

Supporting material - NADIA report comparison 2013 vs 2015

<i>Area of Improvement</i>	<i>2013 (%)</i>	<i>Quartile 2013</i>	<i>2015 (%)</i>	<i>Quartile 2015</i>
<i>Medication errors</i>	41.4%	Q3	27.1%	Q1
<i>Prescription errors</i>	14.9%	Q2	8.3%	Q1
<i>Management errors</i>	29.9%	Q4	19.8%	Q2
<i>Insulin errors</i>	20.7%	Q3	10.4%	Q1
<i>Foot risk assessment during stay</i>	17.1%	Q1	50.0%	Q4
<i>% Severe hypo</i>	9.8%	Q3	4.4%	Q1

Supporting material - Email from NADIA team congratulating on the improvement

We received an email from NADIA HSCIC (HEALTH AND SOCIAL CARE INFORMATION CENTRE)

Dear Colleagues,

*We are writing to you regarding the recent publication of the National Diabetes Inpatient Audit (NaDIA) 2015 results for **Royal Derby Hospital**. After analysing the recently published hospital level results of the audit, we were pleased to find that the hospital has improved significantly in the below areas:*

Area of Improvement	2013 (%)	2015 (%)
<i>Medication errors</i>	<i>41.4%</i>	<i>27.1%</i>
<i>Prescription errors</i>	<i>14.9%</i>	<i>8.3%</i>
<i>Management errors</i>	<i>29.9%</i>	<i>19.8%</i>
<i>Insulin errors</i>	<i>20.7%</i>	<i>10.4%</i>
<i>Foot risk assessment during stay</i>	<i>17.1%</i>	<i>50.0%</i>
<i>% Severe hypo</i>	<i>9.8%</i>	<i>4.4%</i>

Firstly, we would like to congratulate you on the improvements outlined above and the work you have been doing to improve these areas.

Supporting material - Electronic prescription screen shot

Patient List Orders Results Documents Observations Patient Info Summary ECG Images E-Casenote PACS Images eSteve

Chart
 [This Chart]

Date Range
 Since
 [05-Oct-2016]
 To: []
 Status
 [All]
 Order Selection
 [All]
 Show New Orders...
 Display Format
 By Department
 Requested By
 Requested By details

Orders: All Status: All

	LANTUS (Insulin Glargine) - Solostar (Disposable Pen) 16 Unit(s) Structured Insulin Dosing ONCE daily at 6pm Subcutaneous For Discharge	19-Jan-17	Active Master Order	
	NOVORAPID (Insulin Aspart) - Flexpen (Disposable Pen) 0 - 4 Unit(s) Structured Insulin Dosing THREE times a day (8am,1pm,6pm) Subcutaneous if premeal gluucose high please give Novorapid as follows : Glucose 12-14.9 -1 unit s/c, 15-17.9 - 2 units, 18-20.9 - 3 units, >21 - 4 units	19-Jan-17	Active Master Order	
PHARM	NOVORAPID (Insulin Aspart) - Flexpen (Disposable Pen) 4 Unit(s) Structured Insulin Dosing ONCE IMMEDIATELY (STAT) Subcutaneous	18-Jan-17	Completed	
PHARM	LANTUS (Insulin Glargine) - Solostar (Disposable Pen) 16 Unit(s) Structured Insulin Dosing ONCE daily at 6pm Subcutaneous	18-Jan-17	Active Master Order	
PHARM	HUMULIN M3 (Human Insulin Biphasic) - Kwikpen (Disposable Pen) 20 Unit(s) Structured Insulin Dosing ONCE Daily at 8am Subcutaneous Give with Food	17-Jan-17	Discontinued	18-Jan-17 09:54
PHARM	HUMULIN M3 (Human Insulin Biphasic) - Kwikpen (Disposable Pen) 14 Unit(s) Patient Managed Dosing ONCE daily at 6pm Subcutaneous Give with Food	15-Jan-17	Discontinued	18-Jan-17 09:54

Supporting material – EPMA screen shot 2

Order: Order ID:

Requested By:

Messages:

Ordering Information

☐ Conditional Order Template Name:

To Be Issued From Hospital Pharmacy ☐

:

:

:

