their blood should be:

- less than 6 mmol/l before the test
- less than 7.8 mmol/l two hours after the test

If they have IGT, the amount of glucose in the blood will be:

- 6-7 mmol/l before the test
- 7.9-11 mmol/l two hours after the test

If they have diabetes, the amount of glucose in the blood will be:

- more than 7 mmol/l before the test
- more than 11 mmol/l two hours after the test

If the test results indicate they have IGT, they may be advised to make lifestyle changes, such as eating more healthily and taking more exercise. Medication to lower the blood glucose level may also be recommended.

If the results indicate that they have diabetes, it is likely that medication will be prescribed. This will lower their blood glucose level and help keep it under control.

Time Out Activity

You can read more about the HbA1c test at this website

<http://www.labtestsonline.org.uk>

Preventing Type 2 diabetes

Many local authorities in collaboration with NHS providers have implemented measures to identify those people who are at risk of developing Type 2 diabetes, and engage with them to help prevent development of the disease. People who are at risk of developing diabetes may have the following characteristics:

- Being overweight (particularly if a lot of weight is carried round the mid-section)
- Have a family history of diabetes – either Type 1 or Type 2
- Are from South East Asian countries, Afro-Caribbean descent or other ethnic background
- Are a woman who had gestational diabetes

Programmes of care aimed at Type 2 diabetes prevention have been developed and implemented across the UK. The programmes focus on reducing the risk of developing Type 2 diabetes by referral to health advisers for support for the following interventions:

- Becoming more active – engaging in formal, supervised exercise programmes
- Eating a healthy well balanced diet
- Reducing Body Mass Index (BMI) to normal limits

In 2012, The National Institute of Clinical Excellence (NICE)⁴ produced guidance regarding this.

The following is taken from NICE and is included as a summary:

Focus of the recommendations

The recommendations focus on two major activities:

- Identifying people at risk of developing type 2 diabetes using a staged (or stepped) approach. This involves a validated risk-assessment score and a blood test – either the fasting blood glucose or the HbA_{1c} test to confirm high risk.
- Providing those at high risk with a quality-assured, evidence-based, intensive lifestyle-change programme to prevent or delay the onset of type 2 diabetes.

Who will benefit?

The recommendations aim to help adults who are at high risk of developing type 2 diabetes. When a particular at-risk group is being targeted, this is cited in the recommendation.

Here is a link to the NICE website and the Type 2 diabetes prevention guideline:

<http://www.nice.org.uk/guidance/ph38/chapter/1-recommendations>

Time Out Activity

Thinking about each person in your care at the moment, and particularly of those who do not already have diabetes, note who you think may be at risk of developing diabetes in the future, and what you could do to reduce that risk.

Section 3

Care Planning for clients with diabetes

Competency Statement

You should be able:

To support the person to self-care for their diabetes you should be able to:

- Support the person to develop self-care skills with guidance from a registered nurse.
- Observe and report any concerns that might affect the ability of the person with diabetes to self-care.
- Encourage people to use their personalised care plans

Each person should have individualised care plan, so all staff are able to refer to and update it as necessary. Having a clear, comprehensive care plan is vital to delivery of high quality of care for clients by all staff who are involved.

The care plan should identify who is responsible for each person's diabetes care, and give details of:

- Treatment
- Dietary requirements
- Activity levels
- Contact numbers
- Targets for blood glucose, blood pressure and other tests

The care plan should be prepared in agreement with the person themselves, their family and care staff. Other specialists such as occupational therapists, physiotherapists, dieticians or psychologists may add to it.

Additional diabetes review form the GP practice information should be contained on the care plan and should a hospital admission be necessary, a copy can be sent with the person to assist the staff there.

Section 4

Diabetes Monitoring including blood glucose and urine testing and 9 Care Process for diabetes

Competency Statement for Blood Glucose Monitoring

You should be able to:

- Perform the test according to manufacturers' instructions and local guidelines.
- Perform the test unsupervised, at the request of a registered nurse.
- Document and report the result according to local guidelines.
- Recognise and follow local quality assurance procedures, including disposal of sharps.
- Recognise hypoglycaemia and be able to administer glucose.
- Understand the normal range of glycaemia and report readings outside this range to the appropriate person.

Some residential and care homes are not happy for you to perform capillary blood glucose monitoring and you need to know what your care home policy is.

If it is needed for a patient then the District Nurse or GP will ask you to do this and will provide you with necessary training to this safely, as the patient or their relative would do if the resident lived at home with them.

It is **very important that you do not use an individual's equipment to test other residents**. There is a risk of cross infection by using the same equipment even if you change the lancet.

It is also very important that you do not routinely do any glucose monitoring on any resident with diabetes unless their Doctor has specifically requested this and provided the meter and equipment necessary to do so. If you think a patient needs to have their blood glucose levels monitored in the home, discuss this with the patients GP and or Practice Nurse and get their advice.

Competency Statement for urine testing

You should be able to:

- Perform the test according to manufacturers' instructions and local guidelines.
- Perform the test unsupervised but at the request of a registered nurse.
- Document and report the result according to local guidelines.

People in care facilities should have the same care processes as those living in their own homes. Previously an Annual Review would take place via the GP practice in which a number of blood and other tests and investigations would be done. In 2013 NICE recommended that all people with diabetes should have 9 Key Care Processes⁵ in order to identify any problems with their diabetes health and to address them. The 9 Key Care Process is:

(Derived from NSF and NICE guidance)

1. Blood glucose level measurement (HbA1c)
2. Blood pressure measurement

3. Cholesterol level measurement
4. Retinal screening
5. Foot and leg check
6. Kidney function testing (urine)
7. Kidney function testing (blood)
8. Weight check
9. Smoking status check

Each area should make its own arrangements for a clients' review which will encompass elements of the 9 Key Care Processes. People may attend a surgery or hospital clinic, or doctors or other specialists may visit the care home.

