Protocol for the Administration of Insulin to Adults with Diabetes
(including Administration by Non-Registered Practitioners)

MMPr019
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Why we need this Protocol
This protocol covers the administration of subcutaneous insulin by appropriately skilled practitioners within Northamptonshire Healthcare NHS Foundation Trust. Insulin injection administration is performed for individuals who are infirm or unable to self administer temporarily or permanently or where an individual is unable to perform the whole task themselves and needs support to maintain as much independence as is safely possible.

What the Protocol is trying to do
Diabetes is a long term condition that can affect people of all ages and causes disruption of blood glucose control. This can result in short term complications such as symptoms of high or low blood glucose levels and long term complications such as cardiovascular disease, retinopathy, nephropathy, foot ulcers and amputations.

People with Type 1 Diabetes require regular insulin injections to maintain life and to prevent the short and long term complications of diabetes.

Type 2 Diabetes is a progressive condition and many people require insulin therapy either permanently or temporarily (e.g. during times of illness) to maintain blood glucose control and prevent the short and long term complications of diabetes.

Northamptonshire Healthcare NHS Foundation Trust promotes patient independence and choice as well as the safe, effective and appropriate use of resources, as guided by The Adult Patients Passport to the Safer Use of Insulin (National Patient Safety Agency/2011/PSA003).

The Safer use of insulin focuses on giving:
- The Right insulin
- The Right dose
- The Right way
- At the Right time

With the appropriate:
- Storage
- Safe disposal of sharps
- Hypoglycaemia prevention and management

It is proposed that those who perform this clinical role will enable patients to remain safe within the trusts nursing teams. The protocol will outline the required training and development linked to this role, the ongoing assessment and the procedural formats to be followed and maintained by all those involved in the passage of care.
Which stakeholders have been involved in the creation of this Protocol
Senior Pharmacist Community Services
Medicines Management Committee
Community nursing teams

Any required definitions/explanations
NHFT - Northamptonshire Healthcare NHS Foundation Trust
RN – Registered Nurse employed by NHFT
DSN – Diabetes Specialist Nurse employed by NHFT
DN – District Nurse employed by NHFT
HCP – Healthcare Professional
Hypo – hypoglycaemic episode where capillary blood glucose reading drops below 4mmol/L
NMC - Nursing and Midwifery Council
RCN - Royal College of Nursing
RGN – Registered General Nurse
RN - Registered Nurse
NPSA- National Patient Safety Agency
MMC – Medicines Management Committee

Key duties
Medicines Management Committee (MMC)
Will approve and review this protocol

Medical Director
Is responsible for the dissemination of this protocol to their Clinical Directors and Clinical Tutors

Clinical Directors
Are responsible for the dissemination and implementation of the protocol in their service areas

Heads of Service
Are responsible for the dissemination and implementation of the protocol in their service areas

Diabetes Specialist Nursing Team
Are responsible for supporting the community nursing teams and for giving specific specialist advice, guidance and support to staff as required. They are also responsible for monitoring their areas of expertise and advising staff of any changes to national guidelines and best practice to ensure the documentation being used is kept up to date.
Senior Matrons/ Lead Practitioner
Are responsible for ensuring all staff have read and comply with this Protocol and for ensuring monitoring of local practice

They will report any deficits to the MMC and provide adequate supervision to the registered nursing staff involved.

Registered Nurses
- Are responsible for maintaining practice within the scope of the Nursing and Midwifery Council (NMC) The Code: Professional standards of practice and behaviour for nurses and midwives 31.3.2015
- Are responsible and accountable for maintaining the NMC Standards for Medicines Management (April 2010) including the appropriate delegation of roles and responsibilities to appropriately trained healthcare assistants, student or agency nurses, of patients with stable blood glucose.
- Are responsible for maintaining health care records in line with Health Records Management Policy (IGP 107), ensuring an appropriate prescription, care plan and clear documentation of expected blood glucose levels in order for insulin administration to be safely carried out.
- Are responsible for the safer administration of insulin as guided by the NPSA / 2010 / RRR013 including following the Guidance on the use of insulin passports (MMG 001).
- Are responsible for the prescribing and administration of insulin as guided by the Non-medical Prescribing Protocol(MMPr032) and the Control of Medicines Policy (MMP 001).
- Are responsible for reviewing the suitability of the patients to be delegated to HCAs, agency or student nurses on a weekly basis and will continue to monitor the competency of the HCA, agency or student nurse and review at least yearly.
- Are responsible for maintaining annual competency in medicines administration and role specific diabetes and medicines management training 3-yearly.
- Are responsible for maintaining the Trust’s annual mandatory Basic Life Support and Anaphylaxis training.
- Are responsible for providing opportunities for and taking part in regular clinical and management supervision.