★ Device

★ Dose

To

★ Unit Of Measure

★ Frequency

User Schedule Info

★ Route

★ Insulin Management

Start Date

Length of Treatment

Stop Date

Admitted On Medicine? ☐

Additional Information

HUMULIN M3 (Human Insulin Biphasic) - Kwikpen (Disposable Pen) 20 Unit(s) Structured Insulin Dosing ONCE Daily at 8am Subcutaneous Give with Food				17-Jan-17 09:41	18-Jan-17 09:54		✓	Supporting material – EPMA screen shot 3												
							TE													
LANTUS (Insulin Glargine) - Solostar (Disposable Pen) 16 Unit(s) Structured Insulin Dosing ONCE daily at 6pm Subcutaneous				18-Jan-17 09:58		✓		✓	TE											
NOVORAPID (Insulin Aspart) - Flexpen (Disposable Pen) 0 - 4 Unit(s) Structured Insulin Dosing THREE times a day (8am,1pm,6pm) Subcutaneous if premeal glucose high please give Novorapid as follows : Gluocse 12-14.9 :1 unit s/c, 15-17.9 - 2 units, 18-20.9 - 3 units, >21 - 4 units				19-Jan-17 09:27								✓		✓						
													KW		KW					

Administered At

Date: 18-Jan-2017 Time: 18:00

Supporting material – EPMA screen shot 4

Task Information

Task: LANTUS (Insulin Glargine) -
Solostar (Disposable Pen)

Start Date/Time: 18-Jan-17 09:58

Stop Date/Time:

Advisory Message

			18Jan17	
		Observation	18:00	
		Blood Glucose Level	26.9 mmols	
		Time of last Blood Glucose	17:00	
		Insulin Administered	Other (please spe...	
		Dose of Insulin Given	16 Unit(s)	
		Patient Self Administered	No	
		Additional Comments		

Performed By: Eaton, Tina (Nurse)

Entered By:

OK

Cancel

Calculate

View Comment

Item Info

Help





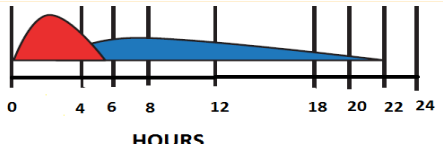
Supporting material – Ward assurance data

	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16
Continence	94.29%	97.46%	97.52%	96.19%	96.28%	94.66%	92.92%	94.11%	95.63%	96.12%	94.75%	96.16%	96.27%
Control	95.35%	97.81%	96.99%	95.93%	97.71%	93.55%	95.00%	93.94%	96.95%	92.31%	95.90%	97.56%	98.29%
Diabetes	No Data	No Data	No Data	No Data	No Data	29.73%	42.11%	29.65%	25.23%	32.46%	32.28%	39.35%	59.90%
Dignity	98.72%	99.10%	99.20%	98.99%	99.30%	98.53%	99.21%	98.81%	98.85%	99.09%	98.30%	98.80%	99.06%
Discharge	94.07%	94.21%	93.35%	94.12%	85.33%	83.06%	82.84%	84.78%	92.15%	93.16%	94.47%	92.99%	93.77%
Falls	98.41%	97.42%	98.90%	97.85%	98.74%	97.04%	96.98%	96.16%	97.12%	97.37%	95.93%	95.57%	97.10%
IPC	96.36%	96.05%	95.98%	95.64%	95.29%	92.08%	96.90%	95.29%	96.37%	96.43%	96.22%	96.61%	97.70%
Medicine	94.68%	95.59%	95.00%	92.48%	92.53%	88.74%	91.27%	91.39%	92.70%	91.73%	92.40%	91.86%	92.06%