NB: some people may be excluded from the retinal screening programme, however all other parts of the review should be carried out.

Section 5

Complications of Diabetes

Competency Statement regarding complications of diabetes

Regarding Hypertension and Coronary Heart Disease, neuropathy and nephropathy you should be able to:

- Undertake monitoring and assessment as requested.
- Maintain equipment in line with manufacturer's instructions.
- Care for people with diabetes undergoing cardiovascular investigations.
- Perform BP measurement according to the British Hypertension Society guidelines (Williams et al, 2004).
- Demonstrate awareness of the normal parameters for BP measurements.
- Take blood tests and specimens as requested by a registered nurse or doctor.
- Communicate test results to a registered nurse or doctor.
- Demonstrate awareness of CHD risk factors.
- Encourage people with diabetes to bring their prescriptions to each consultation.
- Observe people with diabetes for signs of fear or anxiety

Neuropathy

- Demonstrate awareness that all people with diabetes are at risk of neuropathy, including sexual dysfunction.
- Know which people with diabetes in your care have neuropathy.
- Provide basic foot care under guidance from a registered nurse.
- Report changes in pain, sensitivity, skin integrity, colour or temperature to a registered nurse or doctor.
- Measure standing and lying BP using appropriate devices.

Nephropathy

- Demonstrate an awareness that all people with diabetes are at risk of nephropathy.
- Perform monitoring as directed.
- Know which people with diabetes in your care have nephropathy

Retinopathy

- Demonstrate awareness that all people with diabetes are at risk of retinopathy.
- Support people with diabetes with impaired vision.
- Encourage people with diabetes to attend annual retinal screening appointments.

People with diabetes have an increased risk of developing a number of serious health problems. Consistently high blood glucose levels can lead to serious diseases affecting the heart and blood vessels, eyes, kidneys, nerves and teeth. In addition, people with diabetes also have a higher risk of developing infections. In almost all high-income countries, diabetes is a leading cause of **cardiovascular disease, blindness, kidney failure, and lower limb amputation.**



Maintaining blood glucose levels, blood pressure, and cholesterol at or close to normal can help delay or prevent diabetes complications. Therefore people with diabetes need regular monitoring. An additional section below concentrates on the importance of blood pressure in diabetes.

Cardiovascular disease: affects the heart and blood vessels and may cause fatal complications such as coronary artery disease (leading to heart attack) and stroke. Cardiovascular disease is the most common cause of death in people with diabetes. High blood pressure, high cholesterol, high blood glucose and other risk factors contribute to increasing the risk of cardiovascular complications.

Kidney disease (diabetic nephropathy): caused by damage to small blood vessels in the kidneys leading to the kidneys becoming less efficient or to fail altogether. Kidney disease is much more common in people with diabetes than in those without diabetes. Maintaining near normal levels of blood glucose and blood pressure can greatly reduce the risk of kidney disease. Screening for kidney disease should be carried out for new clients, as well as being part of the regular review of a person with diabetes.

Screening tests:

- Blood pressure measurement
- Urine test for protein and albumin/creatinine ratio (Protein in urine can indicate infection)
- Blood test to measure the efficiency of kidney function and to check levels of certain minerals in the blood

Symptoms of kidney disease:

- Ankle swelling
- Passing increased or decreased amounts of urine
- Tiredness
- Itchy skin
- Loss of appetite
- Nausea and vomiting
- Metallic taste in the mouth
- Drowsiness
- Darkening skin
- Muscle cramps
- Anaemia

The clients GP or specialist should be made aware of any symptoms as the risk of kidney disease progressing can be reduced by good blood pressure and blood glucose control, so changes may be needed to the persons medication

Treatment begins with possible dietary changes and referral to specialist dietician to plan an appropriate eating programme. Tablets may be prescribed to help the body get rid of extra fluid.

Nerve disease (diabetic neuropathy): diabetes can cause damage to the nerves throughout the body when blood glucose and blood pressure are too high. This can lead to problems with digestion, erectile dysfunction, and many other functions. Among the most commonly affected areas are the extremities, in particular the feet. Nerve damage in these areas is called peripheral neuropathy, and can lead to pain, tingling, and loss of feeling. Loss of feeling is particularly important because it can allow injuries to go unnoticed,

leading to serious infections and possible amputations. People with diabetes carry a risk of amputation that may be more than 25 times greater than that of people without diabetes. However, with comprehensive management, a large proportion of amputations related to diabetes can be prevented. Even when amputation takes place, the remaining leg and the person's life can be saved by good follow-up care from a multidisciplinary foot team. People with diabetes should regularly examine their feet, or have their carers check their feet for them every day.

Eye disease (diabetic retinopathy): most people with diabetes will develop some form of eye disease (retinopathy) causing reduced vision or blindness. Consistently high levels of blood glucose, together with high blood pressure and high cholesterol, are the main causes of retinopathy. It can be managed through regular eye checks and keeping glucose and lipid levels at or close to normal. Diabetic eye screening (retinal photography) with a digital camera is not the best way to detect age related changes and other common eye conditions (eg glaucoma, age-related macular degeneration, and cataracts) so routine eye tests are still required for people with diabetes.

