

Prescribing and administration of insulin on EPMA - Full Paediatric Clinical Guideline – Derby Site Guideline

Reference no.: CH CLIN D16/ Sept 22/v004

Prescribing and administration of insulin on EPMA (Lorenzo). Full paediatric guideline Reference no.CH CLIN D16

Aim: to ensure safe prescribing of insulin for paediatric in-patients with Diabetes Mellitus

Purpose: To safely prescribe insulin for children and young people with diabetes when admitted as an inpatient, using Electronic Prescribing and Medicines Administration system (EPMA) Lorenzo

1. Main guideline

Background

Newly diagnosed patients with Type 1 diabetes who are **not** in diabetic ketoacidosis (or once DKA resolved) require the following prescriptions:

1. Novorapid pre meal – meal set dose
2. Long-acting insulin (Degludec or Detemir)

Newly diagnosed patients with Type 1 diabetes – once admitted to Puffin or Dolphin ward require the following prescription as advised by the paediatric diabetes team:

1. Novorapid pre meal –dose calculated by carbohydrate counting
Instead of meal set dose
2. Novorapid pre meal – correction dose to correct high blood glucose
3. Long-acting insulin (Degludec or Detemir)

Established patients with diabetes mellitus on a multiple daily injection regime require the following prescriptions

Either....

For those that calculate meal dose by carbohydrate counting

1. Novorapid or fiasp pre meal –carbohydrate counting
2. Novorapid or fiasp pre meal – correction dose to correct high blood glucoses
3. Long-acting insulin (Degludec or Detemir or Glargine)

Or....

For those on fixed dose at each meal

1. Novorapid or Fiasp pre meal – meal set dose
2. Novorapid or Fiasp pre meal – correction dose to correct high blood glucoses
3. Long-acting insulin (Degludec or Detemir or Glargine)

Order sets

There are 3 'order sets' on EMPA (Lorenzo) to help with prescribing insulin for paediatric patients with diabetes

- Insulin for type 1 diabetes newly diagnosed under 1 year old
- Insulin for type 1 diabetes newly diagnosed 1 year and over
- Insulin for type 1 diabetes for established patients.... Which has all possible insulins used in paediatric diabetes patients.

Section 1:

How to prescribe insulin on EMPA (Lorenzo) for newly diagnosed patients with type 1 diabetes on day 1 of admission or when changing from DKA guideline

When prescribing for the first time, you can select both the Novorapid (meal set dose) and the long-acting insulin (Degludec or Detemir) from the same order set at the same time. Alternatively, you can select each insulin individually.

Please see Appendix 1: Screenshots to aid prescribing Novorapid Set Dose and Long-Acting Insulin on Lorenzo for newly diagnosed patient with type 1 diabetes

1. Novorapid: meal set dose:

Novorapid should be given by pen injection device 15 minutes before meals. These meal doses should be prescribed at 08:00, 12:00 and 17:00.

and

Long-acting insulins: Degludec or Detemir

Degludec and Detemir should be given when an inpatient, at 6pm.

Round doses up to nearest half unit for children under 5 years of age and to nearest whole unit for children over 5 years of age.

Step 1: Search for one of 'Insulin, Diabetes, Paediatric Diabetes, Newly Diagnosed' and tick 'Search order sets'

Step 2: Select either Insulin for type 1 diabetes newly diagnosed under 1 year old
OR Insulin for type 1 diabetes newly diagnosed 1 year and over

Step 3: Tick Insulin aspart - Novorapid Penfill 100 units/ml – Meal Set Dose

Step 4: Tick Insulin Degludec-Tresiba Cartridge 100 units/ml – Basal Insulin
OR Insulin Detemir – Levemir Penfill 100 units/ml – Basal Insulin Press OK

Step 5: NOVORAPID screen will be displayed.
Check the frequency is Three times Per Day – 8am, 12pm, 5pm

Step 6: Tick 'changing dose box' and then select 'Changing dose' in BLUE

Step 7: Enter the set mealtime doses in each time block on the 'changing dose mezzanine' table – Press OK

Step 8: NB – if you are asked if you wish to update the entered details in the grid – press yes

Step 9: Press UPDATE on main prescription page

Step 10: Press OK and acknowledge reason for prescription

Step 11: LONG-ACTING INSULIN PRESCRIPTION WILL APPEAR

Step 12: Enter long acting insulin dose

Step 13: Check administration time is 6pm

Step 14: Press OK and acknowledge reason for prescription

Step 15: Double check both prescriptions and press FINISH NOW

Amending doses: Open the prescription to amend. Follow Step 6 to Step 10. You may be asked to confirm 'reason for modification'. Complete prescription change, check prescription has been amended and press FINISH.

