Managing Diabetes in Care Homes
Foreword

Managing Diabetes in Care Homes has been designed to be used as a resource and to provide guidance for adult Care Homes in Surrey Heartlands. Access to the same high standard of care should be delivered to all living with diabetes wherever they reside. Good quality care helps prevent the complications of diabetes, disability and reduces hospitals admissions. The document has been developed by the Surrey Heartlands Care Home Task and Finish Group:

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This document has been adopted by Central Sussex and East Surrey North place alliance.
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Acknowledgment: Surrey Heartlands STP
Diabetes within Care Homes

Introduction

The number of elderly people in the population is increasing. People are living longer and medical treatment is being transformed. Combined with a national and global rise in the number of people with diabetes it is not surprising that the number of people with diabetes in care homes may account for more than a quarter of residents over the age of 65 years with another 50% having pre-diabetes.

Diabetes presents an increasing health and economic challenge. Residents with diabetes are at greater risk of:

- Diabetes complications (e.g. harm to eyes, kidneys and feet, heart attack, stroke)
- Infections
- Hospitalisation
- Reduced quality of life
- Falls
- Physical and cognitive disability.

Aims for Care of Residents with Diabetes in Care Homes

Care homes should have a nominated member of staff responsible for the management of diabetes within the home. Part of their accountability should be to ensure all staff are given access to the appropriate diabetes education.

It is important that care home staff receive training so that they can manage residents with diabetes and ensure they receive the level of care to meet their individual needs.

This care should provide:

- Screening for diabetes on admission
- Sufficient support and opportunity to enable residents to manage their own diabetes where this is possible
- The highest degree of quality of life and wellbeing without subjecting residents to needless and disproportionate therapeutic and medical interventions.
- An agreed individualised care plan
- A well-balanced, individualised dietary plan based on the resident's MUST score to ensure nutritional wellbeing and prevent weight loss or weight gain.
- An ideal level of metabolic (i.e. chemical processes occurring in the body) control which:
  - avoids the illness and lethargy of hyperglycaemia (high levels of glucose in the blood)
  - reduces the risk of hypoglycaemia (low levels of glucose in the blood)
- A fully stocked hypo box (See page 29).
- The greatest level of physical and cognitive function to be achieved and sustained
- An annual review in line with the National Institute for Health and Care Excellence (NICE) Guideline
- Daily foot checks and the understanding of the importance of foot care management
- The greatest level of physical and cognitive function to be achieved and sustained
- Access to professionals such as a diabetes specialist nurse, GP, Pharmacist, Community Dietitian, District Nurse, Podiatrist.
Screening and treatment must be available on an individual basis depending on individual needs and, at all times, consider the capacity of the resident to make decisions on their own health care according to the Mental Capacity Act$^{3}$ (see Appendix 1).

**What is Diabetes Mellitus?**

Diabetes is a condition in which there is too much glucose (sugar) in the blood. Carbohydrates we eat and drink are broken down by the body to make glucose which goes into our blood stream. We also need insulin, a hormone which is produced by the pancreas to help move glucose from the blood into muscles and cells where it can be used as energy. In Type 1 diabetes the pancreas cannot make any insulin. In Type 2 diabetes the pancreas produces some insulin but either it is not enough or it cannot be used properly (insulin resistance). Type 2 diabetes accounts for 90% of diabetes.

**Signs and Symptoms of Diabetes Mellitus**

Some residents with diabetes will not have any noticeable symptoms. The condition will only be identified by a blood test.

Diabetes may be indicated by:

- Frequency of urination (polyuria)
- Urinary incontinence
- The need to wake up at night to pass urine (nocturia)
- Excessive thirst (polydipsia)
- Blurred vision
- Excessive tiredness and lethargy
- Weight loss
- Frequent infections
- Falls
- Behavioural change and cognitive impairment

**Common Signs of Diabetes**

- Blurry vision
- Increased thirst or the need to urinate
- Feeling tired or ill
- Recurring skin, gum, or bladder infections
- Dry, itchy skin
- Unexpected weight loss
- Slow-healing cuts or bruises
- Loss of feeling in the feet or tingling feet
Types of Diabetes

There are two main types of diabetes and each is managed in a different way.

<table>
<thead>
<tr>
<th>Type 1 Diabetes</th>
<th>Type 2 Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WHAT IS TYPE 1 DIABETES?</strong></td>
<td><strong>WHAT IS TYPE 2 DIABETES?</strong></td>
</tr>
<tr>
<td>The body does not produce any insulin at all. It has rapid onset and is usually but not always diagnosed when patients are young. As people are living longer some residents will have type 1 diabetes on admission.</td>
<td>The body cannot use insulin effectively (insulin resistance) and/or the body does not produce enough insulin. Patients are usually diagnosed after the age of 40 years.</td>
</tr>
<tr>
<td><strong>WARNING SIGNS</strong></td>
<td><strong>WARNING SIGNS</strong></td>
</tr>
<tr>
<td>Symptoms are usually of sudden onset. There is increased urination, thirst and hunger, extreme tiredness, blurred vision and weight loss.</td>
<td>There is increased thirst and urination, tiredness, recurrent urine infections, slow wound healing, pain and numbness in hands or feet. Symptoms can be mild and may go unnoticed.</td>
</tr>
<tr>
<td><strong>CAUSED BY</strong></td>
<td><strong>CAUSED BY</strong></td>
</tr>
<tr>
<td>Genetic or environmental, autoimmune factors and cannot be prevented.</td>
<td>Lifestyle, obesity, genetics, smoking, ageing. It can often be prevented with good lifestyle, diet and regular exercise.</td>
</tr>
<tr>
<td><strong>TREATMENT</strong></td>
<td><strong>TREATMENT</strong></td>
</tr>
<tr>
<td>Insulin only</td>
<td>Diet and lifestyle, oral medicines, injectable medicines and/or insulin therapy.</td>
</tr>
</tbody>
</table>

Patients who have type 2 diabetes who need insulin to control their blood glucose do not have type 1 diabetes.

Screening for Diabetes

The early identification of residents with diabetes and other co-morbidities (additional diseases) and then achieving good control can prevent or delay the onset and progression of diabetes complications.

On admission to a care home, all new residents without a diagnosis of diabetes should be screened for diabetes. Thereafter, residents who indicate a risk of developing diabetes should be screened annually and residents who are not diagnosed with diabetes should be screened every 2 years.
Diagnosis of Diabetes

The diagnosis of diabetes is based on the World health Organisation (WHO) criteria:

- HbA1c blood test; a value $\geq 48$ mmol/mol indicates diabetes, a value of 42 to 47 mmol/mol inclusive indicates a high risk for developing type 2 diabetes

or:

- If the resident has classic diabetes symptoms, a random venous plasma glucose concentration; a value $\geq 11.1$ mmol/l indicates diabetes.
- Fasting plasma glucose concentration; a value $\geq 7.0$ mmol/l indicates diabetes.
- Two-hour plasma glucose concentration; a value $\geq 11.1$ mmol/l two hours after 75g oral glucose tolerance test (OGTT) indicates diabetes. There are practical difficulties associated with an oral glucose tolerance test therefore an HbA1c is the most appropriate method of diagnosing diabetes taking into account the variables that can affect the result.

If the resident has no symptoms, a diagnosis of diabetes should not be based on a single abnormal glucose or HbA1c result. At least one additional abnormal plasma glucose either fasting or random or an additional HbA1c in the diabetic range is required. An oral glucose tolerance test although diagnostic may not be appropriate in an elderly resident.

Screening and treatment must be available on an individual basis depending on individual needs and, at all times, consider the capacity of the resident to make decisions on their own health care.

Diabetes Care Plan

An individualised care plan should be developed for every resident in conjunction with them (and their family members or carers if the resident wishes), the care home staff and the GP. It is important for care home staff to consider the wishes of the resident as well as their health status and include:

- medicine regimen, including medicine administration in relation to meal times
- medicine reviews
- clinical targets, including individualised glycaemic control, blood pressure and cholesterol
- blood glucose monitoring, clearly documenting why it is required, when testing should occur and what should happen with the results
- documentation of risk assessments and strategies to reduce risk, such as:
  - falls management
  - hypoglycaemia / hyperglycaemia management
  - pain management
  - sick day rules
- nutrition, considering food preferences, eating routines and religious beliefs
- level of physical activity / exercise
- diabetes education, focusing on goal setting, safety, risk management and complication prevention.
Monitoring of Residents with Diabetes

All residents with a diagnosis of diabetes should be assessed on admission to the care home, annually and when required, based on individual need and if circumstances change. This will form the care management plan.

This assessment should include:

- a full history of their diabetes including information on:
  - their knowledge of and ability to manage their diabetes care
  - thirst
  - polyuria
  - frequency of urination
  - nocturia
  - lethargy (a lack of energy and enthusiasm)
  - recurrent urine infections
  - weight loss
  - weight gain
  - any blood glucose monitoring, current equipment and devices, if appropriate
  - any recent hypoglycaemic events, symptoms and any treatment
  - any complications
- a full medical history including any allergies
- current weight, BMI and MUST score
- appetite, food and fluid intake
- their history of smoking and alcohol intake
- mobility and their ability to be active or exercise
- mood
- details of referrals to:
  - dietitian
  - podiatrist
  - retinal screening
- date of the review and name(s) of person(s) completing the form.

(See Appendix 2 for Diabetes Assessment form).

Quiz

1. How is diabetes diagnosed?
2. If a patient has diabetes are they at a higher or lower risk of a stroke or heart attack?
3. List some common symptoms of diabetes
4. What are the risk factors for developing type 2 diabetes?
5. Which is the more common condition: type 1 or type 2 diabetes?
6. Why is it important to prevent or delay the onset of type 2 diabetes in residents at risk?
7. Will a resident with type 1 diabetes produce any insulin?
Diabetes and Diet

The diet for a resident with diabetes is a normal, balanced, healthy diet; there is no need for a special diabetic diet.

A healthy diet does not necessarily mean restrictions, but choosing foods that will meet nutritional needs and control blood glucose levels. The ‘Eatwell Plate’ is a picture model designed by the Food Standards Agency which can be used for menu planning to help residents receive a nutritious, well balanced diet.

Food choices together with medicine and activities are the foundation to diabetes management.