Exemptions to diabetic retinal screening:

All people with diabetes are entitled to free annual retinal screening, but the following are exempt and excluded from the offer of screening

- A person with diabetes who has made their own informed choice they no longer wish to be invited for screening
- A person with diabetes who does not have the perception of light in either eye
- A person with diabetes who is terminally ill
- A person with diabetes who has a physical or mental disability preventing screening or treatment
- A person with diabetes who is currently under the care of an ophthalmologist for the treatment and follow-up management of diabetic retinopathy, and then for only that period.

Pregnancy complications: Women with any type of diabetes during pregnancy risk a number of complications if they do not carefully monitor and manage their condition. To prevent possible organ damage to the fetus, women with type 1 diabetes or type 2 diabetes should achieve target glucose levels before conception. All women with diabetes during pregnancy, type 1, type 2 or gestational should strive for target blood glucose levels throughout to minimize complications. High blood glucose during pregnancy can lead to the foetus putting on excess weight. This can lead to problems in delivery, trauma to the child and mother, and a sudden drop in blood glucose for the child after birth. Children who are exposed for a long time to high blood glucose in the womb are at higher risk of developing diabetes in the future.

Blood pressure: High blood pressure, or hypertension, is common in people with diabetes. Reports from 2012 show that high blood pressure affects 50% of people with diabetes. The symptoms of blood pressure may not show unless blood pressure becomes very high. However, people with diabetes should have their blood pressure checked each year. Blood pressure is important as it is linked with a higher risk of diabetes complications.

Target blood pressure levels

The first number in a blood pressure reading is known as the **systolic** reading, which is the pressure of blood when the heart beats.

The second number is the **diastolic** reading, which is the blood pressure between heart beats.

- The **NICE target blood pressure level** for people with diabetes is to achieve below **140/80mmHg**.
- The NHS regard an **ideal blood pressure** reading as being below **130/80mmHg**.

The target is to get blood pressure below both of these numbers.

For example a reading of 135/75 would be within the target, whereas 129/82 would be missing the target.

Frequently a range of medications (anti-hypertensives) are required to control blood pressure. It is important for clients to have their blood pressure monitored if they are taking medication to control it. The GP or Practice Nurse will advise on how frequently blood pressure needs to be monitored. Low blood pressure may result from some medications, and can pre-dispose clients to unsteadiness on their feet and potentially falls.

Additional complications that can occur in diabetes:

Infections: People with diabetes can be more prone to infections, especially if blood glucose levels are at a higher than normal level. In addition, infections will cause blood glucose levels to rise. Infections in older people, if not dealt with promptly, can lead to serious complications that may necessitate admission to hospital.

What to do:

- Urgent referral to the GP is necessary for treatment of the infection
- Give regular fluids to prevent dehydration
- If someone has diarrhoea, carers should be aware that they may be more prone to hypoglycaemia
- Keep testing blood glucose to monitor improvement or deterioration
- Do not stop diabetes treatment. The dose of diabetes medication may need to be increased for the duration of infection

Incontinence: Hyperglycaemia (high blood glucose levels) can cause thirst and increased urination. Diabetic neuropathy can cause damage to nerves in the bladder. Weight loss (if appropriate) and improved diabetes control can help to treat incontinence problems. The persons GP and diabetes specialist should be made aware of problems with incontinence and what measures have been taken to resolve the problem.

Foot Care: Diabetes may lead to poor circulation and feeling in the feet. Reduced mobility and failing eyesight can lead to a reduction in the levels of foot inspection; damage may become serious before anyone is aware of it. Damage can be prevented, but care is required by the person with diabetes, their carers and healthcare team. Clients with diabetes are more likely to be admitted to hospital with a foot ulcer than with any other complications of diabetes.

Steps to prevent or detect foot problems:

- Check feet daily
 - o Including between toes and look for thickened hard skin, changes in colour and breaks in skin. Use a mirror to view the soles of the feet.
- Wash feet each day in warm water and with mild soap
 - o Check water temperature, as the person with diabetes may not be able to feel hot or cold temperatures. Dry feet carefully, especially between the toes. If skin is dry, apply an emollient cream but avoid the areas between the toes
- Never use over-the-counter products to treat corns & callous
- Avoid using hot water bottles, in case of reduced temperature sensation. Use bed socks instead.
- Ensure shoes and socks are not too tight.
 - o Wear shoes which are comfortable and broad fitting. Check inside for sharp objects or ruffled linings
 - o Avoid socks with wrinkles or prominent seams
 - o Avoid elastic tops as they may restrict circulation
- Monitor blood glucose, blood pressure and blood fat levels, and keep as near normal as possible
- Keep any appointments with the podiatrist (chiroprapist)

Danger signs:

Act immediately if the following danger signs are spotted and seek immediate medical advice:

Colour	White skin will usually be bright pink or red; brown or black skin may become darker
Pain	The infected area may throb and be very painful (though this may not happen in cases of neuropathy)
Swelling	The infected area may be puffy and appear swollen
Movement	The pain and swelling may mean it becomes difficult to move the infected area (though this may not happen in cases of neuropathy)
Temperature	The infected area may feel hot to the touch
Pus	The area may be weeping a yellow / green matter called pus; this consists of dead cells and micro-organisms
Sores or cuts that do not heal	Delayed healing is common in poorly controlled diabetes, check any cuts or abrasions at least daily and seek medical advice if any concerns arise.

These symptoms could indicate poor circulation, an infection, early stages of an ulcer or gangrene. If any of these signs are present, arrange an appointment with the GP, diabetes nurse or podiatrist. If an appointment is not available for the same day, go to the nearest Accident & Emergency department.