Non-Registered Practitioners
- Are responsible for maintaining practice within the scope of the Code of Conduct for Healthcare Support Workers and Adult Social Care Workers in England
- They will attend the role specific diabetes Trust training every three years and complete competencies in blood glucose monitoring, hypoglycaemia management, insulin management and administration.
- Where available they will do the relevant NVQ unit.
- They will demonstrate competency in numeracy skills via trust training

MMP019 Protocol for the administration of Insulin (rev Jan 22)
- They will maintain the annual Trusts Basic Life Support and Anaphylaxis training.

- They will participate in ongoing clinical and management supervision and assessment by RN and complete reassessment of insulin administration and blood glucose monitoring competency annually.

- They will follow the Trust administration protocol as laid out within this document

- They will maintain records in line with Trust requirements and Code of Conduct

**Protocol detail**

**Enabling the self-administration of insulin**

Empowering patients to self-administer is a logical method for improving safety, particularly in relation to ensuring correct dosing and time of administration (NPSA/2011/PSA003). The priority with insulin management is to enable the individual to self-manage their insulin injections and blood glucose monitoring. Education and support should be provided to enable patients and/or in the community their carers, to administer their insulin and perform and interpret their blood glucose monitoring. This can be provided by the individual’s practice nurse, community nurse, ward nurse, diabetes specialist nurse and/or diabetes specialist support worker. Some individuals and/or their carers may need daily supervised practice to achieve independence; this would be provided by the Intermediate Care Team, the District Nursing service or ward based nurses.

For reasons of poor dexterity, vision, mental capacity or lack of carer support, the community nursing service may need to support individuals with the administration of insulin and blood glucose monitoring.

- Some individuals would be supported to enable them to maintain as much independence as is possible and safe.

- Some individuals will require the administration of insulin and blood glucose monitoring to be managed for them long term.

**Scheduling of insulin administration**

The administration of insulin should only be delegated to non-registered practitioners if the individual’s blood glucose is stable and no titration of insulin doses are needed.

Patients who are new to insulin or who have had a change of insulin regime, where insulin doses are still being titrated or where insulin doses vary according to blood glucose result should be managed by an RGN employed by NHFT.

Continuity of care should be considered in the scheduling of insulin administration.

**Prescribing of insulin**

Insulin will be prescribed by the patient’s general practitioner, hospital doctor, a Trust employed non-medical prescriber or diabetes specialist nurse.

**Community Teams** The insulin prescribed will be documented on the Insulin Prescription form by Trust employed non-medical prescriber or diabetes specialist nurse.
Insulin must only be administered against the patient’s prescribed insulin dosage and in accordance with the patient’s electronic record.

**Community Teams:** The RN and the Non-registered practitioner will be responsible for maintaining the blood glucose monitoring and insulin administration document. The transcription of the insulin Type and its related instructions will be carried out by a registered nurse.

Details that must be included and written legibly are:

1. The patient’s full name, including aliases
2. Date of birth
3. Address
4. NHS number
5. Full name of insulin(s) e.g. Humulin M3 Kwik Pen or Humulin M3 3ml cartridges or Humulin M3 10ml vial.
6. Where appropriate the pen device or syringes to be used e.g. HumaPen Luxura or BD Safety Glide 0.5ml/50unit syringe.
7. Number of units required
8. The word ‘units’ written in full
9. Time of each injection or required timeframe
10. Route (usually subcutaneous)

In line with the guidance for the use of insulin passports (MMG001), an insulin safety leaflet /passport will be available to the patient at home and placed in their home record where community nursing teams are involved in their care. The safety leaflet / passport is available NHFT website at: [http://thestaffroom.nhft.nhs.uk/specialist-nursing?smbfolder=495](http://thestaffroom.nhft.nhs.uk/specialist-nursing?smbfolder=495)

**Blood Glucose Monitoring**

An agreed target range for blood glucose will be on the blood glucose chart (in-patient areas) / [The blood glucose and insulin administration chart](#) (Community Teams)

Targets will differ for individual patients with diabetes, but the following is the recommended guide for most patients:

- Fasting: 5-7mmol/L
- Pre-lunch or Pre-teatime: 4-7mmol/L
- Post-meal (1 to 2 hours): <10mmol/L
- Bedtime: 6-10mmol/L

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For some vulnerable individuals a much higher target range maybe agreed, such as 6-15mmols/l during end of life care (MMG010 End of life Diabetes Guidance).

