

## Protocol for the safe use of insulin

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### Version Control Summary

Version	Date	Author	Status	Comment
1	May 2012	Shameem Mir	Chief Pharmacist	
2	June 2015	Alan Cottney	Clinical pharmacist	<ul style="list-style-type: none"> <li>• Section 1: section re-written.</li> <li>• Addition of clause 3.2</li> <li>• Removal of section 'Communication Strategy' (section 4 in previous document).</li> <li>• Amendment of clause 5.1 to include example.</li> <li>• Addition of clause 7.3</li> <li>• Removal of "Training" section (section 10 in previous document), ase-learning module no longer available.</li> <li>• Removal of "Audit" section (section 11 in previous document).</li> <li>• Removal of superseded patient information booklet (pages 7-16 in previous document)</li> </ul>

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## 1. Introduction

- 1.1 Insulin is a vital treatment for those with type 1 diabetes and is also commonly used by people with type 2 diabetes.
- 1.2 Insulin is commonly implicated in medication errors in hospitals, and these errors have the potential to cause serious harm to patients.
- 1.3 East London NHS Foundation Trust (ELFT) has classified insulin as a “High Risk Drug” because there is a high risk of patient harm resulting from incorrect use of the drug.
- 1.4 Prior to its closure in 2012, the National Patient Safety Agency (NPSA) issued two Patient Safety Alerts which made recommendations about using insulin more safely:
  - ‘Safer Administration of Insulin’ (June 2010);
  - ‘The adult patient’s passport to safer use of insulin’ (March 2011)
- 1.5 ‘Safer Administration of Insulin’ highlighted two common errors in insulin-use:
  - Administering insulin using non-insulin-specific syringes, which are marked in millilitres- not in insulin units;
  - The use of abbreviations such as ‘U’ or ‘IU’ for units. Such abbreviations make it more likely that the dose will be misread, e.g. 10U is read as 100.
- 1.6 ‘The adult patient’s passport to safer use of insulin’ (March 2011) alert aimed to empower patients to take an active role in their treatment with insulin by ensuring they were issued with a patient information booklet and a patient-held record (“insulin passport”) giving details of their current insulin treatment.

## 2.0 Scope

- 2.1 This protocol was developed to promote the safe use of insulin in response to the two insulin-related NPSA alerts detailed above. This protocol must be followed by all clinic staff across ELFT.

## 3.0 Insulin passport and patient information booklet

- 3.1 All patients on insulin therapy must be given:
  - a) **Insulin Passport** (see example in Appendix 1). The Insulin Passport is a record of the patient’s current insulin products. Hard copies of the insulin passport are available to order from: [www.nhsforms.co.uk](http://www.nhsforms.co.uk).
  - b) **Insulin patient information booklet**, such as “The safe use of insulin and you” (see appendix 2). The booklet is also available in: Large Print, Gujarati, Polish, Punjabi, Somali, Turkish, Urdu and Welsh, and can be downloaded from: <http://www.nhs.uk/resource-search/publications/nhs-dakc-insulin-use-it-safely.aspx>
- 3.2 If a patient is already in possession of an insulin passport prior to admission to ELFT, then this should be consulted to ensure it is complete with the most up-to-date information.

- 3.3 Where there is a discrepancy between the Insulin Passport, and a patient's notes or current understanding of insulin therapy, it should be reconciled and the information in the Insulin Passport updated.
- 3.4 Should the patient, carer or responsible healthcare professional make an informed choice that the patient is not to engage with this initiative, this must be recorded in the patient records.

#### **4.0 Professional responsibility**

- 4.1 Changes in patients' circumstances, their insulin products, other drug therapy (if recorded) and information that needs to be communicated in order to help patients use their insulin safely should be reflected as soon as is practical in the Insulin Passport.
- 4.2 Healthcare professionals must be available to advise patients about completing the Insulin Passport, and specifically to provide advice about how to describe their insulin products so that there is no ambiguity as to what the patient is using.
- 4.3 Factors beyond the control of patients or healthcare professionals may mean it is not possible to consult a patient's Insulin Passport for the purposes of validating the correct insulin product(s). If this is the case, this should be documented in the patient's notes.
- 4.4 The Insulin Passport will not suit all patients with diabetes. There may be circumstances where, in the judgement of the healthcare professional, patients are not able to develop a balanced approach to the inherent risks of insulin use. Such circumstances should be fully documented and alternative arrangements made to minimise errors with insulin-use.
- 4.5 Healthcare professionals are responsible for making appropriate decisions in the circumstances of the individual patient, in consultation with the patient and/or carer.

#### **5.0 Prescribing insulin**

- 5.1 Insulin must be prescribed on the Trust diabetic chart using the brand name (for example, 'Lantus') and the name of the specific device required (for example, 'SoloStar').
- 5.2 The letters, 'IU' or 'U' must never be used to abbreviate the word, 'units', as this can lead to errors. For example, '4U' can be misinterpreted as, '40 units'.
- 5.3 Insulin must always be prescribed in **UNITS**.
- 5.4 Healthcare professionals who prescribe insulin are responsible for ensuring that patients possess an Insulin Passport (appendix 1) and a Patient Information Booklet (appendix 2). They are also responsible for issuing a replacement Insulin Passport when there is no space left for new information, it has been lost or it has become unreadable.