Regular Meals

Residents with diabetes:

- who are on insulin or tablets for their diabetes need to eat regularly to prevent hypoglycaemia (low blood glucose); this means they need to eat regular meals of breakfast, lunch, an evening meal and may need snacks between meals according to their individual needs; this should be clearly identified in their care plan
- there should be no more than 5 hours between meals and there should be no more than 12 hours between the last meal at night and the first meal in the morning;
  - make suppers as late as possible
  - ensure breakfast is offered as early as possible for residents at risk of hypoglycaemia
These points are particularly important for residents with poor nutritional intake, e.g. those with swallowing issues or poor appetites.

Starchy Carbohydrate Foods

For residents with diabetes:

- each meal or snack should contain a starchy carbohydrate food such as bread, rolls, cereal, porridge, potatoes, rice, pasta, noodles or chapattis; (high fibre options such as granary bread and wholegrain cereals will also help to prevent constipation)
- regular consumption of carbohydrate foods is essential for residents using insulin or taking sulphonylurea tablets so cake, ice-cream or milky drinks may be needed if other healthier carbohydrate foods are refused
- it is very important to ensure plenty of fluids are drunk; such as water, tea, coffee or sugar-free fruit juice.

Fruit and Vegetables

For residents with diabetes:

- include plenty of fruit and vegetables at each meal. Five portions of fruit or vegetables are recommended each day (although it is recognised that this may not be achievable particularly in elderly residents with reduced appetite). Appropriate options include:
  - a 150ml glass of unsweetened fruit juice with breakfast
  - homemade vegetable soup
  - offering a selection of fruits and vegetables as snacks.

Sugar

Residents with diabetes should:

- cut down on sugar and very sweet foods such as sugary drinks, sweets, chocolate and cakes. **It is not necessary to exclude sugar completely from the diet**, especially if this causes distress and increased confusion in a resident with dementia
- use artificial sweeteners for sweetening puddings and cereals, tea or coffee if needed
- drink sugar free drinks
- use half the amount of sugar in recipes; most recipes will still work well.

Diabetic Products

Residents with diabetes should avoid specialist diabetic foods as they offer no benefit, they may contain as many calories as the ordinary version of foods and may cause stomach upset and diarrhoea if taken in large amounts.

Special Occasions

Having diabetes doesn’t stop the resident from joining in on special occasions, e.g. festivals or birthdays; the occasional sugary food, alcohol in moderation or celebration meal will do no harm providing it is part of a balanced, healthy diet. If the resident is having something sugary, it is best to have it just after a meal.
Family Bringing in Food

Families should be encouraged to bring in favourite treats for residents but the care home should be made aware of this so that:

- they know what the resident likes and can incorporate it into their daily life
- they can adjust daily requirements if other food has been given.
- They can ensure food complies to food hygiene regulations.

Achieving and Maintaining a Healthy Weight

- A healthy weight helps to improve diabetes control and helps to reduce the risk of heart disease and stroke.
- If the resident is overweight, reduce portion size and cut down on fatty foods such as pastry, cream, fat on meat, crisps, cheese and biscuits and use lower fat alternatives such as semi-skimmed milk and low fat spreads. **This should be in agreement with the resident and/or family members.**
- If the resident is not able to maintain a healthy weight and is malnourished then consider food fortification using a ‘food first’ approach before considering food supplements. For these residents, low fat foods are inappropriate; full fat milk and dairy products should be given and other high fat foods which provide concentrated sources of calories.
- It is recognised that some residents may be underweight; they are nutritionally at risk because they:
  - have an acute or chronic illness
  - find self-feeding difficult
  - have a poor appetite
  - have swallowing issues
- Food supplements such as Complan or Fortisip may be necessary in residents with dementia who are unable to eat meals or are unable to consume sufficient calories by other means. If blood glucose levels rise after these are consumed, they should not be stopped but diabetes tablets or insulin injections may be needed to control blood glucose levels. **Advice from a dietitian is required for residents who need nutritional support.**

Weight loss may also be due to poor control of diabetes and the dose of insulin or tablets for diabetes may need to be increased to help regain that control of diabetes; advice from a Diabetes Specialist Nurse or GP will be required.

Alcohol

Residents living with diabetes:

- can continue to include alcohol in their diet in moderation unless they have been medically advised to avoid alcohol
- should not exceed the recommended alcohol intake; i.e. no more than 2 units at any one time and no more than 14 units a week
- should only consume any alcohol with food, especially if on insulin or tablets for diabetes
- should never drink alcohol on an empty stomach; it is important to have some starchy foods to eat before e.g. bread, toast, a meal containing potatoes, pasta or rice
- should be aware that a hypoglycaemic event can occur several hours after drinking alcohol so it is best to have an extra snack, e.g. sandwich, toast or crisps, if drinking alcohol.
Oral Health
Residents living with diabetes can be at least three times more likely to develop gum disease than those without diabetes. This may mean that their nutritional status is compromised as they are unable to eat or drink. Dietary adjustments should be made according to specific, individual need.

Dehydration
A resident with uncontrolled diabetes may be at additional, greater risk of becoming dehydrated because of polyuria. Fluid intake should be monitored and treatment modified accordingly to reduce the chance of hyperglycaemia.

Reflection
Think about the last meal you ate.

- How well does it compare to the 'Eatwell Plate' model?
- How well does it compare to the last meal eaten by one of your residents?
- Does anything need to be changed?
- What action do you need to take?

Quiz
1. List four foods that are high in carbohydrates and refined sugars
2. Why are regular meals important for a resident with diabetes?
3. List the principles of a healthy balanced diet.
4. Why is the timing of medicines in relation to meals important?
5. Explain the importance of weight control in a resident with diabetes.
Medicines to Manage Diabetes

Self-Medication

Care home staff should assume that a resident can take and look after their medicines themselves, i.e. self-administer, unless a risk assessment has indicated otherwise; an individual risk assessment should be carried out to establish how much support a resident needs to continue taking and looking after their own medicines. A risk assessment should consider:

- resident choice
- if self-administration will be a risk to the resident or to others
- if the resident can take the correct dose of their own medicines at the right time and in the right way (for example, do they have the mental capacity and manual dexterity for self-administration?)
- how often the assessment will need to be repeated based upon the individual resident’s need
- how the medicines will be stored
- the responsibilities of the care home staff.

This assessment should involve the resident (and their family members or carers if the resident wishes) and care home staff. All care home staff should have been trained to carry out this assessment. Other healthcare professionals, e.g. GP, pharmacist, should be involved if medicines regimen could be adjusted to enable the resident to self-administer.

For residents with diabetes the risk assessment could also consider:

- ability to use any equipment
- injection technique (if applicable)
- injection sites: position and appearance, (lipohypertrophy is when fatty lumps appear on the surface of the skin and is a common side effect of insulin injections if multiple injections are administered to roughly the same part of the skin over a period).

(See Appendix 3 for an example of a Self-Medicating Risk Assessment form.)
Management of Medicines

Medicine to Manage Diabetes

The management of medicines in care homes is governed by legislation, regulation and professional standards and these are monitored and enforced by the Care Quality Commission (CQC).

All care staff must be:

- trained
- competent
- feel confident

to administer medicine to residents and there should be documentation in place to demonstrate this.

All registered nurses must comply with the Nursing and Midwifery Council Standards for Medicines Management.

Additionally, it is important for all staff administering medicine to consider at all times the Eight Rights of Administration, (see Appendix 4).

There are several different types of medicines that can be given to treat high blood glucose levels. They all have different modes of action and varying side effects. A comprehensive list and further information can be found on Surrey Prescribing Advisory Database (https://surreyccg.res-systems.net/pad/Search).

Brand and Generic Medicines

Care home staff should be aware that all medicines have a brand name and a generic name; any concern over the name of a medicine should be discussed immediately with a Pharmacist before the medicine is given.

The generic name is the official name for the active ingredient, the brand name is the name chosen by the manufacturer, for example:

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metformin</td>
<td>Sukkarto SR®, Glucophage®</td>
</tr>
<tr>
<td>Insulin Glargine</td>
<td>Abasaglar®, Toujeo®</td>
</tr>
<tr>
<td>Liraglutide</td>
<td>Victoza®</td>
</tr>
</tbody>
</table>

Generic medicines are not inferior in quality to branded medicines; they will have to be the same strength, quality and have the same action as the branded medicine. However, they may be a different colour, shape or form. Residents can get confused and think they have been supplied the wrong medicine. If the medicine looks different from the previous supply and you are unsure, always check.
## Oral Medicine

<table>
<thead>
<tr>
<th>Class</th>
<th>Name (brand name)</th>
<th>Form(s)</th>
<th>How they Work</th>
<th>Main Side Effects / Disadvantages</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biguanide</td>
<td>Metformin (Glucophage®)</td>
<td>Tablets, Slow-Release Sachets, Liquid.</td>
<td>Helps the liver to store excess glucose from the blood.</td>
<td>Gastro-intestinal side effects. Modified-release tablets cannot be crushed or broken; they must be swallowed whole</td>
<td>No hypoglycaemia. Weight loss.</td>
</tr>
<tr>
<td>Sulphonylurea</td>
<td>Glibenclamide¹ (long acting), [contraindicated in &gt;75yrs]</td>
<td>Tablets. Slow-Release Tablets (Gliclazide).</td>
<td>Makes the pancreas produce more insulin</td>
<td>Hypoglycaemia risk, especially at high doses in the elderly or in renal impairment. Risk of hip fractures. Weight gain.</td>
<td>Similar HbA1c reductions to Metformin. Relatively well tolerated.</td>
</tr>
<tr>
<td></td>
<td>Glimepiride (Amaryl®), Gliclazide (Diamicron®), Tolbutamide, Glipizide (Minodiab®).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gliptin (DPP-4 inhibitors)</td>
<td>Saxagliptin (Onglyza®), Sitagliptin (Januvia®) ¹, Vildagliptin (Galvus®), Linagliptin (Trajenta®).</td>
<td>Tablets.</td>
<td>Helps a stomach hormone to work more efficiently</td>
<td>Pancreatitis. Hypersensitivity reactions.</td>
<td>Similar HbA1c reductions to Glitazones. No weight gain. Low risk of hypoglycaemia.</td>
</tr>
<tr>
<td>SGLT-inhibitor</td>
<td>Dapagliflozin¹ (Forxiga®), Canagliflozin (Invokana®), Empagliflozin¹ (Jardiance®).</td>
<td>Tablets.</td>
<td>Makes the kidneys excrete glucose from the body</td>
<td>Increased diuresis. Increased risk of urinary tract and genital infections. Rarely, acute illness presenting with ketoacidosis but normal blood glucose levels. Can only be used if resident has good kidney function. Please make sure resident is well hydrated.</td>
<td>Low risk of hypoglycaemia. Can help weight loss.</td>
</tr>
<tr>
<td></td>
<td>Can have some combination products that have more</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NB. Sometimes medicines can be combined to produce one tablet. For example – metformin and sitagliptin combined is called Janumet®.**
Injectable GLP-1 and insulin therapies can be used on their own or in conjunction with oral medicines.

