



Medication Safety Series: MSS6

Insulins



ESSENTIAL INFORMATION TO PRESCRIBE & ADMINISTER INSULIN SAFELY:

- ✓ Insulin type(s) e.g., insulin lispro
 - ✓ Insulin brand name(s) e.g., Lantus, Novorapid
 - ✓ Device type(s) e.g., prefilled device, cartridge, vial, insulin pump
 - ✓ Current dosage regime e.g., 6 units at breakfast, 8 units at lunchtime & teatime, 10 units at bedtime
 - ✓ Who usually administers the insulin e.g. patient, district nurse, relative, carer
 - ✓ For insulin pumps only: current basal rate, bolus doses, type of insulin pump, carbohydrate ratio and insulin sensitivity
- } see [appendix](#)

2. Safety Checks during Admission:

- Ensure all regular doses of insulin have been administered. Insulin is a **critical medicine**, and all omitted doses must be investigated, and the prescriber informed immediately to enable appropriate and timely action to be taken.
- Ensure blood glucose levels are being monitored and recorded at the frequency specified on the blood glucose monitoring chart and appropriate quality checks are undertaken on the monitoring device.
- Monitor stock levels of insulin, and monitoring/administration equipment to ensure continuity of supplies and prevent interruption of treatment.
- Ensure insulin is appropriately stored and date of opening of each device is recorded.

3. On Discharge:

- If the insulin product or device has changed during admission, update the patient's insulin passport (if available) or provide information about the new product.
- Ensure the discharge letter includes the essential information in addition to the most recent blood glucose results.
- Ensure the patient / person responsible for insulin administration post discharge, is familiar with the insulin type and dosage and is able to use the device correctly.
- If necessary, ensure the patient has a supply of insulin syringes & appropriate needles, and any other equipment needed to administer insulin safely

1. On Admission:

- Check NEWS, including blood glucose measurement and urine/serum ketones if blood glucose is >11 mmol/l
- Assess for any "red flag" symptoms of diabetic ketoacidosis (DKA) or hyperglycaemic hyperosmolar state (HHS) ensuring immediate transfer to acute hospital if present (see section 4.2 of Trust guidelines: [Diabetes Management for In-patients](#))
- Confirm the essential information detailed above and document in the electronic patient record.
- Ensure that the insulin(s) is/are prescribed on the Electronic Prescribing and Medication Administration (EPMA) record.
- Variable doses insulins which are based on blood glucose monitoring should be prescribed on EPMA and on a supplementary paper Variable Dose Insulin Prescription Chart.
- Ensure that the blood glucose monitoring chart is completed.
- For patients prescribed a "DAFNE" regime (dose adjustment for normal eating), establish the range of doses usually administered and evaluate the patient's risk of self-harm behaviours, document & prescribe accordingly.
- Establish when the last dose of insulin was administered and prescribe a STAT (once only) dose where necessary.
- Ensure that there is adequate supply of insulin available for the patient. This may include using patients own drugs (PODs), arranging for a supply to be ordered or accessing emergency insulin (see [appendix](#)) if necessary. If vials are in use, ensure there is a sufficient supply of needles and syringes available to allow administration.
- Ensure that appropriate medication (Dextrose 40% oral gel & glucagon 1 mg IM) is prescribed for the potential treatment of hypoglycaemia. These are available in the emergency drug bag.
- If you are unable to establish the insulin regime in a timely fashion or if the patient is at risk of self-harm, remember that the patient will still require insulin to prevent hyperglycaemia. This is particularly important in patients with type 1 diabetes. Advice on interim management of the patient must be sought immediately from a Diabetologist or Medical Registrar on call at the local acute hospital.