The patient’s blood glucose should be checked and recorded before each administration of insulin.

Blood glucose results outside of the patient’s target range should be reported to the registered nurse responsible for the patient’s care.

Blood glucose results persistently outside of the patient’s target range should be reported to the appropriate prescriber or diabetes specialist nurse to review the patient’s insulin regime.

**Rotation of injection sites**
The injection site should be recorded on the blood glucose monitoring and insulin administration chart to enable staff to rotate injection sites, to prevent lipohypertrophy (fatty lumps) that can cause erratic blood glucose results, including hypoglycaemia, by affecting the absorption of insulin.

**Hypoglycaemia - Blood glucose 4mmols/l or less**
If the patient’s blood glucose is 4mmols/l or less, insulin administration should be withheld and the hypoglycaemia managed according to the Trust’s guidance (appendix 1). Once the blood glucose is within the patient’s target range their insulin should be administered.

Episodes of hypoglycaemia should be reported to the registered nurse responsible for the patient’s care. Never omit insulin unless the registered nurse responsible for the patient instructs this.

**Hyperglycaemia – Blood Glucose 10mmols/l or higher**
Insulin should be given as prescribed.

Episodes of hyperglycaemia should be reported to the registered nurse responsible for the patient’s care.

**Storage of insulin**
Store unopened supplies of insulin in a refrigerator – it must not freeze.

In the patient’s home store the insulin that is in use and syringes/needles in a sealed box. Insulin in use can be stored at room temperature, avoiding direct sunlight and heat.

After 4 weeks/28 days discard any opened but unused insulin.

**Safe use of sharps**
Where insulin is to be administered by a HCP and the patient is not being supported to be independent, safer sharps must be used in line with the Council of the European Union Directive (2010/32/EU).

- Insulin in pen and disposable pen devices using retractable needles e.g. BD autoshield Duo pen needles 5mm.
- Insulin in 10ml vials using BD safety Glide insulin syringes 0.3ml/30units with 8mm needles, 0.5ml/50units with 8mm needles or 1.0ml/100units with 12mm needles.

To prevent needlestick injury.
- Always dispose of syringes / needles in a sharps bin.
- Where the patient is being assisted to self-administer their insulin, enable them wherever possible to dispose of their sharps into a sharps bin themselves.
- Follow trust guidance for the disposal of sharps bins ([ICP014 Sharps Management policy](#)).

**Care planning**

1. A referral will be received by the nursing team
2. The responsible RN will obtain the insulin prescription from the prescriber.
3. The RN will register the patient on SystmOne and assign to the caseload.
4. The RN will create care plans on SystmOne to include the prescribed insulin regime.
5. The RN will ensure that the required insulin is available as prescribed, is stored in the appropriate manner and facilities for sharps disposal are in place.
6. **Community nursing teams** will prepare the paper DN notes to leave in patients home. These will include:
   - Insulin Prescription form
   - **The blood glucose and insulin administration chart**
   - A copy of the Whole Person Care Plan including whether the patient has Type 1 or Type 2 diabetes, type and frequency of insulin, where the insulin and equipment is stored, expected blood glucose ranges, and the patients hypoglycaemia management plan.
   - The insulin passport / safety leaflet
7. **Community nursing teams** will ensure the initial contacts with the patient are by a Band 5 nurse (or above) with a valid NHFT medicines management competency until it is established that the patient’s blood glucose is stable.
8. **Community Nursing Teams**, once the patient’s blood glucose is stable and a stable insulin regime has been established, non-registered practitioners can administer the patients insulin, provided the following are in place:
   - A full handover of the patients care has been given.
   - The individual has an in date competency for administering insulin (Appendix 2) and blood glucose monitoring (Appendix 3).
   - Has a named contact if there are any concerns.