In the meantime:

- Clean the foot with warm water
- Cover the area with a sterile dressing
- Take pressure off the affected area
- Wearing suitable footwear

Changes to the nerves may result in:

- Tingling or pins and needles
- Numbness
- Pain
- Sweating less
- Feet may look red and feel hot to touch
- Changes to the shape of feet
- Hard skin
- Losing sense of the position of your feet and legs

Changes to the blood supply may result in:

- Cramp in the calves
- Shiny smooth skin
- Losing hair on feet and legs
- Thickened toenails
- Cold pale feet
- Change in the colour of the skin of the feet
- Wounds or sores
- Pain in the feet

Oral health: It is estimated that people with diabetes can be three times more likely to develop gum disease than people without diabetes. Care home staff may need to assist with teeth brushing. Every morning and evening, the gums, tongue and roof of the mouth should be cleaned with a soft bristled brush. This will remove plaque and help with circulation in the mouth. Bad breath is one of the first signs of problems starting. Thrush can develop and lead to mouth ulcers, which can cause loss of appetite and worsening of diabetes control

Mental health:

Competency Statement:

Regarding mental health and diabetes you should:

- Have an awareness of how mental health issues, such as dementia, depression and anxiety, affect people with diabetes.
- Report any potential changes in the person's normal mental health (e.g. mood changes, changes in medications adherence, changes in appearance, anxiety) to a registered nurse or doctor.

As more than 25% of care home clients have diabetes, many are also likely to have **mental health problems**, and it will be necessary for the care home manager to ensure that mental health and social care services liaise closely with local community diabetes teams.

The link between diabetes and **depression** is well known and documented. NICE have published guidance on the assessment and treatment of adults with depression, and this includes those with long-term physical health problems including diabetes.

Someone with long-standing diabetes who may be troubled with neuropathic pain, discomfort with foot ulceration, repeated problems of medication adverse effects, for example, may be at special risk of depressive illness and further questioning and assessment will be necessary.

Memory loss is more commonly found in people over the age of 65. this can cause many problems for a person with diabetes, from forgetting to take their medication or to eat meals, to becoming anorexic and having difficulties feeding and so becoming undernourished, to an inability to communicate their needs so losing the capability to manage their diabetes altogether.

A simple bedside test of cognition screening called Mini-Cog, which is a combination test of clock drawing and answering several questions which test recall ability, has been developed by The Institute of Diabetes for Older People and NHS Diabetes (adapted for use in care homes 2010).

Once aware of memory problems, care home staff can help at meal times by:

- Serving one course at a time to reduce confusion
- Using clients own crockery to give greater familiarity
- Allow extra time for meals, allow grazing and for client to return to their plates
- Encouraging low glycaemic index dairy products, eg ice cream or milk shakes, when other food is refused, so reducing the risk of hypoglycaemia
- Reducing environmental stimuli, eg TV in dining area, if aggressive / negative behaviours are present during mealtimes
- Nutritional support may be needed, so refer to dietician

Section 6

Food and Nutrition including recognition and management of hypo and hyperglycaemia

Competency Statements regarding food, nutrition, hypo and hyperglycaemia:

Regarding these aspects, you should be able to:

Food and Nutrition

- Follow the nutritional plan and report any related problems.
- Recognise foods and drinks high in sugar.
- Measure and record waist circumference, height and weight accurately.
- Report if meals are not eaten, especially carbohydrates, if the client is using insulin or oral antihyperglycaemic agents

Hypoglycaemia

- State the normal blood glucose range.
- Describe the signs and symptoms of hypoglycaemia, including both mild and severe.
- Recognise that older people may not demonstrate clear signs and symptoms of hypoglycaemia.
- Demonstrate competent use of blood glucose monitoring equipment to confirm hypoglycaemia.
- Offer appropriate treatment as per local guidelines.
- Know where treatment for hypoglycaemia is stored.
- Give reassurance and comfort to the person with diabetes or their carer.
- Document and report the hypoglycaemic event to a registered nurse.
- If the person with diabetes is unresponsive, ensure their airway is clear and call emergency services.

Hyperglycaemia

- State the normal blood glucose range.
- Describe signs and symptoms of hyperglycaemia.
- Recognise that older people may be asymptomatic of hyperglycaemia.
- Perform blood or urine ketones tests according to local guidelines.
- Correctly document results and report those out of the accepted range

Food and nutrition, alongside medication and activity, is the cornerstone to diabetes management, and care home clients should be able to continue to enjoy a wide variety of foods.

Eating a balanced diet, managing weight (both over and under weight), following a healthy lifestyle, taking any prescribed medication and monitoring where appropriate, will benefit health enormously.

In some cases dietary recommendations for an older person with diabetes can differ to the general recommendations for people with diabetes. Older people in care homes may be more likely to be underweight, and the prevalence of malnutrition and under nutrition is high. It may therefore not be appropriate to reduce the fat, sugar and salt in the diet for every older person with diabetes.

Older people with diabetes should have their dietary requirements established by a registered dietician.

Plan for three regular meals a day

Help clients to avoid skipping meals and spread breakfast, lunch and evening meal over the day. This will not only help control appetite but also help in controlling blood glucose levels

At each meal include starchy carbohydrate foods

Eg, bread, pasta, potatoes, chapattis, yam, noodles, rice and cereals

The amount of carbohydrate eaten is important to control blood glucose levels. All varieties are fine, but try to include those that are more slowly absorbed (have a lower glycaemic index – GI) as these won't affect the blood glucose levels as much. The high fibre varieties of starchy foods (wholegrain) will also help to maintain the health of the digestive system and prevent problems such as constipation.

Cutting down on fat can help with weight management, for those people who are overweight.

Fat is the greatest source of calories so eating less fatty food will help with weight management.

