CLINICAL PROTOCOL
THE MANAGEMENT OF PATIENTS WITH DIABETES WHO REQUIRE INSULIN IN A COMMUNITY SETTING

RATIONALE

This protocol aims to promote the effective management of patients with diabetes who require insulin as part of their management/treatment plan. It is recognised that the effective use of insulin is essential to reducing the risk of complications associated with diabetes and promoting quality of life.

The management of diabetes also includes:

- promoting healthy lifestyle choices
- monitoring blood glucose levels
- managing and reducing cardiovascular risk factors
- screening for the early detection of complications
- psychological support

The community nursing service supports patients who are unable to self-administer their insulin due to physical or cognitive impairment.

TARGET GROUP

All registered nurses employed by the Trust who are involved in the care and treatment of patients with diabetes as outlined in their job description.

TRAINING

All staff in the Trust are required to comply with mandatory training, as specified in the Trust’s Mandatory Training Matrix and their service specific training matrix.

COMMUNICATION and DOCUMENTATION

Follow the Standard Operating Procedure (SOP) for Medicine Administration in Community Nursing MMSOP08 and the SOP for the Administration of Insulin MMSOP11.

Communication and robust documentation is key to ensuring that patients receive appropriate and timely care and treatment.

The community nursing team must have sufficient information from the referring clinician to safely manage the administration of insulin or appropriately support a patient to self-administer their own insulin.
Prior to discharge from hospital the community nursing team will liaise with the Diabetes Specialist Nurses (DSN) or referring clinician regarding specific care goals for patients with multiple or complex needs.

Following discharge from hospital a new Patient Medicines Administration Chart (PMAC) must be sent from the referring clinician together with an updated Insulin Passport.

To reduce the possibility of missed insulin doses it is essential that community nurses follow the Procedure for Record Keeping and Team Diary Management for Community Nurses IG07.

**CARE PLAN**

The patient’s care plan should be patient focused and clearly reflect the patient’s needs regarding the management of their diabetes. The care plan should include:

- The type and frequency of insulin prescribed
- The type of insulin administration device or ‘pen’
- The preferred injection sites, i.e. abdomen or thighs
- A system of recording rotation of injection sites
- Observation of the injection sites for lipohypertrophy
- The frequency of capillary blood glucose testing and target blood glucose level/range
- Management of hypoglycemia and hyperglycemia including advice given to patient and carer.
- The frequency of testing capillary blood glucose levels during concurrent illness i.e. ‘sick day rules’
- Names and contact details of Diabetic Specialist Nurse, Community Matron or General Practitioner
- The planned review date of the care plan.

Community nursing service care planning and care interventions must be detailed in the care plan.

A copy of the manufacturer’s instructions for devices must be kept in the patient health records.

Any changes detailed in the patient’s care plan following advice from the patient’s General Practitioner, Diabetes Specialist Nurse or Community Matron must be communicated as soon as practically possible to all professionals who are involved in the patient’s care. Insulin passports must also be updated as per MMSOP11.

The care plan must be updated at least every six months or as indicated by the patient’s changing health care needs. Prior to any potential interventions being carried out the care plan must be read and care to be given verified by the patient.

Nurses must check that insulin has not already been given prior to administration by checking the Record of Treatment.
Any change in the patient’s insulin prescription will require the Patient’s Medication Administration Chart (PMAC) to be updated to avoid medication errors.

The Record of Treatment document must be completed following the administration of insulin.

**HYPOGLYCEMIA**

Hypoglycaemia is indicated when the capillary blood glucose falls below 4.0 mmols/L.

**Signs and symptoms**

<table>
<thead>
<tr>
<th>Symptom</th>
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<tr>
<td>Excessive sweating</td>
<td>Blurred vision</td>
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<tr>
<td>Faintness</td>
<td>Personality/mood change</td>
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<td>Paleness</td>
<td>Hunger</td>
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<td>Headache</td>
<td>Irritability</td>
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<td>Tingling lips</td>
<td>Lack of concentration</td>
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<tr>
<td>Pounding heart</td>
<td>Difficulty awakening</td>
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**Treatment**

**Step 1**

Initially give 15 to 20g of quick acting carbohydrate of the patients’ choice by mouth in liquid or solid form as soon as possible.