**Preparing to administer the insulin**

At the start of each contact:

- The practitioner will review the Insulin Prescription form.
Community Teams: The blood glucose and insulin administration chart, and the patients care plan will also be reviewed.

Clarifying the following, being guided by the “Rule of Four” (NPSA/2011/PSA003).

- Right Insulin (Name/type)
- Right Dose (Strength/amount written in units)
- Right Time (With food/ before food/ at bedtime)
- Right Way (Syringe/ pen type/injection site)

- The patient’s identity by asking where possible for the patient to state their name and date of birth.
- That they understand the procedure and obtain their consent.
- That the patient gives consent if a non-registered practitioner or agency nurse is to administer the treatment.
- Insulin type, batch number, expiry date, date insulin opened and date of expiry (4 weeks/28 days). Date of opening to be written on chart and also on the insulin box/ bottle or pen label.
- Check that the insulin has not already been administered for that day by a different nurse.
- The insulin available for administration agrees with the Insulin Prescription Form.
- Community Teams, the insulin available also agrees with The blood glucose and insulin administration chart, and the patients care plan.
- The insulin dose is prescribed using the full term “units” which must not be abbreviated. This is in line with the NPSA safety alert 2010.

Prior to the administration of insulin the blood glucose should be checked and the result entered on the

- Blood Glucose chart (In-patients)
- The blood glucose and insulin administration chart, and the patient’s electronic patient record (Community Teams).

The administration of insulin

Preparation

- Prepare the equipment required for procedure – documentation, insulin, syringe / needle, sharps bin
- Wash hands
- Check the appearance of the insulin and invert vial a minimum of 20 times if using a cloudy insulin
- Wipe vial/cartridge bung with alcohol wipe and allow to dry.

If using syringes:
- Fill the syringe with air by drawing back the plunger to the same amount of units to be given before inserting needle into vial
- Insert needle into vial, inject air and invert vial, draw plunger back slowly to slightly more than the required amount of insulin. Tap the syringe allowing any air bubbles to be expelled back into the vial when the plunger is pushed up to the required dose.

If using an insulin pen:
- Apply retractable needle to pen
- Dial up 2-4 units and depress plunger to expel air and to ensure pen is working.
- Dial up insulin dose to be administered.

Administration
- Select the site for injection according to the guidance for rotation of injection sites on the blood glucose and insulin administration chart (Community Teams)
- Rotate within the injection site.
- Pinch up skin if necessary (if using 8mm needle or longer), insert needle at 90º angle and inject insulin.
- After injecting insulin leave needle under the skin for a count of 10 seconds then withdraw slowly and release the skin if pinch up performed.
- Dispose of sharps in “Sharps Bin” as per guidelines and wash hands
- **Community Teams:** Sign blood glucose and insulin administration chart and enter the activity on to the electronic patient record.
- **In-patient Teams:** Sign the prescription form

Documentation
- Insulin Prescription Form
- **Blood glucose and insulin administration chart** (Community Teams)
- Blood Glucose chart (in-patient teams)
- Insulin passport /safety leaflet
- Hypoglycaemia guidance (See appendix 1)
- Link to Diabetes related documentation and guidance
Training requirements associated with this Protocol

Mandatory Training
NHFT Mandatory Diabetes training should be attended by all clinical staff involved in insulin management, every 3 years.

NHFT Medicines Management Training should be attended every 3 years

Medication administration competency should be assessed annually for registered nurses.

Locally agreed competency for insulin administration by Non-registered practitioners

Locally agreed competency for medication administration by Non-registered practitioners

Locally agreed competency for blood glucose monitoring by Non-registered practitioners

Training required to fulfil this protocol will be provided in accordance with the Trust’s Training Needs Analysis. Management of training will be in accordance with the Trust’s Statutory and Mandatory Training Policy’

Specific training not covered by mandatory training
Ad hoc training sessions based on an individual’s training needs as defined within their annual appraisal or job description.

How this Protocol will be monitored for compliance and effectiveness
The table below outlines the Trusts’ monitoring arrangements for this document. The Trust reserves the right to commission additional work or change the monitoring arrangements to meet organisational needs.