Tips:

1. use less saturated fat by having less butter, margarine and cheese
2. choose lean meat and fish
3. choose lower fat dairy foods such as skimmed or semi skimmed milk, low fat yoghurts, reduced fat cheese and lower fat spreads
4. grill, steam or oven bake instead of frying or cooking with oil
5. swap creamy sauces and dressings for tomato based sauces

Include more fruit and vegetables

Aim for at least five portions a day to provide clients with vitamins, minerals and fibre as well as to balance the overall diet. Fresh fruit is not always easy for the older person to manage so dried tinned or frozen fruits, and fruit juice all count towards the portions

Include more beans and lentils as these can help to control blood glucose levels and blood fats

Eg kidney beans, chickpeas and lentils. Try adding to soups, stews and casseroles, or to a salad.

Aim to provide two portions of oily fish per week

Eg mackerel, sardines, salmon. Oily fish contains a type of polyunsaturated fat called Omega three which helps protect against heart disease.

Limit sugar and sugary foods

This does not mean that you need to eat a sugar free diet. Sugar can be used in cooking and baking as part of a healthy diet. Using sugar free or diet drinks and squashes can be an easy way to reduce sugar in the diet

Limit the amount of processed food you provide

Processed food contains high levels of salt. Try flavouring food with herbs and spices instead of salt

Alcohol should be taken in moderation

MAXIMUM 2 units per day for a woman and 3 units per day for a man.

Over the years the alcohol content of most drinks has gone up, a small glass of wine (175mls) can contain up to 2 units of alcohol.

Alcohol can make hypoglycaemia (low blood glucose levels) more likely to occur when taking certain diabetes medication. For this reason people with diabetes are advised to never drink on an empty stomach. Check with your client's healthcare team about whether they are at risk of hypoglycaemia.

Don't use diabetic foods or drinks

They offer no benefit to people with diabetes. They will still affect blood glucose levels, contain just as much fat and calories as ordinary versions, can have a laxative effect and are expensive.

For older people with diabetes that are responsible for preparing their own meals, efforts should be made to enable them to do so with ease and efficiency.

Points to consider:

- up to date nutritional education
- well maintained appliances and kitchen equipment, including electric can and jar openers, and microwaves
- adequate storage space
- help with shopping if needed
- access to regular dental check ups

Meal Planning in Care Homes

Practical guidelines and national minimum standards exist for the provision of meals in residential and nursing homes. These guidelines are relevant and should be applied to the client with diabetes too.

Consideration should be made to timing of medication and meals, the availability of snacks and flexibility and frequency of meals.

Breakfast: All breakfast cereals are fine. Adding fruit can notch up a portion towards the 5-a-day target. A small glass of unsweetened fruit juice or smoothie can count too, but will only count as one portion. Some people find fruit juice can affect blood glucose levels quickly so it is not the best choice for quenching thirst.

Bread products are a good alternative to cereal, wholegrain and granary versions are best for people with diabetes.

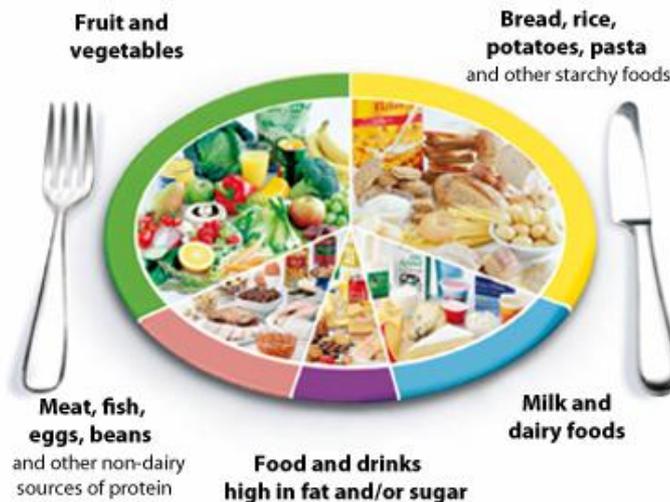
Main meal: Use the plate as a rough guide to provide food in the recommended portion size

Light meal: Ensuring that clients have a light meal will help to control appetite as well as diabetes. Lean meat, fish, beans, pulses, soup and salad are all good choices, provided along with granary bread, jacket potatoes, pasta or rice. Follow with a piece of fruit or low fat yoghurt

Snacks: Extra snacks can pile on the calories, so should be fruit or low fat yoghurt wherever possible. For some people on certain diabetes medication, snacks are essential. Check with your client's healthcare team to see if this applies to them.

The Eat-Well Plate

This is a picture that shows the balance of foods that are best for health and in the appropriate proportions:



Food and nutrition in care homes – additional considerations

Individualised information

The vital role of the registered dietician in the nutritional therapy of the person with diabetes as well as the older person in a care home should not be underestimated.

Care homes should seek to establish good working relationships with the dietetic service and work together to ensure effective nutritional therapy for those clients with diabetes.

Every person with diabetes should have an individualised nutritional care plan that has been discussed and agreed with the person with diabetes and their family/carers as appropriate. The dietician is best placed to facilitate this part of the care planning process.

Weight management

Weight is a significant factor in the development and management of Type 2 diabetes. For clients who are overweight or obese a reduction in weight of 10% may be beneficial. Specific goals should be identified and negotiated as part of the planning process.

Catering for people with diabetes who are overweight does not require you to use special recipes, but Diabetes UK produce a range of recipes that may help care home catering staff in menu planning. Check with the clients registered dietician for specific advice.