Some examples are:

- 3-4 teaspoons of sugar dissolved in water
- 6 sugar lumps
- Gluco gel® (formerly known as Hypostop gel®: glucose 10g/25g oral per tube)
- Lucozade non diet 90-120mls (preferable in renal patients)
- 150-200mls pure fruit juice e.g orange
- Glucose tablets (Glucotabs®), 4-5 tablets as tolerated or 5-7 Dextrosol® tablets

**Step 2**

- Repeat capillary blood glucose test 10 to 15 minutes later. If blood glucose levels remains below 4.0 mmol/l repeat Step 1 above for maximum of 3 times.

**Step 3**

Once the patient’s blood glucose is above 4.0 mmol/l and the patient has recovered give a snack of 10 to 20g of carbohydrate to prevent blood glucose levels falling again.

Some examples are:

- One slice of bread or toast
- 200-300 mL milk (not soya)
- 2 biscuits
- The next meal if due which must contain carbohydrate
Step 4

If no improvement or if patient’s condition deteriorates dial 999

When blood glucose level has reached target range of 4-7 mmols ascertain possible cause of hypoglycaemia. If the patient is well, continue to administer insulin as prescribed.

Contact the patient’s General Practitioner for further advice if patient is unwell.

Document advice and interventions given in the patient’s health records.

Reference: The Hospital management of Hypoglycaemia in Adults with Diabetes March 2010

**DIABETIC KETOACIDOSIS**

Diabetic Ketoacidosis (DKA) is a complex metabolic disorder in patients with Type 1 diabetes, characterised by hyperglycaemia.

Hyperglycaemia can be due to insufficient insulin and/or ill health. As a result of the lack of glucose entering the cells, fatty acids are metabolised resulting in ketones in the blood (ketonaemia). The blood pH becomes acidic (acidosis). The body attempts to rid the blood of ketones by excretion in the urine (ketonuria). Glucose is also excreted in the urine (glycosuria). The condition is most likely to develop during concurrent illness, especially if the patient has nausea or vomiting. Patients must be advised to Never stop insulin during illness unless on the advice of a clinician.

Patients should be treated in hospital urgently if DKA is suspected as it is potentially life threatening if not treated.

**DKA - Presenting signs and symptoms**

- Large amounts of glucose in urine (glycosuria)
- Large amount of ketones in the urine (ketonuria)
- Increased thirst (polydypsia)
- Nausea and vomiting
- Weakness, abdominal pains, generalised aches
- Skin becomes dry
- Blurred vision
- Heavy laboured breathing with acetones on breath

**Assessment**

If patient has presenting symptoms:

- Test urine for ketones and capillary blood glucose level and record in health care record
- Encourage patient to drink fluids such as water or sugar free drinks as tolerated
- Contact GP, GP out of hours or Diabetic Specialist Nurse if under the care of the consultant urgently to arrange assessment in secondary care
- If patient deteriorates suddenly dial 999
- Document advice and interventions given in the patient’s health care records.

Reference: The Management of Diabetic Ketoacidosis in Adults (September 2013)
HYPEROSMOLAR HYPERGLYCAEMIC STATE (Previously referred to as HONK-hyperglycaemic hyperosmolar non-ketotic coma).

Hyperosmolar Hyperglycaemic State (HHS) occurs in people with Type 2 diabetes, who may be experiencing very high blood glucose levels (often over 40mmol/l). It is characterised by hyperglycaemia, hyperosmolarity and dehydration. It does not usually lead to the presence of ketones in the urine, as in ketoacidosis. It can develop over a number of weeks through a combination of illness, dehydration and an inability to take normal diabetes medication due to the effect of illness.

Patients should be treated in hospital urgently if HHS is suspected as it is potentially life threatening if not treated.

HHS - Presenting symptoms
Frequent urination (polyuria)
Thirst
Dry skin
Disorientation and, in later stages, drowsiness and a gradual loss of consciousness.

Assessment
If patient has presenting symptoms:
- Test patient’s capillary blood glucose level and document in patient’s health care record
- Contact GP, GP out of hours or Diabetic Specialist Nurse if under the care of the consultant urgently to arrange assessment at secondary care.
- If patient deteriorates suddenly dial 999
- Document advice and interventions given in the patient’s health care records

Reference: The Management of Hyperosmolar Hyperglycaemic state (August 2012)

CAPILLARY BLOOD GLUCOSE MONITORING

The frequency of blood glucose monitoring for patients on insulin will be determined by clinical assessment of need and may need to be adapted when:
- There has been a change in treatment for diabetes
- The patient has an infection or is acutely unwell.
- The patient has undergone trauma either accidental or surgical.
- The patient is pregnant
- Patients are on steroid therapy
- There is poor glycaemic control
- Medication is omitted or missed
- There is a reduced level of activity
- There is a reduced food intake

TARGETS

Adults with Type 1 diabetes (NICE 2004)
- Before meals: 4-7mmols/L
- 2 hours after meals: less than 9mmols/L
Type 2 diabetes (NICE 2008)

- Before meals: 4-7mmol/L
- Two hours after meals: less than 8.5mmols/L

For patients whose diabetes is stable, on unchanged treatment, testing capillary blood glucose is recommended four times a day (pre-meals and pre-bed) on two days per week. However, in the community twice daily testing (pre-breakfast and pre-tea) on 2 days per week is acceptable. Also consider referral to GP or Diabetes Specialist Nurse if under the care of the hospital consultant as appropriate for review.