<table>
<thead>
<tr>
<th>Aspect of compliance or effectiveness being monitored</th>
<th>Method of monitoring</th>
<th>Individual responsible for the monitoring</th>
<th>Monitoring frequency</th>
<th>Group or committee who receive the findings or report</th>
<th>Group or committee or individual responsible for completing any actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duties</td>
<td>To be addressed by the monitoring activities below.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safe Administration of Medicines</td>
<td>Review of incidents</td>
<td>District Nursing Team Leads</td>
<td>6 monthly</td>
<td>Medicines Safety Group</td>
<td>District Nursing Team Leads</td>
</tr>
<tr>
<td>Competency Assessment</td>
<td>Review of competency database to</td>
<td>District Nursing</td>
<td>6 monthly</td>
<td>Medicines Management</td>
<td>District Nursing Team Leads</td>
</tr>
</tbody>
</table>
It is essential that competency is maintained.

<table>
<thead>
<tr>
<th>If there is mandatory training associated with this document state the mandatory training here</th>
<th>Team Leads</th>
<th>Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training will be monitored in line with the Statutory and Mandatory Training Policy.</td>
<td></td>
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</tbody>
</table>

Where a lack of compliance is found, the identified group, committee or individual will identify required actions, allocate responsible leads, target completion dates and ensure an assurance report is represented showing how any gaps have been addressed.

**Equality considerations**
Refer to MMP001 Control of Medicines Policy

**Reference Guide**
National Patient Safety Agency 2011 *The Adult Patients Passport to the Safer Use of Insulin (PSA003).*
[http://www.nrls.npsa.nhs.uk/alerts/?entryid45=130397&q=0%2ac2%acinsulin%2ac2%ac](http://www.nrls.npsa.nhs.uk/alerts/?entryid45=130397&q=0%2ac2%acinsulin%2ac2%ac)

National Patient Safety Agency 2010 *Safer Administration of Insulin (RRR013)*
[http://www.nrls.npsa.nhs.uk/alerts/?entryid45=74287&q=0%2ac2%acinsulin%2ac2%ac](http://www.nrls.npsa.nhs.uk/alerts/?entryid45=74287&q=0%2ac2%acinsulin%2ac2%ac)

Nursing and Midwifery Council (NMC) *The Code: Standards of conduct, performance and ethics for nurses and midwives* London Nursing and Midwifery Council

Nursing and Midwifery Council *Standards for Medicines Management* London Nursing and Midwifery Council


The Council of the European Union 2010 *Prevention of Sharps Injuries in the Hospital and Healthcare Sector (32)*
[http://www.europeanbiosafetynetwork.eu/news#item-103](http://www.europeanbiosafetynetwork.eu/news#item-103)

**Appendix 1 Hypo Management pathways for Community settings and clinics**
Hypo Management for In-patient settings and clinics

MMP019 Protocol for the administration of Insulin (rev Jan 22)
## APPENDIX 2: COMPETENCY FOR THE ADMINISTRATION OF INSULIN TO NAMED PATIENTS VIA INSULIN SYRINGES OR INSULIN PENS

Name of practitioner being assessed: ..............................................................

If you require support with this competency: During working hours contact the patient’s the Single Point of Contact Telephone Number for your Locality, out of hours contact 111 and request that the on call district nurse contacts you gently regarding a syringe driver.