<table>
<thead>
<tr>
<th>Class of medicine</th>
<th>Name (brand name)</th>
<th>Form(s)</th>
<th>How they Work</th>
<th>Main Side Effects / Disadvantages</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLP-1 (Twice a day dosing)</td>
<td>Byetta® (Exenatide)</td>
<td>Pre-filled disposable pen for subcutaneous injections. Twice daily dose BEFORE meals and NEVER after meals.</td>
<td>Is a copy of a stomach hormone that promotes insulin production and makes the patient feel full quicker.</td>
<td>Gastrointestinal side-effects, nausea, vomiting but these often stop a few weeks after starting therapy; reduced appetite; pancreatitis (uncommon); injection-site reactions.</td>
<td>Can help with weight loss.</td>
</tr>
<tr>
<td>GLP-1 (Once a day dosing)</td>
<td>Victoza® (Liraglutide); Lyxumia® (Lixisenatide)</td>
<td>Pre-filled disposable pen for subcutaneous injections; Once daily dose at the same time of day.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GLP-1 (Once WEEKLY dosing)</td>
<td>Bydureon® (exenatide); Trulicity® (dulaglutide)</td>
<td>Powder and solvent for solution for injection pre-filled pen for subcutaneous injections; Once weekly dose at the same time of the same day each week.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-acting Insulin</td>
<td>Levemir®, Lantus®, Abasaglar®, Toujeo®, Degludec®; Xultophy® (mixture of insulin and GLP-1)</td>
<td>prefilled pens or cartridges; Once or twice a day dose (at same time each day; usually before food)</td>
<td>Replaces insulin which the body lacks.</td>
<td>Hypoglycaemia; fat hypertrophy at injection site; local reactions at injection site; transient oedema</td>
<td>very effective</td>
</tr>
<tr>
<td>Intermediate-acting Insulin</td>
<td>Humulin I®, Insulatard®, Insuman Basal® (isophane)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate PLUS quick-acting insulins.</td>
<td>Humulin M3®, Insulan Comb® 15 or 25 or 50; Novomix® 30; Humalog Mix® 25 or 50;</td>
<td>prefilled pens/cartridges; twice a day (usually before breakfast and evening meal)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quick-acting insulins</td>
<td>Fiasp®, Novorapid® (aspart); Apidra® (glulisine); Humalog® (lispro)</td>
<td>prefilled pens/cartridges; taken just before meals but sometimes can be taken straightaway after meals.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Residents older than 75yrs, taking these medicines should have a medication review due to limited experience in this cohort of patients.
GLP-1 Therapy

GLP-1 therapy, e.g. liraglutide or exenatide, can be used daily or weekly. Some GLP-1 therapies, e.g. exenatide, require administration before food, never after food; **administration times should be clearly documented.**

Insulin and GLP-1 Storage

- Insulin or GLP-1 devices **currently** in use should be stored at room temperature and should be discarded within one month of opening.
- Any device not in use should be stored in a medicines fridge between 2°C and 8°C.
- If insulin is kept in the fridge it should be taken out and left for about 15-20 minutes until it reaches room temperature before administering.

Insulin Therapy

Prescribing insulin in a care home setting usually requires three major considerations:

- can the resident and / or care home staff recognise and manage hypoglycaemia?
- is advice available to educate and support the resident and / or care home staff on the use of insulin?
- is there any physical, cognitive or behavioural disability that may affect compliance with therapy?

Reflection on these determines who should administer the insulin, the resident or care staff.

Insulin therapy will be required if the resident is diagnosed with:

- type 1 diabetes
- type 2 diabetes and control has not been achieved with oral medicines alone.

**ALL INSULINS ARE ASSOCIATED WITH A RISK OF HYPOGLYCAEMIA**

For residents with an erratic dietary intake, injections immediately before food of a short-acting, analogue insulin may be very useful. Some short-acting insulins require administration:

- half an hour before food
- immediately before
- immediately after food (<5mins after eating).

**It is essential that the exact timing of insulin administration is clearly documented and followed.**

A local diabetes nurse specialist can play a very important role in the education of the resident and the care home, including catering staff.

Additionally, the advice and support of a community dietitian when insulin therapy is begun is essential.

**Quiz**

1. **What is the difference between a brand name and a generic name of a medicine?**
2. **Which medicines used to treat diabetes are associated with hypoglycaemia?**
3. **Should short-acting insulins be given with or without food?**
4. **Can insulin therapy be used in patients with Type 2 diabetes?**
5. **If an insulin or GLP-1 device is currently in use can it be stored at room temperature?**
Injection Technique for safe Insulin Administration

Every resident who injects their own insulin should have a risk assessment to ensure they are safe and able to administer insulin correctly. If not, insulin has to be administered by a trained and competent nurse.

Where to inject insulin

Insulin is injected subcutaneously, which means into the fat layer under the skin.

In order for Insulin to be absorbed properly, it should be injected into the subcutaneous fat, which is the layer of fat just below the skin as this is the best way for insulin to be utilized by the body. If you inject the insulin deeper into your muscle, your body will absorb it too quickly, it might not last as long, and the injection is usually more painful. This can lead to low or erratic blood glucose levels.

In this type of injection, a short needle of no more than 4mm should be used to inject insulin into the fatty layer between the skin and the muscle.

If the resident has been prescribed a larger needle then a lifted fold (see diagram below) will be required to avoid injection into muscle as this will increase chance of causing the blood glucose levels to drop (hypoglycaemia).

Best practice suggests rotation to different areas of the abdomen, keeping injection sites about an inch apart. Or you can inject insulin into other parts of the body, including the thigh, arm, and buttocks. This is important because using the same spot over time can cause lipohypertrophy. In this condition, fat either breaks down or builds up under the skin, causing lumps or indentations that interfere with insulin absorption.
Abdomen

The preferred site for insulin injection is the abdomen. Insulin is absorbed more quickly and predictably there, and this part of your body is also easy to reach. Select a site between the bottom of the patient’s ribs and pubic area, steering clear of the 2-inch area surrounding your navel. Avoid areas around scars, moles, broken blood vessels or skin blemishes. These can interfere with the way the body absorbs insulin.

Thigh

You can inject into the top and outer areas of the thigh, about 4 inches down from the top of the patient’s leg and 4 inches up from their knee.

Arm

Use the fatty area on the back of the resident’s arm, between the shoulder and elbow.

How to inject insulin

- Ensure that you are wearing gloves for protection.
- Before injecting insulin, be sure to check its quality e.g. is the solution clear/cloudy?
- Check expiry date
  - If it was refrigerated, allow the insulin to come to room temperature.
  - If the insulin is cloudy, mix the contents by rolling the vial between your hands for a few seconds. Be careful not to shake the vial.
- Short-acting insulin that isn't mixed with other insulin shouldn't be cloudy.
- Don’t use insulin that is grainy, thickened, or discoloured.
- Check Right Patient, Right time, Right insulin and Right dose.
- Explain to the resident what you are about to do and gain consent.
Make sure you have a clean site and clean hands and check the resident’s injection site.

Place a new **safety needle** onto the pen device if the resident cannot manage a regular pen needle and screw firmly into place, but do not over tighten.

If the insulin is cloudy, gently invert 10 times and roll between palms of hands 10 times to fully mix it.

Remove outer cap.

Test dose, set the dial to 2 units and with the needle tip pointing away from you but still visible press the dose button, you should see a bead of insulin appear at the needle tip. Repeat if no insulin appears.
Set your dose as prescribed for the resident as per medicine chart.

Hold the pen in your fist; keep your thumb away from the dose button. With the pen at 90 degrees to the resident’s prepared skin surface, gently push the needle through the skin into the injection site.

Push down the dose button with your thumb. Hold the needle in the injection site for a full 10 seconds after you have finished pushing the dose button. Then gently remove the needle from the skin.

The resident should remove the pen needle to prevent needle stick injury to be placed or emptied in the sharps box ready for safe disposal. If the resident is unable to do this then you must use a safety needle. Check your policy for safe sharps disposal.
Quiz

1. What are the eight rights of administration?
2. What is the brand name of a medicine?
3. Why should Metformin Slow Release tablets be swallowed whole without chewing?
4. Which oral medicine is most likely to cause hypoglycaemia?
5. Why is it important to rotate injection sites for patients using injectable therapies?
6. How often should the needle of an insulin pen be changed?
   - Every time?
   - Once a week?
   - Once a month?
7. Why should a resident be encouraged to self-administer their own insulin?

Blood Glucose Monitoring

Effective glucose control may result in a reduction in hospital admissions for residents with diabetes. Agreed blood glucose target ranges for residents are based on:

- their physical capability
- their level of frailty
- the frequency of blood glucose monitoring

Blood glucose targets are not the same for everyone, as some residents are more at risk of hypoglycaemia (low blood glucose), for example residents with dementia, those with comorbidities and the frail. Each resident should have individual range and this should be documented clearly in the care plan. Not all residents need to have regular monitoring of blood glucose levels. Information on the monitoring of blood glucose can be found on the PAD: [https://surreyccg.res-systems.net/pad/Search](https://surreyccg.res-systems.net/pad/Search)

The safe recommended range for blood glucose in people with diabetes in a care home is \(^4,5\)

- Fasting: 6-8.5 mmol/l
- 2 hours after meals 8-12 mmol/l
- Random blood glucose not less than 9 mmol/l, above 11 mmol/l increases the symptoms of hyperglycaemia \(^5\)

Blood glucose monitoring can be an effective part of diabetes management if the results are acted on. A finger prick test gives an accurate measure of the level of glucose within the blood at the time the sample is taken. This allows action to be taken if blood glucose levels are too high (hyperglycaemia) or too low (hypoglycaemia) and improves understanding of glycaemic control.

A list of recommended blood glucose meters and lancets for your area can be found on the Surrey Prescribing Advisory Database ([https://surreyccg.res-systems.net/pad/Search](https://surreyccg.res-systems.net/pad/Search)).