## 6.0 Dispensing insulin

### 6.1 Pharmacy staff are responsible for ensuring:

- insulin is prescribed safely and correctly using the word “UNITS” to describe the dose;
- the right insulin product is available in a form suitable to administer to the patient;
- staff have sufficient information about the insulin needed;
- the patient has been offered verbal and written information about their insulin ;
- the patient’s insulin passport has been consulted before any insulin has been dispensed.

### 6.2 Out of Hours ordering of insulin

Some patients are admitted outside of normal working hours and may not have brought their insulin with them. To avoid delay in administration in these instances, nursing staff should contact the on-call pharmacist as soon as possible. Collection should be arranged by the ward staff.

## 7.0 Administration of insulin

7.1 Healthcare practitioners are responsible for the appropriate administration of insulin therapy while patients are in their care.

7.2 All doses of insulin should be measured and administered using an insulin syringe or commercially-available insulin pen device. Intravenous syringes must never be used for insulin administration.

7.3 Insulin should not be administered through clothing as this increases the risk of textile particles being injected and serving as a focal point for infection.

### 7.4 Patient self-administration

7.4.1 Systems are in place to enable hospital inpatients to self-administer insulin where feasible and safe.

7.4.2 Empowering patients to self-administer insulin can improve safety, particularly in relation to ensuring correct dosing and time of administration.

7.4.3 Patients who intend to self-administer insulin should be assessed for suitability according to the Trust’s *Patient Self Administration Policy*, available on the intranet.

7.4.4 When patients self-administer insulin, ensure that:

- Self-administered doses are recorded on the patient’s medication administration record chart;
- Patients have access to appropriate blood glucose monitoring equipment;
- Patients have access to insulin stored in their bedside locker (where

possible).

## 8.0 Forms of Insulin

### 8.1 Insulin Pen Devices:

- Insulin pen devices are intended to be used by patients to administer their own insulin.
- Patients should be encouraged to self-inject (subject to risk assessment).
- Insulin pens that are **in use** can be kept at room temperature in a locked medication trolley or cabinet for up to one month.
- All pens should be labelled with the patient name and date of opening. Insulin should not be injected straight from the fridge.
- Only keep insulin pens that **are not** in use in the fridge

### 8.2 Insulin Pen Needles

- Pen needles are for single injection use, they should be put on the pen device at the time of injection and removed immediately afterwards and disposed of in the sharps bin.
- Pen needles should **not** be left on a pen or used more than once.
- If nursing staff are administering using insulin pen devices they should use **NovoFine® Autocover®** pen needles to reduce the risk of needle stick injury.
- Pen needles can be ordered from the NHS supply chain

### 8.3 Vials of insulin

- Vials of insulin that are being used with insulin syringes should only be used for one individual patient (i.e. one vial per patient).
- Vials that are **in use** can be kept at room temperature in the drugs trolley for up to one month before being discarded.
- Vials in use should be labelled with the patient name and the date of opening.
- Only keep vials that are **not in** use in the fridge.

### 8.4 Insulin Syringes

- All wards and departments where insulin is administered should keep insulin syringes in stock.

- Insulin syringes should be used once then discarded in the sharps bin.
- Wards/departments should order safety syringes through the NHS Supply Chain.

## 9.0 Monitoring

- Check for any allergies the patient may have.
- Check glucose level and record on the in-patient insulin administration chart. The required frequency of monitoring should be identified on the administration chart by the prescriber.
- In the event of hypoglycaemia, follow hypoglycaemia guidelines. Still administer intermediate or long-acting insulins unless instructed otherwise.
- Ensure the prescription on the diabetic drug chart is followed and inform the doctor if blood glucose levels remain outside the target range.

## 10.0 References

- “Safer Administration of insulin”, Rapid Response Report, National Patient Safety Agency, June 2010. CAS reference: NPSA/2010/RRR013. Available from: <http://www.nrls.npsa.nhs.uk/alerts/?entryid45=74287>
- “The adult patient’s passport to safer use of insulin”, Patient Safety Alert, National Patient Safety Agency, March 2011. CAS reference: NPSA/2011/PSA003. Available from: <http://www.nrls.npsa.nhs.uk/resources/?EntryId45=130397>

## **Appendix 1:**

### Insulin passport (sample)

Hard copies of this form are available from: [www.nhsforms.co.uk](http://www.nhsforms.co.uk)





## Insulin Passport design (Inner)

The hard copy version of this passport folds to credit-card size



### Insulin Passport

#### Instructions

You should complete as much information for your passport as possible, then fold it as instructed.

Keep it with you for emergencies and for reference when insulin products are prescribed or dispensed.

The area below is not for use as daily diary record.

In the table below you should record information of your current insulin products. Provide as much detail so that your insulin is clearly identified. A healthcare professional can help you with this. If someone else has added information, ask them to sign it. You must keep this information up to date. Keep the passport with you and when you need to contact a healthcare professional, show it to them. They can use the information to help identify exactly what insulin products you use.