<table>
<thead>
<tr>
<th>Knowledge and understanding</th>
<th>Safe</th>
<th>Further development</th>
<th>Comments</th>
<th>Date achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observation / questioning</strong></td>
<td></td>
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<tr>
<td>Before administering any prescribed medication, consult the individual’s prescription record to CORRECTLY ascertain the following and ensure correct</td>
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<tr>
<td>- Drug</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>- Dosage</td>
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<tr>
<td>- Date and time of administration</td>
<td></td>
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<tr>
<td>- Route and method of administration</td>
<td></td>
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<td></td>
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<tr>
<td>- Validity of prescription</td>
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<tr>
<td>- Signature of prescriber</td>
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<tr>
<td>- Legibility of prescription</td>
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<tr>
<td>The prescription(s) is/are legible and written in accordance with current guidelines, abbreviations of drug names are not used</td>
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<td></td>
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<tr>
<td>Units should be written in full and not abbreviated</td>
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<tr>
<td>The prescribed drug(s) has/have not already been given</td>
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<tr>
<td>The correct drug(s) is/are selected</td>
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<tr>
<td>The container label(s) is/are checked against the prescription chart</td>
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<tr>
<td>The drug(s) has/have not passed the/their expiry date</td>
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<tr>
<td>The dosage(s) is/are checked</td>
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<tr>
<td>Contacts the prescriber or another authorised prescriber without delay where contraindications to prescribed medication are discovered</td>
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<tr>
<td>Ensures that any written entries on drug chart(s) are clear and legible</td>
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<tr>
<td>Makes a clear, accurate and immediate record of all medication administered, intentionally withheld or refused by the patient(s)</td>
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<tr>
<td>Where a range of doses have been prescribed, the nurse ensures that the exact dose given to the patient(s) is clearly recorded</td>
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</tr>
<tr>
<td>Knowledge and understanding Observation / questioning</td>
<td>Safe</td>
<td>Further development</td>
<td>Comments</td>
<td>Date achieved</td>
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<tr>
<td>-----------------------------------------------------</td>
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<tr>
<td>Considers the dosage, method of administration, route and timing of the administration in the context of the condition of the patient(s)</td>
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<tr>
<td>Any suspected adverse reactions are reported promptly to the GP/Out of Hours</td>
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</tbody>
</table>

**Knowledge and understanding**

**Questioning**

States what procedure is followed in the event of a drug incident

State the correct procedure for use of equipment and safe disposal of equipment used and describe steps to avoid needle-stick injury including the use of BD Safety Glide insulin syringes and BD AutoShield Duo pen needles.

**Knowledge Questioning assesses on formal study session**

<table>
<thead>
<tr>
<th>Safe</th>
<th>Further development</th>
<th>Comments</th>
<th>Date achieved</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Describe what diabetes is

Name the two types of diabetes

Describe the different types of insulin available

Demonstrate an understanding that the type of insulin prescribed will dictate the time the insulin will need to be given

Describe the safety procedures that need to be considered when prescribing and administering insulin

Describe the technique of subcutaneous injection using BDSafety Glide insulin syringes and Insulin pens with BDAutoShield Duo pen needles.

Demonstrate ability to administer an insulin injection following Trust Protocol

Describe how you would reduce the risk of the patient developing lipohypertrophy

Describe the sites that can be used for insulin administration

Describe how insulin is obtained and how it should be stored

Describe the effect of insulin on blood glucose levels

Demonstrate an understanding of the importance of working in partnership with individuals who have diabetes and enabling them to self-inject when safe and appropriate to do so
<table>
<thead>
<tr>
<th>Demonstrates skill</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
<th>Date Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation assessed on formal training session</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Greets, accurately identifies the patient and/or key person and introduces self and any colleagues present</td>
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<td></td>
</tr>
<tr>
<td>Collects equipment needed to administer insulin</td>
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<tr>
<td>Checks the equipment is suitable for intended purpose</td>
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<tr>
<td>Washes hands and wear gloves</td>
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<tr>
<td>Checks insulin regime and patient care plan</td>
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<tr>
<td>Checks expiry date</td>
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<tr>
<td>Records blood glucose</td>
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<tr>
<td>If cloudy insulin is to be administered ensure it is mixed by inverting vial or pen 20 times.</td>
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<tr>
<td><strong>If using a BD SafetyGlide insulin syringe</strong></td>
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<tr>
<td>Draws up correct dose of insulin with insulin syringe and needle</td>
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<tr>
<td><strong>If using an insulin pen and BDAutoshieldDuo pen safety needles</strong></td>
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<tr>
<td>Dial up 2 units and perform an airshot to ensure the pen is working and primed</td>
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<tr>
<td>Dial up dose to be administered</td>
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<tr>
<td>Informs the patient</td>
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<tr>
<td>Ensure privacy and dignity is maintained</td>
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<tr>
<td>Administers insulin ensuring the syringe is completely empty OR the pen dial is back at zero</td>
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<tr>
<td>If using a BD SafetyGlide insulin syringe</td>
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<tr>
<td>Slide needle guard over the needle and dispose of the insulin syringe in the Sharps Box</td>
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<tr>
<td>If using an insulin pen and BDAutoshieldDuo pen safety needles unscrew pen needle and dispose of in sharps bin</td>
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<tr>
<td>Ensure the patient is comfortable</td>
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<tr>
<td>Complete relevant records</td>
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</tbody>
</table>
**Attitude**
**Observation and discussion**

Prior to administering insulin, the nurse will demonstrate the psychological and safe physical preparation of the patient. This will include listening to the individual describe how the insulin therapy is fitting into their lifestyle and discuss what changes might be made to manage any difficulties.