Underweight and malnutrition

A registered dietician can advise more fully on specific individual requirements. It is important to note that for some clients a therapeutic high energy – high protein diet may still be appropriate. Nutritional therapy may also include the use of nutritional support, eg supplement drinks or nasogastric feeds. Where high blood glucose levels are noted in a person receiving nutritional support, it may be necessary to adjust diabetes medication to achieve blood glucose levels as near normal as possible. Discuss with the clients healthcare team for more guidance.

Oral health

It is estimated that people with diabetes can be up to three times more likely to develop gum disease than people without diabetes. Their nutritional status may be compromised as a result of poor food and drink intake. Clients with diabetes and gum disease should be identified and dietary adjustments made according to specific need.

Dehydration

Older people are at greater risk of dehydration for a number of reasons. A client with diabetes may be at additional greater risk of becoming dehydrated as a result of polyuria. Particular attention should be made to the monitoring and provision of fluid for this client, and treatment modified accordingly so as to limit symptoms of hyperglycaemia.

Hypoglycaemia

Generally hypoglycaemia occurs when the blood glucose level is less than 4mmols/L. The signs and symptoms of hypoglycaemia will vary from person to person, and some people may not have any symptoms at all if they have regular low blood glucose levels

For older people there are added risk factors which can lead to hypoglycaemia:

- advanced age
- other illness or conditions as well as diabetes
- being prescribed 5 or more medications
- chronic renal problems
- poor nutrition
- acute illness

First signs and symptoms of Hypoglycaemia

Older people may not begin to experience the signs and symptoms of hypoglycaemia until 'cognitive function' – the ability to recognise or understand – is reduced. Also the way their body is programmed to respond to the warnings of a drop in blood glucose may have deteriorated.

First signs in an older person may be:

- inability to concentrate
- personality changes
- morning headaches
- disturbed sleep

Hypoglycaemia is often not a recognised problem in residential and care homes, which may be due to a variety of reasons:

- the client may rely on care home staff to manage their diabetes. If members of staff have not been trained in diabetes care, they may lack confidence or not have sufficient knowledge
- mealtimes can be unevenly spread out compared to what the person was used to. If breakfast is late and evening meal is early, this can lead to a long overnight fast
- medication, including insulin, aiming to lower blood glucose levels, may not be linked to the actual meal as closely as is necessary and so lead to a hypo event
- during episodes of illness, medication may not have been reassessed to prevent episodes of hypoglycaemia

Chronic hypoglycaemia

This can occur when a person has a low blood sugar (less than 4mmol/l) most of the time. If persistent hypoglycaemia is not recognised it can lead to a number of problems including:

- Falls when trying to walk or transfer between bed/chair, which may result in fractures
- It may cause the person to appear flustered, aggressive or even uncharacteristically violent
- It may cause the person to have difficulty with speech, feeding, dressing and toileting themselves
- It may cause weight loss if the person is not having adequate food
- If blood sugars are consistently low then the person may appear to have withdrawn from their surroundings, or appear to be weak, tired or generally deteriorating in health
- In some cases it may lead to a heart attack or stroke

Treatment of hypoglycaemia

- Take some fast acting carbohydrate, such as a sugary drink or some glucose tablets
- Follow this up with some longer acting carbohydrate, such as a cereal bar, sandwich, fruit, biscuit and milk, or the next meal if due
- Hypo boxes (containing non diet drink, glucose tablets and instructions for use) should be present in every care home and staff should be trained in its use. Contents of the hypo box should be checked weekly to ensure enough stock and that it is not out of date.
- Call a doctor or ambulance if necessary

Prevention of hypoglycaemia

- Care home staff should have the opportunity to access diabetic education free of charge to increase their knowledge and understanding of caring for people with diabetes
- Care home staff should have a named nurse or doctor specialising in the care of people with diabetes to call on for support in diabetes management, and so to help staff to work towards preventing hypoglycaemia in older people
- Mealtime should be spread throughout the day and people with diabetes should be able to eat with the rest of the people they live with. If spaced mealtimes are not possible due to the organisation within the home, then an early morning carbohydrate snack on rising, and a late evening carbohydrate snack needs to be given to prevent dipping blood sugars
- Medication for diabetes and management of blood sugars should be recognised and given at mealtimes as prescribed
- People with low Hba1c blood tests should have their medications reassessed or stopped by the general practitioner
- If hypoglycaemic episodes are frequent or severe, then medication and general management including mealtimes and meal content need to be reassessed by a nurse specialist or doctor

Hyperglycaemia

Hyperglycaemia means 'high blood glucose'. It is difficult to be absolutely specific about exactly what level constitutes hyperglycaemia as most people who have diabetes will have a higher than expected blood glucose level from time to time. It's important to remember that an occasional higher than expected blood glucose level occasionally will usually

resolve itself. It is of much greater concern if the blood glucose levels have been increasingly high (usually above 15mmol/l and above) for more than 24 hours, and if this occurs it is important that medical advice should be sought. The client should have their blood glucose levels measured 4 hourly if hyperglycaemia is identified, and the urine should be tested for ketones. Hyperglycaemia can be due to many different factors but mainly:

- Too much food, particularly sugary foods
- Insufficient diabetes treatment
- Other acute illness, particularly infections
- Reduced activity

If a client's blood glucose levels have been running higher than expected for more than 24 hours and ketones are present in the urine, urgent medical advice must be sought. The client can become rapidly dehydrated so measurement of intake and output is extremely important. This deteriorating condition associated with diabetes is commonly linked with an infection. Hospitalisation may be necessary.

In the meantime, it is important to continue with all prescribed diabetes medication which means the person must have some carbohydrate intake.