An HbA1c test gives an average blood glucose measurement over 3 months. This is sometimes more useful than regular blood glucose monitoring. This should be checked a minimum of every six months and for many residents three-monthly HbA1c testing may be clinically useful. The usual target range is 53-64mmol/mol\(^6,5\). However, this is not the same for everyone, it may be higher in residents who have a high risk of hypoglycaemia but it should be noted that an HbA1c above 8% may increase the symptoms of hyperglycaemia which could lead to infection and hospital admission \(^13\). Each resident should have an individual range and this should be documented in the notes.

It is important that care home staff only perform blood glucose monitoring if they:
• have a good understanding about diabetes or have been asked to carry out a test by someone who does.
• have received training on blood glucose monitoring, including how to use the specified meter, storage of strips and quality control.
• are aware of how to interpret the readings obtained.
• understand the resulting actions to be taken.
• have demonstrated competence.

The resident’s individual management plan should clearly document if and when the blood glucose readings should be taken; see examples of ‘Food and Testing Diary’ (Appendix 5) and ‘Table of Testing Times for Residents who need to Test at Different Times of the Day’ (Appendix 6)
Additional monitoring may be required if:

- the resident is unwell or has an infection (sick day rules apply, see page 31)
- steroids are prescribed
- poor blood glucose control is suspected
- the resident is unaware of how they feel when hypoglycaemic
- the resident is prescribed Oral Nutritional Supplements.

NICE guidance\(^2\) recommends the monitoring of blood glucose should only be used if it is going to be a part of the resident’s self-management education to support lifestyle changes, adjust therapy or alert healthcare professionals. The continued benefit of blood glucose monitoring should be assessed in a structured way each year to ensure:

- there is a clear purpose for the monitoring
- how the results should be interpreted.

**Lancing Devices**

Residents should always be encouraged to self-test with their own lancing device (finger-pricker); an appropriate risk assessment must be in place. If this is not possible then a suitably trained member of staff can complete the test.

It is important that care home staff only use disposable single-use lancing devices that are used once and then the entire lancing device is discarded.

All staff involved in the management and provision of lancing devices should ensure that the right devices are provided for taking blood samples in multi-patient environments. In the report, Infection Prevention and Control Guidelines for Blood Glucose Monitoring in Care Homes\(^{14}\) the Health Protection Agency noted that some outbreaks of hepatitis B in care homes have been attributed to the incorrect use of lancing devices.

**Blood Glucose Monitoring Meters**

It is important that care home staff ensure they:

- know where the meter is kept
- are trained appropriately to use the meter
- understand the maintenance requirements of the meter, including any quality control procedures and calibrations.

Good practice is that quality control is performed whenever the meter is used.

It may be sensible for all residents in the home to use the same type of meter so staff become confident with the process for a particular meter.
Completing Blood Glucose Testing

It is important that care home staff ensure that they:

- have received training
- comply with all infection-prevention principles; wash hands and wear gloves
- explain the procedure they are about to complete clearly to the resident
- ensure the resident has clean hands that have been washed with soap and water
- keep the resident’s hand below the heart to aid blood flow.
- ensure the machine is clean and in working order and are able to calibrate if necessary
- check the tests strips are for the correct resident, correct for the machine being used and are in date
- select the site for testing; normally the side of a finger rather than the pad of a finger
- use a single lancing device
- follow the Glucose Meter Manufacturer’s instructions to complete the test
- clean the finger after the test and stem the blood flow
- document the result and any action required.
- inform a senior member of staff if the result is not in the resident’s target range.
- complete any actions required
- follow local guidelines for disposal of sharps.
Acute Complications

Hypoglycaemia

Hypoglycaemia (sometimes called hypo) is a lower than normal level of glucose in the bloodstream. Hypoglycaemia is a blood glucose level less than 4mmol/l and the symptoms come on quickly, although the resident may not notice them. **To reduce the risk of hypoglycaemia residents who are taking medicine for diabetes should have a fasting glucose less than 6 mmol/l**.

The resident may look or feel:

- Shaky
- Fast heartbeat
- Sweaty
- Dizzy or shaky
- Anxious
- Hungry
- Blurry vision
- Weak or tired
- Headache
- Nervous or upset

Hypoglycaemia increases the risk of falls. If a resident has had diabetes for a long time or has a history of dementia, warning signs of hypoglycaemia may be absent and the resident may not be aware they are suffering from hypoglycaemia; care staff will need to recognise these symptoms for them.

**Causes of Hypoglycaemia**

The existence of co-morbidities is an important factor in the occurrence of hypoglycaemia and includes:

- advanced age
- polypharmacy (five or more medicines)
- Changes in a resident’s medicine can cause hypoglycaemia.
- Some medicines can mask the signs of hypoglycaemia such as betablockers (e.g. bisoprolol)
- kidney or liver disease
recent hospital admission
history of hypoglycaemia
poor nutrition/poor appetite
not enough starchy carbohydrate
missed or delayed meals or snacks
alcohol, more than the recommended amount or taken on an empty stomach (see page 12)
fasting such as for a blood test, medical treatment or cultural reasons.
increased activity
cognitive impairment, for example dementia
use of a sulphonylurea medicine or insulin therapy
acute illness
hypoglycaemia unawareness.

Treatment of Hypoglycaemia (see Appendix 7)

1. Residents who are conscious, orientated and able to swallow

If the resident tells you they are hypoglycaemic or if you think the resident is hypoglycaemic act immediately. If you cannot check the blood glucose do NOT delay treatment. A resident experiencing hypoglycaemia who is conscious, orientated and able to swallow and can treat themselves with supervision should be given 15-20g quick acting carbohydrate of their choice, for example:

- 5-7 dextrose tablets
- 5 jelly babies
- 150-200ml pure fruit juice e.g. orange
- 3-4 heaped teaspoons of sugar dissolved in some warm not hot water
- Glucose gel for example Dextrogel® or GlucoGel®
- 1 bottle (60ml) Glucojuice®

This amount is usually enough to treat a hypoglycaemic event.

- The blood-glucose levels should be checked after 10-15 minutes. Follow the blood glucose monitoring procedure.
- If the level is still not above 4mmol/l, then the steps listed above should be repeated.
- If blood-glucose remains less than 4.0mmol/l after 30-40 minutes or 3 cycles, contact a doctor.

Once blood-glucose is above 4.0mmol/l and the resident has recovered, give a long acting carbohydrate of their choice, taking into consideration any specific dietary requirements, for example:

- one slice of bread or toast
- two biscuits
- 200-300mL glass of milk (not soya)
- the next meal (which must contain carbohydrate) within 30 minutes, DO NOT miss out any insulin injection, if due, (however, a dose review may be required). Continue to check the blood glucose level for 24 – 48 hours as some diabetes medicine can cause further hypoglycaemia.
Residents who are conscious but confused, disorientated, aggressive or unable to cooperate but are able to swallow

If the resident tells you they are hypoglycaemic or if you think the resident is hypoglycaemic act immediately. If you cannot check the blood glucose do NOT delay treatment. A resident experiencing hypoglycaemia who is conscious, orientated and able to swallow but needs assistance or instruction should be given 15-20g quick acting carbohydrate of their choice, for example:

- 5-7 dextrose tablets
- 5 jelly babies
- 150-200ml pure fruit juice e.g. orange
- 3-4 heaped teaspoons of sugar dissolved in warm not hot water
- Glucose gel for example Dextrogel® or GlucoGel®
- 1 bottle (60ml) Glucojuice®

This amount is usually enough to treat a hypoglycaemic event.

- The blood-glucose levels should be checked after 10-15 minutes. Follow the blood glucose monitoring procedure.
- If the level is still not above 4mmol/l, then the steps listed above should be repeated.
- If blood-glucose remains less than 4.0mmol/l after 30-40 minutes or 3 cycles, contact a doctor.

Once blood-glucose is above 4.0mmol/l and the resident has recovered, give a long acting carbohydrate of their choice, taking into consideration any specific dietary requirements, for example:

- one slice of bread or toast
- two biscuits
- 200-300mL glass of milk (not soya)
- the next meal (which must contain carbohydrate) within 30 minutes.

**DO NOT** miss out any insulin injection, if due, (however, a dose review may be required. Continue to check the blood glucose level for 24 – 48 hours\(^4\) as some diabetes medicine can cause further hypoglycaemia. Seek medical advice

2. **Residents who are very aggressive, unconscious or having seizures**

If you cannot check the blood glucose do NOT delay treatment. Do NOT put any oral glucose in the resident’s mouth

- A trained member of staff should give a glucagon injection but only if this is prescribed.
- Check blood glucose after 10-15 minutes
- Once the resident is conscious and can swallow give a long acting carbohydrate of their choice as described above but double the amount as residents given glucagon require more long acting carbohydrate.
- **Glucogen injection must only be administered by a qualified nurse as per written prescription instructions.**
- **Where an individual is living in a residential home then emergency ambulance services (999) must be called.**
If the resident loses consciousness and a trained member of staff is able to administer a glucagon injection, give this injection, seek urgent medical help - dial 999 and explain the action you have taken.

It is important that care home staff clearly document any hypoglycaemic event including:

- the time
- any known reason for hypoglycaemia
- when the GP was notified
- Ensure regular blood-glucose monitoring is continued for 24 to 48 hours.

**Prevention of Hypoglycaemia**

Prevention can improve the resident’s quality of life, confidence and compliance and potentially reduce unnecessary hospital admissions. This can be achieved by the following:

- Keep the blood glucose level in the target range.
- Make sure diabetes medicine is the correct dose, taken at the correct time in relation to meals.
- Make sure there is starchy carbohydrate with each meal.
- The resident may need a snack before increased activity (for example a trip out or physiotherapy).
- Keep a food diary for the resident and ask the community dietitian to review.
- Alcohol should not be taken in excess or on an empty stomach
- If the resident’s blood glucose is regularly low their medicine will need to be reviewed.

**‘Hypo boxes’**

It is important that care home staff have rapid access to necessary treatment for a hypoglycaemic event. A hypo box is required and all staff should know where it is kept for easy access. A designated plastic box with lid should be labelled and attached on the inside lid laminated instructions on the treatment of hypoglycaemia (see Appendix 7).

**Example contents of a hypo box:**

- 2 x 200ml cartons of pure fruit juice
- 2 packets of glucose tablets
- dextrose gel
- 1 bottle (60ml) Glucojuice®
- A small packet of biscuits
- Access to glucagon injection which should be either stored in the fridge or stored at room temperature and labelled with an expiry date of 18 months.

The hypo box should be checked daily to ensure all items are in place and in date. The contents should be replaced after use.