Alternatively Discontinue/cancel current prescription and re-prescribe with new set doses.

If prescribing long acting insulin separately:

Step 1: Search for one of 'Insulin, Diabetes, Paediatric Diabetes, Newly Diagnosed,' and tick 'Search order sets'

Step 2: Select either Insulin for type 1 diabetes newly diagnosed under 1 years old
OR Insulin for type 1 diabetes newly diagnosed 1 years and over

Step 3: Tick Insulin Degludec – Tresiba Cartridge 100 units/ml – Basal Insulin
OR Insulin detemir – Levemir Penfill 100 units/ml – Basal Insulin

Step 4: Enter long acting insulin dose

Step 5: Check administration time is 6pm

Step 6: Press OK and acknowledge reason for prescription

Step 7: Double check prescription and press FINISH NOW

2. To prescribe Novorapid pre meal dose correction dose (also known as Insulin Sensitivity Factor)

Please see Appendix 2: Screenshots to aid prescribing Novorapid – Correction doses

Correction dose of Novorapid (or insulin sensitivity factor) = additional Novorapid given at meal times to correct blood glucose down to a normal blood glucose of 6 mmol/l.

Any blood glucose at mealtimes, above 6mmol/l can be corrected if there is a big enough difference to give a minimum of 0.5 units with the correction ratio.

Inpatients require a prescription for the 'correction dose' to be given before each meal expressed as

'1 unit of Novorapid is expected to reduce the blood glucose down by ***y mmol/l***, aiming for blood glucose of 6 mmol/l'

The nurse administering the Novorapid will calculate the correction dose from this formula at each meal.

Step 1: Search for one of 'Insulin, Diabetes, Paediatric Diabetes, Newly Diagnosed, Established" and tick 'Search order sets'

Step 2: Select one of the following:

Insulin for type 1 diabetes newly diagnosed under 1 year old **OR**

Insulin for type 1 diabetes newly diagnosed 1 years and over **OR**

Insulin for type 1 diabetes for established patients

Step 3: Tick Insulin aspart - Novorapid Penfill 100 units/ml – Correction Dose

Step 4: Press OK

Step 5: Tick the box beside 'Changing dose'

Step 6: Tick 'changing dose' in BLUE

Step 7: 'Changing dose mezzanine' screen will appear. Press OK

Step 8: Prescribe correction dose by amending the 'variable dose instructions'

Correction: 15 minutes before breakfast, lunch and tea. Please calculate the dose using the formula: 1 unit of Novorapid is expected to reduce the blood glucose by *Y mmols/l*, aiming for blood glucose of 6 mmols/l. Amend Y and delete text in brackets

Step 9: Enter dose range (you need to specify a suitable range)

Minimum- 0.5 units.

Maximum – need to calculate likely maximum for individual patient

Corrections are worked out using the sum $100 \div$ by Total Daily Dose (long and fast acting insulin).

Example 1: If Total Daily Dose = 20 units then correction dose will be $100 \div 20 = 5$. Therefore 1 unit of Novorapid will reduce blood glucose by 5mmol/l.

If blood glucose is 26 mmol/l and aiming for a blood glucose of 6 mmol/l, the correction dose needs to reduce blood glucose by 20 mmol/l

If 1 unit of Novorapid will reduce blood glucose by 5 mmol/l then $20 \div 5 = 4$.

4 units will reduce blood glucose by 20 mmol/l therefore a range of 0.5 units to 5 units would be appropriate.

Example 2: If Total Daily Dose = 8 units then correction dose will be $100 \div 8 = 12.5$. Therefore 1 unit of Novorapid will reduce blood glucose by 12mmol/l.

If blood glucose is 26 mmol/l and aiming for a blood glucose of 6 mmol/l, the correction dose needs to reduce blood glucose by 20 mmol/l

If 1 unit of Novorapid will reduce blood glucose by 12 mmol/l then $20 \div 12 = 1.6$ – round to nearest half = 1.5. 1.5 units will reduce blood glucose by 20 mmol/l therefore a range of 0.5 units to 2 units would be appropriate.

Step 10: Press UPDATE – a screen might be displayed that advises to avoid entering a dose less than '1', do you wish to continue? – press yes

Step 11: 'Changing dose mezzanine' screen will appear again. Press OK

Step 12: Check – dose range is visible, frequency is TDS (8am, 12pm, 5pm) and correction ratio is visible in the 'variable dose instructions'

Step 13: Press OK and acknowledge reason – it may advise mandatory fields are missing. Press yes/OK

Step 14: Double check prescription and press FINISH NOW

Amending doses: Open the prescription to amend. Tick the small box beside the current dose range. Amend the 'variable dose instruction' to new correction ratio.