<table>
<thead>
<tr>
<th>Mentor</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name ........................................ Signature</td>
<td>Date:</td>
</tr>
<tr>
<td>Statement of competence completed by candidate</td>
<td>Date:</td>
</tr>
<tr>
<td>Name ........................................ Signature</td>
<td></td>
</tr>
</tbody>
</table>
Assessment of Competency to Administer Insulin to Named Patient

Name ..............................................................................

<table>
<thead>
<tr>
<th>Identified Area(s) for development</th>
<th>Action plan to support development</th>
<th>Evidence to demonstrate development</th>
<th>Agreed date of review/completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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<td>5.</td>
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</tbody>
</table>

Signature of practitioner:............................................

Signature of mentor ....................................................

Date:.................................................................
## APPENDIX 3: BLOOD GLUCOSE MONITORING COMPETENCY

<table>
<thead>
<tr>
<th>CANDIDATES</th>
<th>ASSESSORS</th>
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</thead>
<tbody>
<tr>
<td>NAME:</td>
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<td></td>
<td>BAND:</td>
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<tr>
<td></td>
<td>PLACE OF</td>
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<tr>
<td></td>
<td>PRACTICE:</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Competence</th>
<th>Taught Date:</th>
<th>Practiced Date:</th>
<th>Competence Achieved</th>
<th>Review Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrates an understanding of diabetes, attends NHFT diabetes</td>
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<tr>
<td>training and update 3yrl.</td>
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<tr>
<td>2. Can state the normal range of blood glucose and discuss the agreeing</td>
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<tr>
<td>of personalised targets</td>
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<tr>
<td>3. Can explain when blood glucose should be checked</td>
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<tr>
<td>4. Demonstrates an understanding of hypoglycaemia and hyperglycaemia</td>
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<tr>
<td>5. Can discuss actions needed if result shows hypoglycaemia and</td>
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<tr>
<td>hyperglycaemia</td>
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<tr>
<td>6. Is able to explain and correctly demonstrate the procedure for</td>
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<tr>
<td>monitoring blood glucose levels</td>
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<tr>
<td>7. Can assist the client, where they are able, to correctly use the</td>
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<tr>
<td>equipment themselves</td>
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<td></td>
</tr>
<tr>
<td>Competence</td>
<td>Taught Date</td>
<td>Practiced Date</td>
<td>Competence Achieved</td>
<td>Review Date</td>
<td>Comments</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>1. Is able to describe general principles of equipment cleaning and appropriate infection control procedures, according to manufacturer’s instructions and Trust policies and procedures. Takes part in the external quality assurance process.</td>
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<tr>
<td>2. Demonstrates knowledge and understanding of when and how to report any problems relating to blood glucose results.</td>
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</tbody>
</table>
**KNOWLEDGE AND SKILLS GUIDELINES ON: Blood Glucose Monitoring (1/2)**

1. **Definition**

   The body regulates blood glucose levels by producing insulin which acts like a key, unlocking the body’s cells to enable the body to use glucose in the blood for energy. Insulin’s main effect is to lower the blood glucose level, but it also influences protein and fat metabolism. If the pancreas fails to produce enough insulin or if the body resists the action of insulin, the level of glucose in the blood will become too high. If too much insulin is made, or given, then the level of glucose in the blood becomes too low.