**Quiz**

1. At what level is hypoglycaemia?
2. What are the signs and symptoms of hypoglycaemia?
3. Where is the hypo box stored?
4. How often is it checked?
5. Do you need to take any action?
Hyperglycaemia

Hyperglycaemia is an excess of glucose in the bloodstream. The symptoms may come on slowly over days or even weeks.

The resident may feel:

- Very thirsty
- Needing to pass urine more often than usual
- Dry skin
- Very hungry
- Sleepy
- Blurry vision
- Infections or injuries heal more slowly than usual

Treatment for Hyperglycaemia

Prevention of hyperglycemia relies on management of blood glucose levels and diabetes medicine if necessary.

Control of high blood sugar is important to prevent complications caused by chronic hyperglycemia. A GP may need to review the treatment plan for a resident who becomes hyperglycemic and they may decide to take one of the following actions:

- recommend dietary changes
- recommend more movement and / or exercise
- recommend regular blood glucose monitoring.
- review and alter the dose of the medicine, add another medicine or change the medicine

Risk Factors for Hyperglycaemia

These include:

- an omission or reduction of insulin or medicine for diabetes
- increased carbohydrate / sugar intake
- reduced activity
- an infection such as ‘flu
- severe illness
- an emotional or psychological upset
- adding a medicine can make blood glucose levels rise such as steroids eg. Prednisolone
- stopping a resident’s diabetes medicine can make blood glucose levels rise
Increase blood glucose monitoring during periods of hyperglycaemia and follow the Action Plan for blood glucose results. (Appendix 8)

**Sick Day Rules**

Common illnesses which upset the control of diabetes include:

- the common cold
- ‘flu
- sore throat
- stomach upset
- urinary tract infections.

Remember, blood glucose levels may rise even if the resident is unable to eat or drink.

Blood glucose levels should be recorded at least four times a day during periods of illness. Check blood or urine for ketones. If ketones are present seek medical advice immediately. It is important for care home staff to ensure that:

- insulin is still administered
- oral medicine is still administered unless the resident is vomiting or has severe diarrhoea. If the resident cannot take their medicine **seek medical advice**.
- ensure the resident drinks plenty of fluids such as water, diet or sugar free drinks to prevent dehydration.
- If meals cannot be tolerated replace with either
  
  - cereal
  - porridge
  - soup and bread
  - milk pudding
  - ice cream
  - plain biscuits.

If the resident cannot eat, meals can be replaced with sugary fluids such non-diet lemonade, cola, or fruit juice which can be sipped slowly over the hour. Letting fizzy drinks go flat may help keep them down. **Sips of sugary drinks are particularly vital if the resident is not eating.** They can also eat sweets such as jelly beans or jelly babies.

**If the resident is vomiting or unable to eat or drink seek medical advice immediately.**

**Diabetic Ketoacidosis and Hyperglycaemic Hyperosmolar State**

In residents with type 1 diabetes prolonged episodes of hyperglycaemia may lead to a life-threatening condition called Diabetic Ketoacidosis (DKA). If a resident develops this then call 999 immediately.

Symptoms of DKA include:

- increasing thirst
- nausea and vomiting
- blurred vision
- rapid and deep breathing
• stomach pain
• altered level of consciousness
• A smell of pear drops (acetone) on the breath.

Certain medicines, used to treat type 2 diabetes called sodium-glucose co-transporter 2 (SGLT2) inhibitors (canagliflozin, dapagliflozin, or empagliflozin): can have a rare side effect where residents present with symptoms of DKA but instead of having high blood glucose levels they present with glucose levels in the normal range.

In residents with type 2 diabetes prolonged episodes of hyperglycaemia may lead to a life-threatening condition called Hyperosmolar Hyperglycaemic State (HSS).

Symptoms of HHS include:
• frequent urination
• increasing thirst
• nausea
• dry skin
• disorientation, drowsiness or loss of consciousness.

Increase blood glucose monitoring to at least 4 times a day. Check blood or urine for ketones. If ketones are present or the resident has symptoms of DKA or HSS they should be sent to hospital immediately.

**IF A RESIDENT LOSES CONSCIOUSNESS THEN THEY SHOULD BE SENT TO HOSPITAL IMMEDIATELY.**

*See appendix 8 for an action plan for blood glucose results*

**Reflection**
- Are any residents within your care home at risk of DKA or HSS?
- Do you have a ketone meter?
- Do you know how to use it?
- Do you need to take any action?

**Quiz**
1. Give an example of when blood glucose monitoring should be used
2. Why should only single-use lancets be used?
3. When should a Blood Glucose Meter be calibrated?
4. What are the symptoms of hyperglycaemia?
5. What action should you take if a resident has a blood glucose reading of:
   - 4 mmol/l?
   - 10 mmol/l?
   - More than 15mmol/l on more than one occasion?
6. What should you do if you suspect a resident is suffering from DKA or HSS?

**Complications Associated with Diabetes**

Below is a list of possible complications that may occur due to poorly controlled blood glucose, cholesterol or blood pressure. They may also occur due to the long duration the person has been living with diabetes.
<table>
<thead>
<tr>
<th><strong>Day to Day Complications</strong></th>
<th><strong>Details</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoglycaemia</td>
<td>Blood glucose below 4.0 mmol/l or personal low reading. Consider seeking advice to alter medicine/insulin. Treat immediately as per protocol.</td>
</tr>
<tr>
<td>Hyperglycaemia</td>
<td>Raised blood glucose above 16mmols/mol. Seek advice from GP if occurs on regular basis. May be indicator Diabetic ketoacidosis Type 1 diabetes) or Hyperosmolar Hyperglycaemic State (Type 2 diabetes).</td>
</tr>
<tr>
<td>Urinary tract infections</td>
<td>May be due to persistently high blood glucose.</td>
</tr>
<tr>
<td>Unsteady walking balance, pain in the leg, tingling of the feet</td>
<td>Due to damage of the nerves or blood vessels to the feet (Neuropathy and Peripheral Vascular Disease). Ensure safe footwear.</td>
</tr>
<tr>
<td>Foot problems</td>
<td>Neuropathy can cause change in shape of feet. Increased risk of skin breaks and deformed nails. Ensure regular podiatry to keep nails trimmed.</td>
</tr>
<tr>
<td>Healing of wounds</td>
<td>Cuts and lesions take longer to heal.</td>
</tr>
<tr>
<td>Altered appetite</td>
<td>Nerve damage to gut leading to altered appetite and digestion of food. (Gastroparesis)</td>
</tr>
<tr>
<td>Mental health</td>
<td>Depression and anxiety</td>
</tr>
<tr>
<td>Hearing loss</td>
<td>Higher risk of developing hearing problems</td>
</tr>
<tr>
<td>Gum disease</td>
<td>Higher prevalence of gum disease</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Long term Complications</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Problems</td>
<td>Diabetic retinopathy, glaucoma and cataracts.</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Raised blood pressure. Will be monitored by GP</td>
</tr>
<tr>
<td>Heart problems and stroke</td>
<td>Increased risk if blood pressure, cholesterol and blood glucose not adequately controlled.</td>
</tr>
<tr>
<td>Kidney problems</td>
<td>Nephropathy.</td>
</tr>
</tbody>
</table>

**Diabetes and Eye Health**

Visual loss due to diabetic retinopathy, i.e. damage to the retina in the eye, will reduce the resident's quality of life.

It is important for care home staff to ensure that:
• annual diabetic eye screening occurs. GP will refer to local Diabetes Retinal Screening Service as this can detect retinopathy early and allow for treatment
• regular eye tests at optician occur.

Diabetes and Foot Health

Podiatry (diagnosis, treatment, and prevention of diseases of the foot) plays an important role in the education, monitoring and treatment of residents with diabetes. Diabetes foot disease is a preventable disabling condition. It is important that all residents with diabetes have daily monitoring of their feet in order that problems can be found early and action taken immediately. Complications of diabetes foot disease may include:

• neuropathy (dysfunction of one or more peripheral nerves causing numbness or weakness)
• impaired circulation
• deformity
• ulceration
• amputation.

During daily personal care it is important for care home staff to ensure that:

• the resident’s feet are washed daily and dried thoroughly
• the resident’s feet are examined daily for cuts or breaks in the skin, including between the toes and around the heels
• clean, dry dressings are applied to any cuts or breaks until they are healed: do not tie or wrap dressings around toes
• a moisturiser should be applied to any areas of dry skin but NOT between the toes
• any signs of infection, such as redness, swelling, discharge, pain, smell or heat, are reported immediately to the GP
• toenails are filed weekly reducing both the length and thickness.
• all corns and callouses are treated regularly by a registered podiatrist
• the resident wears well-fitting socks, stockings or tights
• the resident wears well-fitting shoes that can be loosened during the day if the feet become swollen
• direct heat on feet from electric blankets and hot water bottles is avoided
• the circulation and sensation in the resident’s feet are checked annually by a suitably trained and competent professional.
Diabetes and Kidney Health

Residents with diabetes are at risk of damage to the small blood vessels in the kidneys. The kidneys then cannot function as well and cannot filter away the body’s waste products as efficiently as they should. This leads to the buildup of waste products in the blood. The resident’s body will retain more water and salt than it should, which can result in weight gain and ankle swelling. There may also be protein in the urine.

Diabetes and Stroke

If it is not controlled, diabetes can double the risk of having a stroke because high levels of glucose in the blood can damage the blood vessels making them harder and narrower and more likely to become blocked. If this happens in a vessel leading to the brain, then it could result in a stroke.

It is important for care home staff to ensure that the resident:

- eats a healthy, balanced diet based on their own dietary likes and dislikes
- maintains a healthy weight
- is as active as they are able
- is encouraged to give up smoking if applicable as smoking damages artery walls and makes blood more likely to clot.

Diabetes and Heart

High levels of glucose in the blood can damage the walls of the arteries allowing fatty deposits to develop. If these fatty deposits develop in the coronary arteries (i.e. the arteries that supply the heart muscle with oxygen-rich blood) then coronary heart disease may develop which can then cause angina or a heart attack.

It is important for care home staff to ensure that the resident:

- eats a healthy, balanced diet based on their own dietary likes and dislikes
- maintains a healthy weight
- is as active as they are able
- is encouraged to give up smoking if applicable

Diabetes and Pain

Common causes of pain in residents with diabetes include:

- peripheral neuropathy, characterised by a burning pain or an increased sensitivity to pain
- Charcot foot (deformed shape of the foot)
- foot ulceration
- peripheral arterial disease (a build-up of fatty deposits in the arteries which restricts blood supply to leg muscles)
- musculo-skeletal pain
- osteoarthritis
- back pain.