Supporting material – Insulin profile chart adapted from Think Glucose



Typical Insulin Profiles

Insulin Type	Proprietary Name – use when prescribing	Manufacturer	Device	Taken	Onset	Peak	Duration	Typical activity profiles
Rapid-acting analogue insulins								
Insulin Aspart	NovoRapid®	Novo Nordisk	Vial, Flexpen, cartridge	Just before, with or just after food	10-20 mins	1-3 hrs	2-5 hrs	
Insulin Lispro	Humalog®	Lilly	Vial, Kwikpen, cartridge					
Insulin Glulisine	Apidra®	Sanofi-Aventis	Vial, Solostar pen, cartridge for Optipen					
Short-acting insulins								
Insulin – soluble/ neutral	Actrapid®	Novo Nordisk	Vial	15-30 mins before food	30-60 mins	1-5 hrs	6-8 hrs	
	Humulin S®	Lilly	Vial, cartridge					
	Insuman® Rapid	Sanofi-Aventis	Cartridge					
	Hypurin® Bovine Neutral	Wockhardt	Vial, cartridge					
	Hypurin® Porcine Neutral	Wockhardt	Vial					
Intermediate-acting insulins								
Isophane insulin	Hypurin® Bovine Isophane	Wockhardt	Vial, cartridge	About 30 mins before food or bedtime	60-90 mins	2-12 hrs	12-24 hrs	
	Hypurin® Porcine Isophane	Wockhardt	Vial, cartridge					
	Insulatard®	Novo Nordisk	Vial, Innolet pen, cartridge					
	Humulin I®	Lilly	Vial, Kwikpen, cartridge					
	Insuman® Basal	Sanofi-Aventis	Vial, Solostar pen, cartridge					
Long-acting analogue insulins								
Insulin Detemir	Levemir®	Novo Nordisk	Flexpen, cartridge	Once or twice a day	2-4 hrs	6-14 No peak	16-20 20-24 hrs	
Insulin Glargine	Lantus®	Sanofi-Aventis	Solostar pen, cartridge		2-4 hrs			
Insulin Degludec	Tresiba®	Novo Nordisk	Flextouch Pen	Once a day	30-90 mins	No peak	Over 42 hours	
Mixed Insulins – biphasic								
Biphasic insulin aspart (analogue)	NovoMix® 30	Novo Nordisk	Flexpen, cartridge	Just before, with or just after food	10-20 mins	1-4 hrs	Up to 24 hrs	
Biphasic insulin Lispro (analogue)	Humalog® Mix 25 Humalog® Mix 50	Lilly	Kwikpen, cartridge					

U500 insulin (Humulin R®)

This insulin is unlicensed and is five times more concentrated than standard (U100) insulin; it should be initiated by a diabetes consultant only.

It is prescribed in 'marks' and needs to be administered via a 0.3 or 0.5ml insulin syringe.

(One 'mark' on one of these syringes is equivalent to 5 units of insulin).

All patients admitted on u500 insulin should be referred to the diabetes team via iCM.

REFER TO DIABETES TEAM .
Refer to diabetes inpatient nursing team via iCM.

Telephone contacts/ bleep...87671 / bleep 3441.....

Supporting material – Pocket guide for junior doctors and nurses

For full guidelines, care bundles and other information go to the 'Doctors in Training' (DIT) link and click on the 'Junior Doctors' link

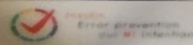
Developed by Trust Junior Doctor Patient Safety Group

Essential guide for Junior doctors

August 2022



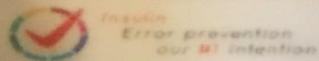
Derby Teaching Hospitals NHS Foundation Trust



TYPICAL INSULIN PROFILES

Insulin Type	Proprietary Name	Device	Taken	Onset	Peak	Duration
Long-acting analogue insulins						
Insulin Aspart	NovoRapid®	Vial, Flexpen, Cartridge	Just before, with or just after food	10-20 mins	1-3 hrs	2-5 hrs
Insulin Lispro	Humalog®	Vial, Kwikpen, Cartridge				
Insulin Glulisine	Apidra®	Vial, Solostar Pen, Cartridge for Optipen				
Short-acting insulins						
Insulin-soluble/neutral	Actrapid®	Vial				
	Humulin S®	Vial, Cartridge				
	Insuman® Rapid	Cartridge	15-30 mins before food	30-60 mins	1-5 hrs	5-9 hrs
	Hypurin® Bovine Neutral	Vial, Cartridge				
	Hypurin® Porcine Neutral	Vial				
Intermediate-acting insulins						
Isophane insulin	Hypurin® Bovine	Vial, Cartridge				
	Isophane					
	Hypurin® Porcine	Vial, Cartridge	About 30 mins before food or bedtime	60-90 mins	2-12 hrs	12-24 hrs
	Isophane					
	Insulatard®	Vial, Innolet Pen, Cartridge				
	Humulin I®	Vial, Kwikpen, Cartridge				
	Insuman® Basal	Vial, Solostar Pen, Cartridge				
Long-acting analogue insulins						
Insulin Determir	Levemir®	Flexpen, Cartridge	Once or twice a day	2-4 hrs	6-14 hrs	16-20 hrs
Insulin Glargine	Lantus®	Solostar Pen, Cartridge			No peak	20-24 hrs
Insulin Degludec	Tresiba®	Flextouch Pen	Once a day	30-90 mins	No peak	Over 42hrs