Approved name	Product name	Strength	Form	Device
Short-acting insulins				
Soluble/Neutral insulin	Hypurin Porcine Neutral	100 units/ml	10 ml vial	
			3 ml cartridge	Autopen Classic
	Actrapid Humulin S	100 units/ml	10 ml vial	
			3 ml cartridge	HumaPen Savvio
Insulin aspart	NovoRapid	100 units/ml	10 ml vial	
			3 ml cartridge	NovoPen 6 or Novopen Echo
			3 ml pre-filled device (1-60 units)	FlexPen
			3 ml pre-filled device (1-80 units)	FlexTouch
			1.6 ml cartridge	PumpCart
	Fiasp	100 units/ml	10 ml vial	
			3 ml cartridge	NovoPen 6 or NovoPen Echo
			3 ml pre-filled device	FlexPen or FlexTouch
	Trurapi	100 units/ml	10ml vial	
			3ml cartridge	AllStar, AllStar Pro, Junior Star, Autopen 24
			3ml pre-filled device	Solostar
Insulin glulisine	Apidra	100 units/ml	10 ml vial	
			3 ml cartridge	AllStar Pro, Junior Star, Autopen 24
			3 ml pre-filled device	SoloStar
Insulin lispro	Admelog	100 units/ml	10ml vial	
			3 ml cartridge	AllStar Pro, Junior Star
			3 ml pre-filled device	Solostar
	Humalog	100 units/ml	10 ml vial	
			3 ml cartridge	HumaPen Savvio
			3 ml pre-filled device	KwikPen range
	Lyumjev	100 units/ml	10ml vial	
			3 ml cartridge	Humapen Savvio
			3ml prefilled device	KwikPen range
	200 units/ml	3ml prefilled device	Kwikpen	
Intermediate & long-acting insulins				
Insulin degludec	Tresiba	100 units/ml	3 ml cartridge	NovoPen 6
			3 ml pre-filled device (1-80 units)	
		200 units/ml	3 ml pre-filled device (2-160 units)	FlexTouch
Insulin degludec and liraglutide	Xultophy	100 units & 3.6 mg/ml	3 ml pre-filled device	
Insulin detemir	Levemir	100 units/ml	3 ml cartridge	NovoPen 6
			3 ml pre-filled device (1-60 units)	FlexPen
			3 ml pre-filled device (1-50 units)	

Approved name	Product name	Strength	Form	Device
Intermediate & long-acting insulins (continued)				
Insulin glargine ¹	Lantus	100 units/ml	10 ml vial	
			3 ml cartridge	AllStar Pro, Autopen 24, JuniorSTAR
			3 ml pre-filled device	SoloStar
	Abasaglar	100 units/ml	3 ml cartridge	HumaPen Savvio
			3 ml pre-filled device	KwikPen
Toujeo ¹	300 units/ml ¹	1.5 ml pre-filled device	SoloStar	
		3 ml pre-filled device	DoubleStar	
Insulin glargine and lixisenatide	Suliqua	100 units & 33 micrograms/ml	3 ml pre-filled device	SoloStar
		100 units & 50 micrograms/ml	3 ml pre-filled device	SoloStar
Isophane insulin	Hypurin Porcine Isophane	100 units/ml	10 ml vial	
			3 ml cartridge	Autopen Classic
	Insulatard	100 units/ml	10 ml vial	
			3 ml cartridge	NovoPen / NovoPen Echo
			3 ml pre-filled device	
Humulin I	100 units/ml	10 ml vial		
		3 ml cartridge	HumaPen Savvio	
		3 ml pre-filled device	KwikPen	
Biphasic insulins				
Biphasic insulin lispro	Humalog Mix25	100 units/ml	10 ml vial	
			3 ml cartridge	HumaPen Savvio
			3 ml pre-filled device	KwikPen
	Humalog Mix50	100 units/ml	3 ml cartridge	HumaPen Savvio
3 ml pre-filled device			KwikPen	
Biphasic insulin aspart	NovoMix 30	100 units/ml	3 ml cartridge	NovoPen 6 or NovoPen Echo
			3 ml pre-filled device	FlexPen
Biphasic isophane insulin	Humulin M3	100 units/ml	10 ml vial	
			3 ml cartridge	HumaPen Savvio
			3 ml pre-filled device	KwikPen
	Hypurin Porcine 30/70 Mix	100 units/ml	10 ml vial	
		3 ml cartridge	Autopen Classic	

1. Insulin glargine 100 units/ml and Toujeo are not bioequivalent and are not directly interchangeable, when switching between the two formulations, dose adjustment may be necessary to achieve target blood glucose levels as detailed in the [SPC](#).

**Emergency stock
of Novorapid &
Lantus insulin is
available here →**

TEWW area	Site	Location
North Yorkshire	Cross Lane Hospital	Danby Ward
North Yorkshire	Foss Park Hospital	Moorcroft Ward
County Durham, Darlington	West Park Hospital	Oak Ward
County Durham, Darlington	Lanchester Road Hospital	Farnham Ward
County Durham, Darlington	Auckland Park Hospital	Ceddesfeld Ward
Tees Valley	Roseberry Park Hospital	Bransdale Ward