It is important for care home staff to ensure that:

- the resident’s blood glucose levels are controlled as this may help to reduce pain due to peripheral neuropathy
- pain relief medicine is used appropriately
• a vascular risk assessment is completed
• foot care is part of the daily routine

**Diabetes and Mental Health**

A diagnosis of dementia can often lead to denial, anger, fear and/or depression; this can range from a mild feeling of irritation to serious clinical unhappiness.

Diabetes and mental health is often underestimated. Medicine and care plans may be altered to ensure the resident has the best quality of life.

Denial is a difficult emotion and happens when a resident does not believe that something has happened to them. Many residents experience denial on diagnosis of diabetes.

A diagnosis of diabetes may seem unfair and the changes required too difficult to deal with and may result in them neglecting their diabetes management and not complying with the recommended treatment.

Diabetes can be a difficult condition to accept and it is common for depression, a feeling of sadness that lasts longer than a week, to develop before or following a diagnosis.

It is important for care home staff to ensure that any changes in mood are documented and reported so that appropriate care and support can be offered.

Depressive symptoms have been correlated with:

- Worsened blood glucose levels and diabetes complications, such as coronary heart disease
- Greater difficulty sticking to diet, exercise and medication regimes
- Higher rates of calling an ambulance
- Medical cost of clients with diabetes and moderate to severe depression have been found to be 51-86% higher than clients with reported low levels of depression

"Diabetes distress is the extra burden that people with diabetes have to carry. They have to do everything that other people do -- take care of work, family, finances -- and in addition they have to make sure to check their blood sugar, remember to take their medicine and/or adjust their insulin doses, count carbohydrates when they eat." Alicia McAuliffe-Fogarty, vice president of lifestyle management at the American Diabetes Association.

It is important for care home staff to ensure that any changes in mood are documented and reported so that appropriate care and support can be offered.

The Surrey Improving Access to Psychological Services (IAPT) can provide Cognitive Behavioural Therapy tailored for people living with Long Term Conditions, in the form of: Face to face sessions; Telephone based sessions; Online Therapy (including Space for Diabetes Wellbeing); Counselling for depression

The right help at the time you need it.

See appendix 9 for IAPT contact details

**Diabetes and Hearing Loss**

It is thought that the high blood glucose levels associated with diabetes cause damage to the small blood vessels in the inner ear, similar to the damage in the eyes and the kidneys. Harmful outcomes can occur in the ear as residents with diabetes become older.
It is important for care home staff to ensure that they understand:

- the best way to communicate with residents with hearing loss
- how to use and clean hearing aids
- how to check ears for wax and how to use appropriate drops to treat wax.

**Diabetes and Oral Health**

Residents with diabetes have a risk for periodontal (gum) disease. This is an infection of the gum and bone that hold the teeth in place and can lead to painful chewing difficulties and tooth loss. Additionally, a dry mouth can cause soreness, ulcers, infections and tooth decay. It is again thought to be associated with the high blood glucose levels causing damage to the small blood vessels in the gums.

It is important for care home staff to ensure that:

- there is daily brushing and flossing as indicated
- the residents attend regular dental check-ups
- there is good blood glucose control.

**Diabetes and Gastro-Intestinal Symptoms**

The entire gastro-intestinal (GI) tract can be affected by diabetes from the oesophagus (the long tube that carries the food from the throat to the stomach) to the rectum. Because of this, symptoms can be varied and as they are not commonly associated with diabetes, could go untreated. People with diabetes can develop gastroparesis also called delayed gastric emptying as a complication of diabetes. The nerves that help food move through the gastric tract are damaged and food remains undigested in the stomach. Some of the signs and symptoms are an early feeling of fullness during a meal, nausea, vomiting, weight loss, abdominal bloating and difficulty in controlling blood glucose levels. If these symptoms occur in a resident with diabetes and undiagnosed gastroparesis then the resident may need to be referred to the GP.

**Diabetes and Infections**

Diabetes can slow down the body’s ability to fight infection and to heal; high glucose levels allow bacteria to grow and infections to develop more quickly. Early treatment can prevent more serious issues.

Infections themselves can cause blood glucose levels to rise, see Sick Day Rules on page 31

**Quiz**

1. Which common illnesses could upset the control of diabetes?
2. Name four complications of having diabetes
3. Why is retinal screening important?
4. What would be the signs of poor foot care?
5. How does poor mental health, such as depression, affect a resident with diabetes?

**Diabetes and Dementia**

Diabetes and dementia are both progressive, long term conditions. Residents with type 2 diabetes may have twice the risk of developing dementia compared with people without diabetes\(^6\). In combination:

- dementia makes management of diabetes difficult
- poorly controlled diabetes has an impact on the safety and well-being of residents with dementia.
There are many different types of dementia; the most common is Alzheimer’s but there is also vascular dementia, Lewy body dementia, Parkinson’s, Creutzfeldt-Jakob disease (CJD) and Wernicke-Korsakoff syndrome (alcohol-related dementia). Early symptoms include:

- forgetfulness
- repetitiveness
- short-term memory loss
- difficulty in finding the right words
- change in behaviour.

As the condition gradually worsens the resident may become

- disorientated
- uncertain in social situations
- unable to complete daily living skills
- unable to make decisions.

**Why is Early Diagnosis of Either Condition Important?**

A cognitive assessment at the time of admission to the care home and at annual intervals is recommended. It is important to explain to the resident why you are completing this assessment and that their consent is documented. This is a general assessment and a more formal assessment can be carried out by the GP. There may be benefits from early detection of mental impairment such as:

- improvements in quality of life
- more informed care planning.

Residents with diabetes are encouraged to manage the condition themselves. Dementia could lead to difficulties with:

- self-management
- adherence with medicine
- safe insulin injections.

Having both conditions may mean residents require support to manage higher targets for blood glucose and blood pressure to keep them safe and to help them make sensible decisions.

Diagnosing diabetes early in residents who already have dementia will ensure they receive regular reviews and management of any risk factors that can lead to developing diabetes complications.
**Nutritional Barriers**

Residents with dementia may be anorexic or undernourished, have difficulties feeding and have an inability to communicate their needs. It is important that care home staff employ strategies that maximise dietary intake including:

- serving one course at a time, as this can reduce confusion
- using resident's own crockery, as this generates greater familiarity
- allowing grazing and extra time for the resident to return to their meal
- serving something that they like, e.g. ice cream, milk shakes, when other food is refused; this reduces the risk of hypoglycaemia
- reducing environmental stimuli, e.g. turning off the TV in the dining area, if aggressive or negative behaviours are present during mealtimes
- prompting, encouraging and supporting as required.

**Treatment**

All currently available treatments for diabetes can be used in care home settings for residents with diabetes who have mental health needs. Thought should be given to ensure:

- insulin and / or medicine regimens are simplified and optimised to avoid hypoglycaemia
- symptoms of hypoglycaemia are clearly documented and the resident is observed for these signs
- blood glucose monitoring is kept to a minimum and only used to inform actions
- treatments do not require frequent renal and hepatic function blood tests
- adequate nutritional planning is in place
- optimising blood glucose and blood pressure levels, ensuring adequate hydration and avoiding electrolyte disturbances will also help to maintain cognitive function.

For every resident, there should be an individualised care plan and treatment should be tailored to food intake and their dietary likes and dislikes.
Diabetes and Dysphagia

Diabetic neuropathy (nerve damage) is a common complication of diabetes. It is often due to diabetic microvascular injuries (involving small blood vessels that supply the nerves), macrovascular conditions (diseases and conditions of the large blood vessels) and/or chronic hyperglycemia.

This nerve damage can result in dysphagia - a difficulty in swallowing. Administration of medicines then becomes complex with pharmaceutical and legal challenges. Seek advice from the Care Home Pharmacist for all patients recommended a diet modification by a Speech and Language Therapist (SLT) due to any swallowing issues.

The International Dysphagia Diet Standardisation Initiative have published standard definitions for texture modified foods and thickened fluids for people with dysphagia. This framework consists of a continuum of eight levels (0 – 7) and includes descriptors for both liquid thickness and food texture levels, (see diagram below).

These descriptors can be used to support safe oral administration of medicines and allow, where possible, tablets and capsules to be administered whole; i.e. a licensed medicine in a suitable formulation to meet the patient’s needs. Examples of this would be:

- an orodispersible tablet (tablets that can be dissolved in the mouth)
- a small tablet or capsule swallowed whole with a teaspoon of food of a suitable consistency (providing there is no interaction).

It is a misconception that patients with dysphagia cannot swallow solid oral formulations and must be prescribed liquids. Some thinner liquid medicines can increase the risk of coughing and inhaling the liquid into the lungs (aspiration). To facilitate a safer swallow medicine may need to be formulated as thicker fluids or mixed with textured food. This may mean that licensed medicine may have to be administered in an unlicensed manner, e.g.:

- crushing a tablet and mixing with a small amount of pureed food
- dispersing a tablet a 10ml of water and mixing with slightly thick fluid
- opening a capsule and sprinkling the contents into a small amount of liquidised food.

This will need to be clearly indicated in the directions and on the Care Plan.
Not all tablets and capsules are suitable for crushing, dispersing or opening. Contact a pharmacist for information and advice on whether this form of manipulation is appropriate. (Usually pharmacists will look at information found in the Handbook of Drug Administration via Enteral Feeding Tubes\textsuperscript{18}). The table below gives some examples.

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Comments / Alternative</th>
</tr>
</thead>
</table>
| Metformin 500mg tablets | 1. Crush the tablets well and mix with water (unlicensed*)  
                        2. Metformin 500mg/5ml solution  
                        Do not crush Modified-Release (MR) tablets as this may damage the mechanism for slowing absorption. |
| Gliclazide 80mg tablets | 1. Disperse tablets in 10ml of water and mix with water or orange juice (unlicensed*)  
                        2. Gliclazide 80mg/5ml oral suspension (unlicensed*, most cost-effective strength, shelf life is 30 days once opened)  
                        Do not crush Modified-Release (MR) tablets as this may damage the mechanism for slowing absorption. |
| Sitagliptin         | 1. Consider alternative third line options such as insulin or pioglitazone tablets  
                        2. No information available on administering sitagliptin to patients with swallowing difficulties. The tablets will dissolve rapidly in water but they are film-coated and may taste unpleasant |
| Pioglitazone        | 1. Crush the tablets well and mix with water (unlicensed*)                                |
| Dapagliflozin       | 1. Consider alternative options as tablets must be swallowed whole                      |

* Manipulation of a licensed product in this way will be outside of the product’s marketing authorisation / license. Decisions should always be made on an individual basis with the specific needs and best interests of the resident taken into account.