If they are able to eat but have no appetite:

- Offer small, frequent meals
- Replace meals with small snacks

If they cannot eat:

- Ensure they drink plenty of fluids
- Offer carbohydrate containing drinks (milk, fruit juice, non-diet soda) regularly at 2 hour intervals

If the person is admitted to hospital: On admission to hospital, either for a planned procedure or in an emergency, it is important to send a list of current medication with the person, and the medication itself, in the original packaging and appropriately labelled.

A transfer letter is important and the care plan can fulfil this requirement

Information about the hospital stay should be available, including which health professionals the client will access and information about the care process before, during and after any procedure.

During the hospital stay the client should be seen by a member of the diabetes team, and should have a referral made on their behalf.

What will happen regarding the management of the person's diabetes in hospital?

Policies for managing hypoglycaemia and hyperglycaemia should be agreed and included in the care plan.

The approach for monitoring blood glucose should be included in the care plan.

Changes to individual diabetes treatment may be necessary to stabilise diabetes control.

Medication and mealtimes should be co-ordinated appropriately.

Depending on the nature of the hospital admission, a dietician may need to specify dietary requirements.

Preparation for discharge

Discharge and follow up plans are an important mechanism for ensuring continuity of care, appropriate onward referral and effective communication with care home staff and day-to-day healthcare team.

Information should be available about the hospital stay and any on-going follow up.

Information should be available about management of diabetes and any changes made during the hospital stay.

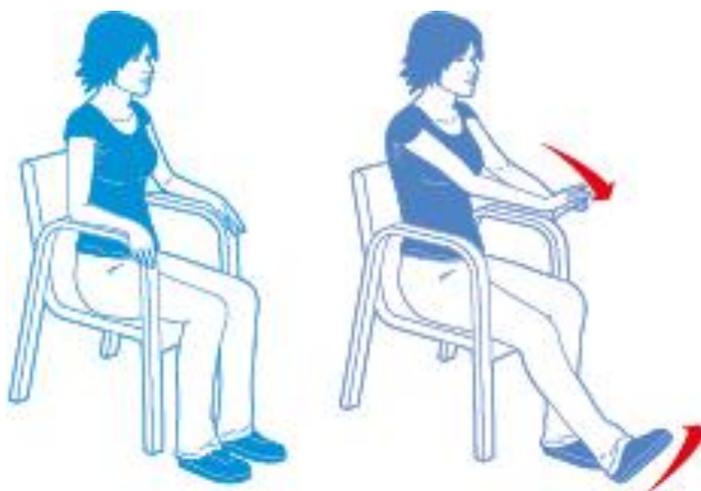
A copy of the discharge letter should be available for the care home staff and the GP.

Section 7

Activity and Exercise

- Exercise can provide tremendous benefits to both body and soul at any age. It is therefore important to ensure it is done properly and safely
- People with diabetes may have other conditions which may affect their ability to exercise safely, so it is important that your doctor knows the level of planned physical activity
- Regardless of any condition, regulated physical activity will improve well-being and maintain good blood glucose control
- Exercise programmes should be started gradually, and include time to warm-up and cool-down
- All activity should be done with controlled movements so as to avoid muscle strain and bone fractures
- Stop exercising and contact a doctor if you experience
 - muscle or joint pain that does not resolve with rest
 - chest pain or pressure
 - trouble breathing or shortness of breath
 - light headedness, dizziness or new difficulty balancing

Example of suitable arm-chair type exercise:



Time Out Activity

There are many types of safe and appropriate ‘arm chair’ type exercise regimes. See if you can find if there is any training available in your local area for this. There may be other sources of information regarding safe activities in care homes, e.g. Local Authority.

Section 8

End of Life Care

Competency Statement:

You should be able to:

- Undertake blood glucose monitoring and care as requested by registered nurse.
- Document and report blood glucose monitoring results according to local guidelines and protocols.
- Be aware of policies relating to end-of-life care and diabetes.
- Be aware of signs and symptoms that may indicate hypoglycaemia or hyperglycaemia

Everyone at this stage of their life has the right to privacy, dignity and involvement in the decisions surrounding their care⁶.

Healthcare professionals and all other carers need to respect the wishes and decisions expressed by the individual concerned, or in certain situations, the next of kin.

Pain relief

This can be a major fear for those at the end stages of life and people with diabetes may be experiencing long-term complications such as neuropathic pain, leg and foot wounds, as well as discomfort following a heart attack or stroke.

Resuscitation status

This should be reviewed as per local protocol, as people with diabetes have an up to five-fold increased risk of cardiovascular disease, meaning that an acute cardiac or vascular event leading to cardiac arrest is much more likely.

Withdrawal of treatment

For those with diabetes this may involve decisions on whether insulin or tablet therapy (for glucose control or any other associated complication) is continued and whether blood glucose levels are monitored regularly. However symptom control, such as in the case of high or low blood glucose levels, is of paramount importance for the comfort of the individual. Diabetes is the leading cause of renal disease, and if dialysis is in place for a client, consideration will need to be given regarding its continuation.

Withdrawal or choice of food and fluid

Relaxation of dietary control may be considered in those that wish it (eg an individual following a low fat diet for weight loss). Continuation or commencement of intravenous fluid replacement or parenteral feeding should be discussed.

General treatment considerations

For example, wound dressings or pressure area relief may not be carried out routinely, but should respond to the needs of the individual.

Section 9

Your Learning and Continuing Professional Development

We hope you have enjoyed undertaking this learning package. We trust it will help you understand how to provide better care for residents with diabetes in your work place.