Ref: Diabetes- Blood Glucose monitoring at Home (Adults).2013

INJECTION SITES

Best practice is to vary areas for injecting insulin to avoid lipohypertrophy. The recommended sites for insulin injection are:

- lower abdomen
- upper outer thighs
- buttocks
- upper arms

If the thigh is the preferred site, ensure injections are rotated within this area.

Insulin absorption is fastest in abdomen and slowest in thigh and buttocks, therefore short-acting insulin is best given into the abdomen and long acting into the thigh. Do not inject into any areas of lipohypertrophy as this causes erratic blood glucose levels. Use one new needle per injection.

Patient’s preference should be considered when changing the site for insulin administration. Document in the record of treatment the site used, when site has been changed and reason for the change.

If patient’s preference for site of injection does not concur with best practice, explain the risks to the patient and document in their records. Seek further advice from the referring clinician if required.

Insulin injection should be made into the deep subcutaneous fat. To achieve this, needles of a length appropriate to the individual’s weight and fat distribution should be made available.

(BD Diabetes- Rotating Injection Sites 2013)

RISK FACTOR SURVEILLANCE

Patients should receive an annual review of their diabetes with quarterly or six monthly follow up reviews to screen and manage risk factors associated with diabetes. Liaise with the patient’s General Practitioner, Community Matron or Diabetes Specialist Nurse, Optician and Podiatrist to ensure patient receives timely and appropriate screening.
INCIDENT REPORTING

Clinical incidents or near misses must be reported and a Datix Incident Form must be completed i.e. if a wrong dose is given, or wrong device used, omitted patient visit and ‘near misses’.

MISS ED VISITS

Action
- Ascertain when patient last received their insulin and when they have last eaten
- Inform patient /carer that a nurse will visit immediately
- Check in the patient home records that insulin has not been administered
- Take capillary blood glucose reading and document result in patient health records.
- Contact General Practitioner (GP) or GP out of hours or Diabetes Specialist Nurse (if under the care of the consultant) at Wirral University Teaching Hospital for advice regarding the administration of insulin.
- Document advice in patient’s health records
- If required, arrange further follow up visits for capillary blood glucose monitoring and general assessment of patient’s condition
- Inform line manager within the same working shift and complete an incident form.

FAILED VISITS

If a nurse fails to gain access to a patient’s home, the nurse would need to consider the following options:

- An appointment time had been agreed with the patient
- Check with senior nurse the patient has not cancelled the visit
- If nurses are unable to establish contact with the patient they must follow the policy for “Failure to gain access for adults and children”
- Complete an incident form and inform their line manager

RELATED POLICIES

Please refer to relevant Trust policies and procedures

WHERE TO GET ADVICE FROM

Specialist advice on the care of diabetic patients can be obtained from Diabetic Specialist Nurses, Community Matrons or the patient’s General Practitioner

SAFEGUARDING

In any situation where staff may consider the patient to be a vulnerable adult, they need to follow the Trust Safeguarding Adult Policy and discuss with their line manager and document outcomes.
EQUALITY ASSESSMENT

During the development of this protocol the Trust has considered the clinical needs of each protected characteristic (age, disability, gender, gender reassignment, pregnancy and maternity, race, religion or belief, sexual orientation). There is no evidence of exclusion of these named groups.

If staff become aware of any clinical exclusions that impact on the delivery of care a Trust Incident form would need to be completed and an appropriate action plan put in place.

REFERENCES


British National Formulary (BNF) www.bnf.org

Diabetes UK http://www.diabetes.org.uk/


Type 1 diabetes: diagnosis and management of type 1 diabetes in children, young people and adults. NICE Clinical Guideline 15 July 2004

Type 2 Diabetes National clinical guideline for management in primary and secondary care (update) NICE Clinical Guideline 28 May 2008

APPENDIX ONE

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Status – New / Revised / Trust Change