**Diabetes and Enteral Feeding Tubes**

The use of enteral feeding tubes (EFT) has increased as a result of improved awareness of the importance of maintaining adequate nutritional intake. An enteral feeding tube provides a way of providing nutrition when oral intake is inadequate or not advised. This has implications for all involved in prescribing, supplying and administering the medicine as they become liable for any adverse event that the resident may experience. The medicine policy within the home must contain specific information relating to safe administration of medicine via a feeding tube as this has implications for all those involved in prescribing, supplying and administering the medicine both legally and professionally.

Information on how to administer a medicine via an EFT safely should be discussed with a pharmacist. (Usually pharmacists find this information from the Handbook of Drug Administration via Enteral Feeding Tubes\textsuperscript{18})

Medicine volumes and flushes should always be recorded on a fluid balance chart. It is good practice to flush the tube before and after each medicine administered and before recommencing the feed. This will help to prevent interactions between the feed and the medicines being administered.

Regular medicine reviews are essential for all residents receiving medicine via an EFT.
When deciding which medicine formulation is appropriate for administration via an EFT, several factors need to be considered. It is not necessarily correct to assume that a liquid is preferable to a tablet; there may be unwanted side-effects to the excipients (contents) in a liquid. The choice of formulation should also consider the needs of the resident and the practicality of the administration. For example, guidance on how to administer a tablet that disperses is given below:

1. Stop the enteral feed.
2. Flush the enteral feeding tube with the recommended volume of water.
3. Check: can the medicine be administered with feed, or should a specific time interval be allowed before administering the medicine?
4. Select an appropriate size and type of syringe.
5. Remove the plunger and place the tablet into the barrel of the syringe.
6. Draw 10 ml of water into the syringe and allow the tablet to disintegrate, shaking as necessary.
7. Inspect the syringe contents to ensure that there are no large visible particles that might block the tube.
8. Flush the medicine dose down the enteral feeding tube.
9. Draw an equal volume of water into the syringe and flush this via the enteral feeding tube.
10. Finally, flush with the recommended volume of water.
11. Re-start the feed, unless a specific time interval is needed following the administration of the medicine.

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Option</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metformin 500mg tablets</td>
<td>Tablets do not disperse well in water but can be crushed and mixed with 10ml of water to form a fine suspension that flushes easily. (Unlicensed).</td>
<td>Feed decreases, delays and reduces the absorption of metformin; however the dose should be taken with or after the feed. 500mg/5ml oral solution available.</td>
</tr>
<tr>
<td>Gliclazide 80mg tablets</td>
<td>Do not crush tablets as this may affect the pharmacokinetics and glycaemic control. Tablets disperse in 10ml of water within 5 minutes to give a coarse dispersion that flushes without blockage but leaves a residue on the syringe and possibly inside the tube. (Unlicensed).</td>
<td>No specific interaction with food is documented. As it is possible that some residue may be left in the syringe blood glucose levels must be monitored closely.</td>
</tr>
</tbody>
</table>
**End of Life Care**

End of Life Care (EoLC) involves providing support so that every resident is kept as comfortable as possible, is not in any distress and dies with dignity.

Care home staff will need to be proactive in recognising the onset of a resident’s terminal decline in health and liaising with the appropriate End of Life Care (EoLC) Services to access high quality EoLC, symptom management and the provision of psychosocial support.

It is important for care home staff to be aware that at the end of life:

- maintenance of a normal level of glucose in the blood may be detrimental to quality of life and an inappropriate goal
- a glycaemic range of 7–10 mmol/l (fasting) and 9–12 mmol/l (after a meal), or even higher in the final days, may enhance comfort
- glucose control may worsen with the presence of certain malignant tumours, infection and/or the use of steroids
- neuropathic pain can intensify during illness and appropriate pain management will be required
- support should be given at meal times to maintain weight
- alternative, more suitable forms of the medicine, e.g. liquids, may be required
- insulin and/or diabetic medicines could be discontinued
- unnecessary investigations such as blood glucose testing are burdensome and should be avoided, unless glucose control is not steady and/or recurrent hypoglycaemia has been an issue
- dehydration should be avoided
- gastro-intestinal disorders can worsen.

**You matter because you are. You matter to the last moment of your life and we will do all we can; not only to help you die peacefully, but also to live until you die.**

Dame Cicely Saunders, Pioneer in Hospice Care

**Quiz**

1. Explain the role of exercise in the prevention or delay of progression of type 2 diabetes
2. List three strategies that can help maximise dietary intake for patients with dementia
3. Is it important to make sure a patient with diabetes has good glucose control if they are the end of their life?
4. What are the aims of diabetic care in the final days?
Contacts
Write any useful contacts you may need to manage your patients with diabetes here

<table>
<thead>
<tr>
<th>Name and Role</th>
<th>Address</th>
<th>Telephone Number</th>
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</thead>
<tbody>
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</tbody>
</table>
Appendix 1: The Mental Capacity Act (MCA) and Care Planning

- The Mental Capacity Act (MCA) 2005 ensures a person-centred care and respects resident's rights
- Care staff who support residents are required to work within the framework of the MCA and follow the MCA Code of Practice (the Code)
- Care planning is key for ensuring that the MCA is implemented
- Care and support plans should promote the resident’s freedom to make decisions about their care and support as far as they are able
- Care planning should show how residents are supported to be involved in developing and reviewing their care
- Care plans must provide evidence of consent, or, where there is lack capacity to consent, there must be a clearly recorded assessment of capacity with supporting evidence
- Care planning documents must demonstrate how any decisions made on behalf of a resident who does not have capacity are made in their best interests
- Care and support plans must be regularly reviewed to make sure they continue to meet resident’s changing needs and choices
- Care planning documents must demonstrate how residents who are deprived of their liberty have their rights protected.

Appendix 2: Diabetes Assessment form
### Initial Screening

<table>
<thead>
<tr>
<th>Any Signs and symptoms of diabetes?</th>
<th>Yes</th>
<th>No</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thirst</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency of urination</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passing urine at night</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lethargy</td>
<td></td>
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<td></td>
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<tr>
<td>Blurred vision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight loss</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infections</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Diagnosis of Diabetes

<table>
<thead>
<tr>
<th>Test</th>
<th>HbA1c</th>
<th>Fasting glucose</th>
<th>Random glucose</th>
<th>Oral glucose tolerance test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Completed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Clinical Profile

<table>
<thead>
<tr>
<th>Observation</th>
<th>Weight</th>
<th>Height</th>
<th>BMI</th>
<th>Blood Pressure</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lying</td>
<td>Standing</td>
</tr>
<tr>
<td>Date</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Result</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Blood Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Cholesterol</th>
<th>Electrolytes</th>
<th>eGFR</th>
<th>Liver Function Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Completed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Past Medical History
<table>
<thead>
<tr>
<th>Review</th>
<th>Yes</th>
<th>No</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Known Allergies?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Family History of Diabetes?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any History of Coronary Heart Disease?</td>
<td></td>
<td></td>
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<tr>
<td>Any History of Stroke?</td>
<td></td>
<td></td>
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<tr>
<td>Any History of Peripheral Artery Disease?</td>
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<tr>
<td>Any History of Hypertension?</td>
<td></td>
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</tr>
<tr>
<td>Any History of Chronic Kidney Disease?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>History of hypoglycaemia?</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Completed form:</th>
<th>Stored in Care Plan</th>
<th>Y / N</th>
<th>Shared with GP</th>
<th>Y / N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Shared with Other Healthcare Professional (details): ________________________________

<table>
<thead>
<tr>
<th>Review</th>
<th>Referral for Retinal Screening</th>
<th>Referral to Podiatrist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments</td>
<td></td>
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</tr>
</tbody>
</table>

| Action Taken                                |                                |                        |

| Completed By                                |                                |                        |
| Designation                                 |                                |                        |
| Signature                                   |                                |                        |

**Appendix 3: Self-Medicating Risk Assessment Form**

**Name of Resident:** .................................................................
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Y/N</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Can the resident verbalise that he / she wants to self-medicate?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Can the resident explain what each medicine is for? This does not necessarily need to be in medical terms, e.g. furosemide: this is my water tablet digoxin: this is for my heart</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Can the resident read the instructions on his / her medicines? e.g. a) the dose required b) how many times it is to be taken c) any special instructions i.e. before food... d) date it expires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Is the resident aware that their medicine can cause side effects and that any concerns that they may have should be reported to a member of staff?</td>
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<tr>
<td>5. Will the resident inform the person in charge when his / her medicine is ‘running out’?</td>
<td></td>
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<tr>
<td>6. Does the resident need any aids to assist him / her in self-medicine? e.g. not child proof containers if dexterity is a problem</td>
<td></td>
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<tr>
<td>7. Does the resident always agree to store the medicine in the secure storage provided in his / her room?</td>
<td></td>
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</tr>
<tr>
<td>8. Will the resident only take medicines as prescribed for him / her and if any Homely Remedies are used a member of staff will be informed in case of any drug interactions?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature of resident: .............................................................................

Is the Resident deemed suitable for self-administration:     Yes / No

Signature of member of staff: .................................................................

Designation:.............................................................. Date.......................  

**Appendix 4: Eight Rights of Medicine Administration**

1. Right patient
• Check the name on the order and the patient.
• Use 2 identifiers.
• Ask patient to identify himself/herself.
• When available, use technology (for example, bar-code system).

2. Right medicine

• Check the medicine label.
• Check the order.

3. Right dose

• Check the order.
• Confirm appropriateness of the dose using a current drug reference.
• If necessary, calculate the dose and have another nurse calculate the dose as well.

4. Right route

• Again, check the order and appropriateness of the route ordered.
• Confirm that the patient can take or receive the medicine by the ordered route.

5. Right time

• Check the frequency of the ordered medicine.
• Double-check that you are giving the ordered dose at the correct time.
• Confirm when the last dose was given.

6. Right documentation

• Document administration AFTER giving the ordered medicine.
• Chart the time, route, and any other specific information as necessary. For example, the site of an injection or any laboratory value or vital sign that needed to be checked before giving the drug.

7. Right reason

• Confirm the rationale for the ordered medicine. What is the patient’s history? Why is he/she taking this medicine?
• Revisit the reasons for long-term medicine use.