2. **Range of blood glucose**

   In a healthy individual the body regulates the blood glucose to be maintained between 4 and 7 mmol/l (Cowan 1997)

   Blood glucose targets should be agreed with and personalized to meet the needs of the individual. Ideal blood glucose targets are:

<table>
<thead>
<tr>
<th>Time</th>
<th>Ideal Target (mmol/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fasting</td>
<td>5-7</td>
</tr>
<tr>
<td>Pre-lunch or Pre-teatime</td>
<td>4-7</td>
</tr>
<tr>
<td>Post-meal (1 to 2 hours)</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Bedtime</td>
<td>6-10</td>
</tr>
</tbody>
</table>

3. **Why blood glucose is measured**

   Blood glucose monitoring is used to support management decisions in diabetes:
   - To monitor and manage day to day treatment and management decisions
   - Monitoring will be increased to inform the management of unstable diabetes
   - Monitoring will be increased to inform the management of diabetes during illness
   - In order to make a diagnosis and manage hypoglycaemia
   - To monitor and manage treatment changes

4. **Hypoglycaemia**

   Blood glucose level below 4mmols/l
   Follow NHFT guidance for the management of hypoglycaemia and/or any care plan agreed with the individual (See Appendix 1). If hypoglycaemia is a persistent problem report / discuss with Nurse in charge, GP, Practice Nurse or Diabetes Specialist Nurse.

5. **Hyperglycemia**

   Blood glucose level above 10 mmol/l (refer to individual care plan).
   When insulin is deficient, absent or when the body is resistant to insulin, blood glucose levels become raised. Causes can vary from eating more carbohydrate food and exercising less than usual to concurrent illness such as influenza and the treatment of other illnesses such as steroid or anti-aspchotic medication.
Symptoms can vary in severity from no symptoms to acute life endangering symptoms:

- No symptoms
- Frequent passing of urine and in large quantities (causing dehydration)
- Thirst
- Tiredness and lethargy (lack of energy)
- Nausea and vomiting (increasing risk of dehydration)
- Low blood pressure
- Abdominal pains
- Sudden unexplained weight loss usually seen in Type 1 Diabetes
- Smell of acetone on breath (smells like pear drops) usually seen in Type 1 Diabetes
- Breathing difficulty (Kussmaul breathing) usually seen in Type 1 Diabetes

**Treatment**

Seek medical help immediately if symptoms are acute.
Identify and manage the cause of hyperglycaemia. Treatment involves fluid replacement, restoration of acid-base imbalance, manipulation of glucose lowering treatments and lifestyle changes.

If blood glucose levels are persistently raised consult GP, Practice Nurse or Diabetic Specialist Nurse.

Hyperglycaemia over many years can result in the complications of diabetes; retinopathy, nephropathy and can contribute to cardiovascular disease and neuropathy; limb amputations, heart attacks and strokes.

**6 Procedure Guidelines**

**Equipment**

- Blood glucose monitor
- Test strips
- (Quality assurance solution)
- Single use safety lancets
- Gloves

**Procedure**

- All equipment is prepared and used following manufacturers guidelines
- Explain the procedure to the patient
- Ask patient to wash hands in warm water, do not use alcohol rub or wet wipes as these may affect results
- Ask patient to sit or lie down
- Carry out hand hygiene in accordance with Hand Hygiene Procedure ICPr010
- put on gloves
- Use a single use lancet at the correct depth setting
- Take a blood sample from the side of a finger using the lancet, (ensure that the site of piercing is rotated). Avoid the frequent use of the thumb and index
finger, the droplet of blood should be large enough to meet the requirements of the test strip / monitor.

- Apply the blood to the test strip according to the manufacturer’s instructions
- Dispose of lancet in sharps container in accordance with NHFT ICP 002 (Standard precautions Policy)
- Read result and record immediately
- Dispose of waste appropriately
- Ensure the patient is comfortable and discuss result if appropriate
- Carry out hand hygiene in accordance with Hand Hygiene Procedure ICP010 Complete relevant records
- Report / discuss any problems relating to blood glucose control to nurse in charge, GP, Practice Nurse or Diabetes Specialist Nurse.
- Take part in NHFT’s External Quality Assurance process

7. Supporting independence
Support the individual to be as independent as possible in the use of the equipment

8. Cleaning and disinfection
Clean equipment in accordance with manufacturer’s instructions and NHFT Infection control Protocol001 (Standard precautions Policy)

9. Reporting problems
Demonstrates knowledge on when to report any problems relating to use, maintenance, servicing or decontamination of medical device as outlined in medical devices management protocol CLP 009.

The competency should also be read in conjunction with the following NHT policies:
- Protocol for the management of incidents – CRM 002
- C and Disinfection Policy – ICP001
- Standard Precautions Policy – ICP002
- Hand Hygiene Procedure ICP010


Updated January 2015 by Lynsey Burgess