Date Started	Date Stopped	Insulin Brand name	Presentation (for example, vial, cartridge, or prefilled pen)	Signature

## **Appendix 2:**

Patient information booklet: “*The Safe Use of Insulin and You*”

A copy is available for download from:

<http://www.nhs.uk/resource-search/publications/nhs-dakc-insulin-use-it-safely.aspx>

The information booklet is also available in the following formats:

- Large print
- Gujarati
- Polish
- Punjabi
- Somali
- Turkish
- Urdu
- Welsh

## Storage and disposal

- Store unopened supplies of insulin in a refrigerator - it must not freeze
- Insulin in use can be kept at room temperature but avoid direct sunlight and heat e.g near radiators, fires or window sills
- Always dispose of needles into a "sharps" bin - these are available on prescription
- Make sure that you have enough supplies of insulin - especially when you are going on holiday

## Hypoglycaemia (Hypos)

Hypoglycaemia is the main side effect of insulin treatment. This can happen if your blood glucose levels drop below 4 mmol/l. Early symptoms of hypos are:

- Sweating heavily
- Anxiety
- Trembling and shaking
- Tingling of the lips
- Hunger
- Going pale
- Palpitations
- Dizziness

## How to avoid hypos:

- Eat regularly
- Keep to recommended alcohol limits and do not drink on an empty stomach
- Take your insulin at recommended doses and times
- Test before driving and do not drive if your blood glucose is less than 5 mmol/l
- Always carry glucose, snacks and your meter
- You may need to reduce insulin doses before and after exercise

If you have a lot of hypos ask to see the specialist diabetes team.

GP/Practice Nurse

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Useful Contacts

Local Diabetes Helpline

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NHS Diabetes: [www.diabetes.nhs.uk](http://www.diabetes.nhs.uk)

Diabetes UK website: [www.diabetes.org.uk](http://www.diabetes.org.uk)

Produced in cooperation with:

- ABCD - Association of British Clinical Diabetologists
- Community Diabetes Consultant Forum
- Diabetes Nurse Consultants Group
- Diabetes UK - [www.diabetes.org.uk](http://www.diabetes.org.uk)
- DESMOND Diabetes Education Programme
- DISN UK Group
- IDOP - Institute of Diabetes for Older People
- National Patient Safety Agency
- NHS Diabetes
- Primary Care Diabetes Society
- TREND UK
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# The safe use of insulin and you



- The **Right** insulin
- The **Right** dose
- The **Right** way
- The **Right** time
- Hypoglycaemia

Patient Information  
Booklet

Adapted from the National Patient Safety Agency, patient information booklet - Diabetes. Insulin, use it safely - in partnership with National Diabetes Working Groups

Insulin treatment improves quality of life in many people and saves the lives of others. It is used to lower blood glucose levels. However, insulin management and prescribing errors are very common and can lead to patient harm. These are often as a result of not having:

*“The Right insulin, in the Right dose, in the Right way and at the Right time”*

To keep safe you need to “think” about:

## The Right Insulin

There are over 20 different types of insulin. Your Healthcare Professional will have discussed with you which insulin may best suit your needs. The packaging of insulin is often very similar and so are insulin names. This table shows some insulin names that are often confused:

Humalog	with	Humalog Mix 25 or Humalog Mix 50
Humulin S	with	Humulin I or Humulin M3
Humalog	with	Humulin I or Humulin S or Humulin M3
NovoRapid	with	NovoMix 30
Levemir	with	Lantus
Hypurin Porcine Neutral	with	Hypurin Porcine 30/70 Mix

Make sure you carry an insulin ID Card showing the correct name of your insulin.

## The Right Dose

Insulin comes in vials for use with insulin syringes and pumps, in cartridges for insulin pens or pre-filled pens. Each should be clearly labelled with the name of the insulin. You should keep a record of the amount of units of insulin you are taking.

There are 2 different designs of insulin cartridge so not all cartridges can be used in all insulin pens. If you use cartridges you need to know which pen is right and safe for you to use.

Pre-filled pens should contain your prescribed insulin, check the name of the insulin is correct with your Pharmacist before you leave the pharmacy.

If insulin is prescribed using the letter “U” after the dose needed instead of writing the word “units” in full, the “U” can be mistaken for an “0”. This can lead to a risk of you having an overdose of insulin, for example 40 units instead of 4. If someone else gives your insulin always ask to check the dose.



## The Right Way

- Insulin should be injected at a 90° angle
- You can use the upper outer thighs, buttocks and abdomen as injection sites
- Vary the places you inject into to avoid the development of fatty lumps (lipohypertrophy) which will delay insulin absorption
- Change your insulin pen needle every time you inject



## The Right Time

Some people need to take insulin with or just after food; others up to 40 minutes before, and some at bedtime. Please ask your healthcare professional to explain when you should take yours.

If you are admitted to hospital and are well enough, ask to keep your insulin with you so you can self manage your diabetes - this is really important if an insulin pump is used.

If you can't give or keep your own insulin, don't be afraid to ask staff when you need it.