8. Right response

• Make sure that the drug led to the desired effect. If an antihypertensive was given, has his/her blood pressure improved? Does the patient verbalize improvement in depression while on an antidepressant?
• Be sure to document your monitoring of the patient and any other nursing interventions that are applicable.
## Appendix 5: Food and Testing Diary (adapted from Portsmouth Diabetes Care)

Residents name:

<table>
<thead>
<tr>
<th>Day</th>
<th>Blood Sugar Reading before Breakfast</th>
<th>Breakfast: Foods Eaten</th>
<th>Blood Sugar Reading 2 hours after Breakfast</th>
<th>Blood Sugar Reading before Lunch</th>
<th>Lunch: Foods Eaten</th>
<th>Blood Sugar reading 2 hours after lunch</th>
<th>Blood Sugar Reading before Evening Meal</th>
<th>Evening Meal: Foods Eaten</th>
<th>Blood Sugar Reading after evening meal</th>
<th>Blood Sugar Reading at Bedtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td></td>
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</table>
**Appendix 6: Table of Testing Times for Residents who need to Test at Different Times of the Day.**

Residents name:

<table>
<thead>
<tr>
<th>Day</th>
<th>Before breakfast</th>
<th>Tuesday 2hrs. after breakfast</th>
<th>Wednesday Before lunch</th>
<th>Thursday 2hrs. after lunch</th>
<th>Friday Before dinner</th>
<th>Saturday 2hrs. after dinner</th>
<th>Sunday Before bedtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
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<td>Wednesday</td>
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</tbody>
</table>
**Appendix 7:**

**Treatment of Hypoglycaemia**

<table>
<thead>
<tr>
<th>The resident can treat themselves, may require supervision</th>
<th>The resident cannot treat themselves and requires help</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Check blood glucose. If the blood glucose is 4-5mmol/l the resident may require a snack or next meal. If the blood glucose is below 4 mmol/l give 15-20g carbohydrate either:</strong></td>
<td><strong>If the blood glucose is below 4mmol/l and the patient is conscious and able to swallow but may need assistance and instruction give 15 -20g carbohydrate either:</strong></td>
</tr>
<tr>
<td>1-2 tubes glucose gel</td>
<td>1-2 tubes glucose gel</td>
</tr>
<tr>
<td>1 bottle (60ml) Glucojuice®</td>
<td>1 bottle (60ml) Glucojuice®</td>
</tr>
<tr>
<td>200 mls (small carton) smooth fruit juice</td>
<td>200 mls (small carton) smooth fruit juice</td>
</tr>
<tr>
<td>5-7 dextrose tables</td>
<td>5-6 dextrose tables</td>
</tr>
<tr>
<td>3-4 teaspoons sugar dissolved in warm water</td>
<td>3-4 teaspoons sugar dissolved in warm water</td>
</tr>
<tr>
<td>5 jelly babies</td>
<td>5 jelly babies</td>
</tr>
</tbody>
</table>

The blood-glucose levels should be checked after 10-15 minutes. Follow the blood glucose monitoring procedure. If the level is still not above 4mmol/l, then the steps listed above should be repeated. If blood glucose remains less than 4.0mmol/l after 30-40 minutes or 3 cycles, **contact a doctor or dial 999.** When the patient feels better give long acting carbohydrate (starchy food) – banana, 2 digestive biscuits, 1 slice bread/toast 200-300mls milk (not soya), normal meal if it is due.

<table>
<thead>
<tr>
<th>The resident cannot treat themselves and requires help</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Able to Swallow</strong></td>
</tr>
<tr>
<td><strong>Unable to swallow</strong></td>
</tr>
<tr>
<td>If the blood glucose is below 4mmol/l and the patient is unable to swallow or is not conscious, or is very aggressive</td>
</tr>
<tr>
<td>The resident should be put in the recovery position without causing injury (on their side with their head tilted back)</td>
</tr>
<tr>
<td>Do NOT put glucose treatments in their mouth i.e. GlucoGel</td>
</tr>
<tr>
<td><strong>a trained member of staff</strong> should give:</td>
</tr>
<tr>
<td>• a glucagon injection but only if this is on the resident’s medicine chart</td>
</tr>
<tr>
<td>• If the resident loses consciousness and a trained member of staff is able to administer a glucagon injection, give this injection, seek urgent medical help - dial 999 and explain the action you have taken. Glucagon injection can only be given once.</td>
</tr>
<tr>
<td>• Check blood glucose after 10-15 minutes. Follow glucose monitoring procedure</td>
</tr>
</tbody>
</table>

If the resident does not respond to treatment or loses consciousness or no one is available to administer a glucagon injection, seek urgent medical help and dial 999. Once the resident is conscious and can swallow give a long acting carbohydrate (starchy food) – banana, 2 digestive biscuits, 1 slice bread/toast 200-300mls milk (not soya), normal meal if it is due but double the amount as residents given glucagon require more long acting carbohydrate.
Appendix 8: Action Plan for Blood Glucose Results

If the blood glucose result is <4 mmol/l the resident may have all or some of the following symptoms such as: trembling, sweating or irritability.

Loss of consciousness may occur and action needs to be taken immediately.

Remember, some residents MAY NOT HAVE ANY SYMPTOMS OF HYPOGLYCAEMIA

Hypoglycaemia, (low blood glucose level)
If able to swallow-
Give 15-20g of fast acting glucose e.g. 5 dextrose tablets, 5 jelly babies or 3-4 tsp sugar dissolved in half a glass of warm water.
Once recovered, give the next meal, if due, or a long acting carbohydrate e.g. slice of bread, biscuits or cereal bar.
If Unable to swallow or unconscious-
Give a Glucagon® injection (if trained staff available) then seek urgent medical advice and CALL 999 IMMEDIATELY.

If the blood glucose result is 6-8.5 mmol/l pre-meal the resident has normal blood glucose levels.

Please refer to resident’s care plan for targets.

If the blood glucose result is 8-12 mmol/l pre-meal then it is this is not usually an acceptable glucose range for elderly residents.

Please refer to resident’s care plan for targets.
Appendix 8: Action Plan for Blood Glucose Results

If the blood glucose result is >12 mmol/l after meals over 3 consecutive days
OR
If the blood glucose result is >15 mmol/l on more than one occasion
AND resident is not vomiting

This may be an acceptable level or it may need an adjustment of the resident’s medication. Follow individual Care Plan and if care plan indicates it to be necessary please contact the GP or Diabetes Specialist Nurse for advice.
- check blood glucose level every 4 hours
- check urine for ketones every 4 hour if strips are available.
If symptoms persist for more than 24 hours OR if resident has ketones then contact the GP or Diabetes Specialist Nurse or NHS 111 for urgent advice

If the blood glucose result is >15 mmol/l on one occasion
AND the resident IS vomiting and/or has diarrhoea
Check for ketones in the urine if possible.

Contact the GP, Diabetes Specialist Nurse or NHS 111 straightaway for urgent advice.

OR

If the resident has the following:
- nausea and/or vomiting
- deep rapid breathing
- disorientation/drowsiness.
Loss of consciousness may occur and action needs to be taken immediately- DIAL 999
Appendix 9

Contact Details for Improving Access to Psychological Services (IAPT)

Mind Matters- NHS (offers onsite clinics and both CBT and counselling)
0300 330 5450  www.mindmattersnhs.co.uk/surrey

ThinkAction Woking (CBT and Counselling)
03000 12 00 12  www.thinkaction.org.uk
Text TALK to 82085

Centre for Psychology (CBT and Counselling)
01483 901 429  www.centreforpsychology.co.uk

IESO Digital Health (ONLY ONLINE CBT)
01954 230066  www.iesohealth.com/surrey
Text Mind Online to 66777

EAST SURREY ONLY

DHC- NHS Talking Therapies (CBT and Counselling)
01306 735473  www.dhctalkingtherapies.co.uk

CRAWLEY, HORSHAM AND MID-SUSSEX ONLY

Time to Talk
In Crawley and Horsham call 01403 620434.
In Mid Sussex call 01444 251084
https://www.sussexcommunity.nhs.uk/services/servicedetails.htm?directoryID=16358
## Glossary of Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fasting plasma glucose</td>
<td>Is a blood test used to diagnose diabetes or pre-diabetes. Blood is taken after fasting for 8 hours.</td>
</tr>
<tr>
<td>Hypoglycaemia</td>
<td>Low blood glucose</td>
</tr>
<tr>
<td>Hyperglycaemia</td>
<td>High blood glucose</td>
</tr>
<tr>
<td>MUST Score</td>
<td>Malnutrition Universal Screening Tool: A five-step screening tool to identify adults, who are malnourished, at risk of malnutrition (undernutrition), or obese.</td>
</tr>
<tr>
<td>BMI</td>
<td>Body Mass Index. A measure of weight compared to height to determine if a person is as underweight, normal weight, overweight, or obese.</td>
</tr>
<tr>
<td>OGTT</td>
<td>Oral glucose tolerance test. Blood glucose is measured before and after a glucose drink to determine if a person has raised blood glucose levels. Used to diagnose diabetes</td>
</tr>
<tr>
<td>HbA1c</td>
<td>Also called glycated haemoglobin. A measurement of average blood glucose over 2-3 months. Usually measured 3-6 monthly.</td>
</tr>
<tr>
<td>Polyuria</td>
<td>Passing excessive amounts of urine</td>
</tr>
<tr>
<td>Nocturia</td>
<td>Passing excessive amounts of urine at night</td>
</tr>
<tr>
<td>Retinal Screening</td>
<td>Eye screening to look for diabetic retinopathy which can cause people to lose their sight.</td>
</tr>
<tr>
<td>Glucagon injection</td>
<td>An injection which increases blood glucose levels. Glucagon is a hormone which causes the liver to release stored glucose into the blood.</td>
</tr>
<tr>
<td>Ketones</td>
<td>Toxic chemicals that occur if there is not enough insulin to convert glucose into energy. Can result in ketoacidosis and death.</td>
</tr>
<tr>
<td>Neuropathy</td>
<td>Damage to the nerves particularly in the legs and feet. Can cause numbness, weakness or pain.</td>
</tr>
</tbody>
</table>
Acknowledgements

Lyndsey Richie; Podiatry Lead, Diabetes and Wound Care.

Julie Fleming; Specialist Diabetes Dietitian.

NHS Fife: Diabetes Management Guidelines for Care Homes in Fife.

Diabetes UK: Diabetes in Care Homes, awareness, screening, training.

International Diabetes Federation: Managing Older People with Type 2 Diabetes.


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References


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