Supporting material – Pocket guide for junior doctors and nurses



TYPICAL INSULIN PROFILES

Insulin Type	Proprietary Name	Device	Taken	Onset	Peak	Duration
Mid-acting analogue insulins						
Insulin Aspart	NovoRapid®	Vial, Flexpen, Cartridge	Just before, with or just after food	10-20 mins	1-3 hrs	2-5 hrs
Insulin Lispro	Humalog®	Vial, Kwikpen, Cartridge				
Insulin Glulisine	Apidra®	Vial, Solostar Pen, Cartridge for Optipen				
Short-acting insulins						
Insulin-soluble/neutral	Actrapid®	Vial	15-30 mins before food	30-60 mins	1-5 hrs	5-9 hrs
	Humulin S®	Vial, Cartridge				
	Insuman® Rapid	Cartridge				
	Hypurin® Bovine Neutral	Vial, Cartridge				
	Hypurin® Porcine Neutral	Vial				
Intermediate-acting insulins						
Isophane insulin	Hypurin® Bovine Isophane	Vial, Cartridge	About 30 mins before food or bedtime	60-90 mins	2-12 hrs	12-24 hrs
	Hypurin® Porcine Isophane	Vial, Cartridge				
	Insulatard®	Vial, Innolet Pen, Cartridge				
	Humulin I®	Vial, Kwikpen, Cartridge				
	Insuman® Basal	Vial, Solostar Pen, Cartridge				
Long-acting analogue insulins						
Insulin Determir	Levemir®	Flexpen, Cartridge	Once or twice a day	2-4 hrs	6-14 hrs	16-20 hrs
Insulin Glargine	Lantus®	Solostar Pen, Cartridge			No peak	20-24 hrs
Insulin Degludec	Tresiba®	Flextouch Pen	Once a day	30-90 mins	No peak	Over 42hrs

Supporting material – Pocket guide for junior doctors and nurses

ACUTE HYPOGLYCAEMIA

Hypoglycaemia = blood glucose <4mmol/l

Conscious, oriented and able to swallow

Give fast acting oral carbohydrate

One of:

Glucose tablets (4-5)

Lucozade 100ml

Fruit juice 200ml

Cola/lemonade 100ml

Conscious and can swallow but confused and aggressive

If capable and cooperative give fast acting oral carbohydrate (see left)

If not capable or cooperative but able to swallow, give 2 tubes

Glucose Gel

If unable to take either, give IM glucagon

Unconscious or fitting and unable to take orally

Check ABC. Stop insulin, call for senior help

Give 75ml 20% dextrose IV quickly.

If no IV access, give IM glucagon and then obtain IV access

Check bedside blood glucose after 10-15 minutes- if still less than 4mmol/l repeat oral carbohydrate, GlucoseGel, or iv dextrose according to consciousness as above. Check again after 10-15 mins and repeat up to three times

When blood glucose above 4 mmol/l give 20g long acting carbohydrate;

- e.g. 2 biscuits or a slice of bread or 200-300 ml of milk (double amount if glucagon used)
- or give meal immediately if due

Review cause of hypo- consider referral and insulin dose reductions

If NBM give 10% glucose infusion (eg 100 ml/h)

Supporting material – Pocket guide for junior doctors and nurses

ACUTE HYPERGLYCAEMIA IN DIABETICS

Look for causes – Consider intercurrent illness or missed oral hypoglycaemics

Path 1: Patient clinically unwell
 Vomiting / NOT eating and drinking OR urinary ketones > ++
 capillary ketones > 1.5 mmol/L

Check U/E, venous bicarbonate And lab glucose

Capillary ketones > 3 mmol/L or Urinary ketones > ++ AND Bicarbonate < 15 or pH < 7.35?

Yes → See DKA guidelines

No → Patient hypovolaemic. BG > 30 mmol/L Urinary ketones -ve or capillary ketones < 1.5 mmol/L Serum osmolality > 320?

Yes → See HHS guidelines

No → Consider IV variable rate insulin if not eating Look for concurrent illness

Path 2: Patient clinically well
 Eating and drinking, urinary ketones negative OR capillary ketones < 1.5 mmol/L

BG > 25 mmol/L?

Yes → Assess pre-meal BG profile review treatment regime. Check BG after 2 Still > 25?

Yes → Review doses of oral agents or insulin

No → Still well?