Remember it is fundamentally important that you and any person who provides care for people with diabetes are safe and competent to do so. Ask your employer to help you to get additional training if you think you need it. Read your organisations policies relating to Diabetes Management.

If you have learnt something new from this learning pack and can see an opportunity to improve standards of diabetes care in your organisation, why not speak to your manager? See if together you can find a way to spread this new knowledge and help your colleagues improve the care they provided too?

In recent years there has been a lot of published work about how to care well for people with diabetes in residential and nursing homes, e.g. 'Diabetes Care for older people resident in care homes' and 'Diabetes and Dementia'. Go online and see what you can find that interests you.

Here are the references, resources and organisations we suggest and whose publications we have used in the development of is learning pack.

References

1. www.trend-uk.org/documents/TREND_3rd.pdf;
2. www.diabetes.org.uk/About_us/What-we-say/Statistics/;
3. www.who.int/diabetes/action_online/basics/en/index3.html;
4. www.nice.org.uk/guidance/ph38: Preventing Type 2 Diabetes July 2012;
5. www.nice.org.uk/guidance/ng28: Type 2 diabetes in adults: management December 2015;
6. www.nice.org.uk/guidance/ng17: Type 1 diabetes in adults: diagnosis and management August 2015;
7. www.nice.org.uk/guidance/ng19: Diabetic foot problems: prevention and management August 2015;
8. www.diabetes.org.uk/documents/reports/state-of-the-nation-2012.pdf;
9. www.diabetes.org.uk/upload/Position%20statements/End%20of%20Life%20Diabetes%20Care%20Strategy.pdf;

Other Resources

- Diabetes UK: www.diabetes.org.uk is a national diabetes self-care organisation and charity; it aims its information at patients, carers and professionals.
- Diabetes co UK: www.diabetes.co.uk is another diabetes information site geared towards patients.

Further Learning

There are several useful e-learning packages for healthcare assistants. We recommend you consider undertaking some of these to continue year on year to build your knowledge and understanding of diabetes and its safe management and keep up to date. A couple of these modules are listed below:

- Diabetes UK website
www.diabetes.org.uk/Professionals/Training--competencies/Diabetes-in-Healthcare
- This module is for nurses, healthcare assistants, dieticians, doctors and pharmacists.
www.diabetes.org.uk/Guide-to-diabetes/Education/Type-2-diabetes-and-me

This module is for people who have type 2 diabetes.

NHS Improving Quality website

- Diabetes e-learning modules www.nhsiq.uk/8473.aspx

These modules are to support healthcare professionals in ensuring diabetes is treated safely. Currently there are 6 modules and we strongly recommend you do any of these that relate to the care you are involved with providing to people with diabetes, for example, the Safe Management of Hypoglycaemia.

Appendix 1

NICE Quality Statements for Diabetes

Statement No	Statement	Local Action for care homes Who? How? When?
1	People with diabetes and/or their carers receive a structured educational programme that fulfils the nationally agreed criteria from the time of diagnosis, with annual review and access to on-going education	Who will deliver education programme? How do care home staff access? Is there a minimum no of trained staff per care home?
2	People with diabetes receive personalised advice on nutrition and physical activity from an appropriately trained healthcare professional or as part of a structured educational programme.	How do care home 'clients access this? Care home referral or GP?
3	People with diabetes participate in annual care planning which leads to documented agreed goals and an action plan.	Who will ensure this takes place? What if they can't agree?
4	People with diabetes agree with their healthcare professional a documented personalised HbA _{1c} target, usually between 48 mmol/mol and 58 mmol/mol (6.5% and 7.5%), and receive an ongoing review of treatment to minimise hypoglycaemia.	What if they can't agree? How will HCP review treatment?
5	People with diabetes agree with their healthcare professional to start, review and stop medications to lower blood glucose, blood pressure and blood lipids in accordance with NICE guidance.	What if they can't comply with medication? Who will be responsible for ensuring review and changes to medications?
6	Trained healthcare professionals initiate and manage therapy with insulin within a structured programme that includes dose titration by the person with diabetes.	What if they can't do the titration? Are care home staff trained to do this? What if no one on duty to do this?
7	Women of childbearing age with diabetes are regularly informed of the benefits of preconception glycaemic control and of any risks, including medication that may harm an unborn child. Women with diabetes planning a pregnancy are offered preconception care and those not planning a pregnancy are offered advice on contraception.	<i>Not applicable</i>
8	People with diabetes receive an annual assessment for the risk and presence of the complications of diabetes, and these are managed appropriately.	Who will ensure this takes place? Care home or GP?
9	People with diabetes are assessed for psychological problems, which are then managed appropriately.	Who will do assessment? Who will arrange assessment? Who will

		ensure any problems are managed?
10	People with diabetes at risk of foot ulceration receive regular review by a foot protection team in accordance with <u>NICE guidance</u>	Who assess the risk in care homes? How is client referred to foot protection team?
11	People with diabetes with a foot problem requiring urgent medical attention are referred to and treated by a multidisciplinary foot care team within 24 hours.	Are care home staff trained to do daily foot care? Can they refer to the MDT?
12	People with diabetes admitted to hospital are cared for by appropriately trained staff, provided with access to a specialist diabetes team, and given the choice of self-monitoring and managing their own insulin.	Local hospital to address?
13	People admitted to hospital with diabetic ketoacidosis receive educational and psychological support prior to discharge and are followed up by a specialist diabetes team.	Local hospital to address?
14	People with diabetes who have experienced hypoglycaemia requiring medical attention are referred to a specialist diabetes team.	Who will ensure this referral is made?

In addition, quality standards that should also be considered when commissioning and providing a high-quality diabetes service are listed in related NICE quality standards.