Yes → Consider stat dose sc insulin if not within 2 hours of expected insulin dose if patient already on basal bolus insulin and self managing ask them how much to give. Use patient's own short acting insulin if applicable, if not, use Actrapid. *Never give more than 10% total daily insulin dose as a single stat dose. If new to insulin consider 4 units if < 70kg or in renal failure, 6 units if > 70kg.

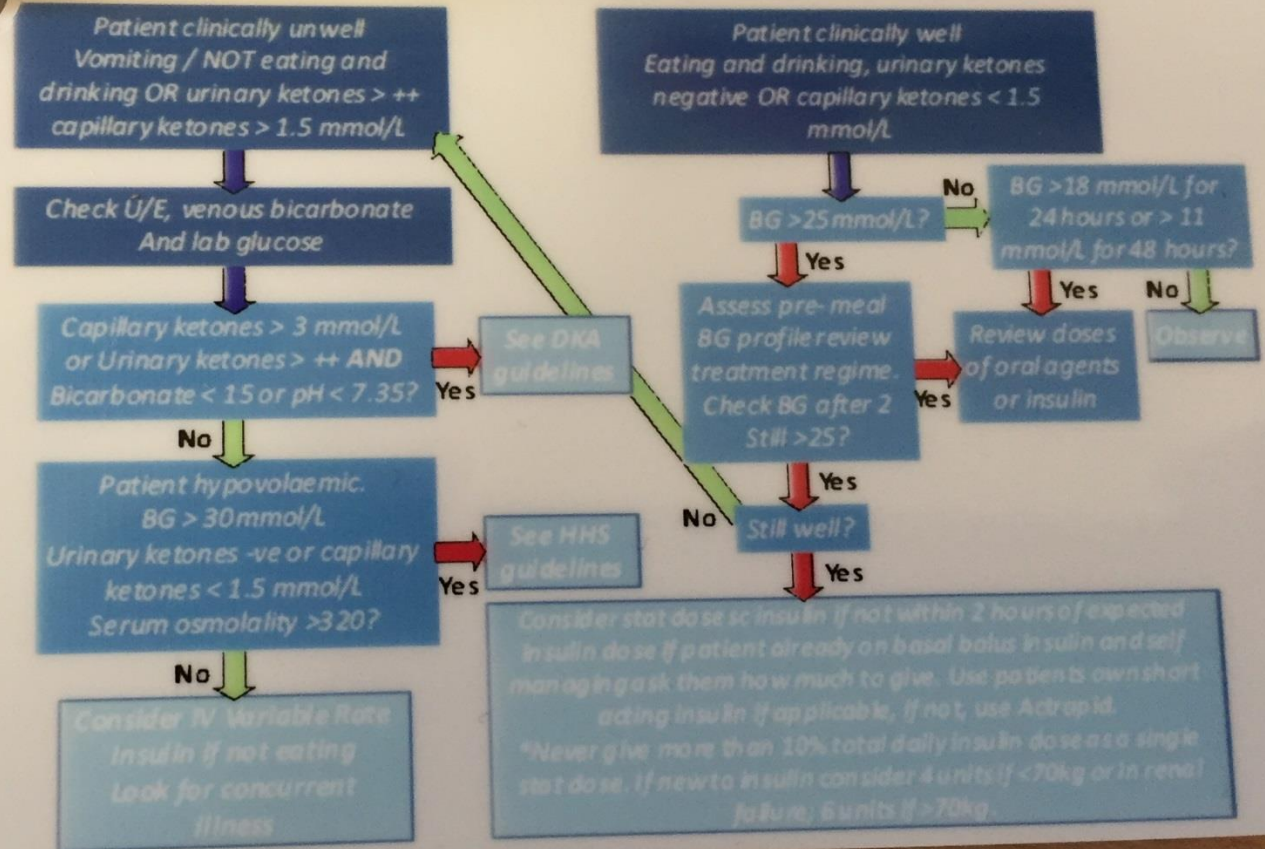
No → BG > 18 mmol/L for 24 hours or > 11 mmol/L for 48 hours?

Yes → Review doses of oral agents or insulin

No → Observe

ACUTE HYPERGLYCAEMIA IN DIABETICS

Look for causes – Consider intercurrent illness or missed oral hypoglycaemics



Supporting material – An initiative by one of the staff nurses in an oncology ward to improve ward assurance.

Evidence of impact on other staff members in the hospital