Follow Step 10 – Step 13.

You may be asked to confirm 'reason for modification'. Complete prescription change, check prescription has been amended and press FINISH.

Alternatively Discontinue/cancel current prescription and re-prescribe with new correction dose.

Section 2:

Prescribing for established patients or newly diagnosed when commenced on carbohydrate counting

Please see Appendix 3: Screenshots to aid prescribing Novorapid for meals: dose to be calculated using carbohydrate counting

1. To prescribe Novorapid pre meal dose calculated by carbohydrate counting technique

Novorapid should be given by pen injection device 15 minutes before meals. These meal doses should be prescribed at 08:00, 12:00 and 17:00.

Step 1: Search for one of 'Insulin, Diabetes, Paediatric Diabetes, Established' and tick 'Search order sets'

Step 2: Select Insulin for type 1 diabetes for established patients

Step 3: Tick Insulin aspart - Novorapid Penfill 100 units/ml – Carbohydrate Counting

Step 4: Press OK

Step 5: Tick the small box in the prescribing box – see screenshot

Step 6: Prescribe carbohydrate counting ratio's by amending the 'variable dose instructions'

'Calculate *by* carbohydrate counting: 15 minutes before breakfast 1unit of Novorapid per X grams of carbohydrate. 15 minutes before lunch 1unit of Novorapid per Y grams of carbohydrate. 15 minutes before tea 1unit of Novorapid per Z grams of carbohydrate. (**Amend X, Y, Z**). You might need to delete a word in the text box to enter the ratio's. We suggest delete 'by' – see above in italics.

Step 7: Enter a range of possible insulin doses in 'Dose'.

Minimum - 0.5 units.

Maximum - need to calculate likely maximum for individual patient.

E.g. If 1 unit of Novorapid for 10 g carbohydrates and eat 100g of carbohydrates then dose is 10 units

Step 8: Select 'unit' in UOM

Step 9: Press UPDATE

Step 10: If the dose range starts at 0.5 units – the system will ask if this is ok for safety – press yes

Step 11: 'Changing dose mezzanine' screen will appear again. Press OK

Step 12: Check – dose range is visible, frequency is TDS (8am, 12pm, 5pm) and carbohydrate ratios are complete in 'variable dose instructions' in the prescription box.

Step 13: Press OK and acknowledge reason for prescription

Step 14: Double check prescription and press FINISH NOW

Amending doses: Open the prescription to amend. Follow Step 5 (this is the small box beside the current dose range) to Step 13. You may be asked to confirm 'reason for modification'. Complete prescription change, check prescription has been amended and press FINISH.

Alternatively Discontinue/cancel current prescription and re-prescribe with new carbohydrate ratio's.

2. To prescribe Novorapid 'sick day rule' dose for blood ketones above 0.5 mmol/l

Please see CH CLIN D02 or CH CLIN D14 (insulin pump patients) for calculation **This must be prescribed as a STAT dose of Novorapid on Lorenzo:**

Step 1 : Search for one of 'Insulin, Diabetes, Paediatric Diabetes, Established" and tick 'Search order sets'

Step 2: Select Insulin for type 1 diabetes for established patients

Step 3: Tick Insulin aspart - Novorapid Penfill 100 units/ml – STAT Dose

Step 4: Prescribe dose – ensure frequency is 'STAT'

Step 5: Press OK and acknowledge reason for prescription

Step 6: Double check prescription and press FINISH NOW

3. To prescribe long-acting insulins: Degludec, Detemir and Glargine (established patients) if not been previously prescribed as part of Order Set

Degludec, Detemir and Glargine should be prescribed for all established patients. The system defaults administration time to 6pm. Patients may have it a later time in the evening when at home.

Round doses up to nearest half unit for children under 5 years of age and nearest whole unit for children over 5 years of age.

To prescribe on Lorenzo:

Step 1: Search for one of 'Insulin, Diabetes, Paediatric Diabetes, Established' and tick 'Search order sets'

Step 2: Select Insulin for type 1 diabetes for established patients

Step 3: Tick ONE of the following

Insulin Degludec - Tresiba penfill 100 units/ml **OR**

Insulin Detemir - Levemir penfill 100 units/ml **OR**

Insulin Glargine - Lantus cartridge 100 units/ml

Step 4: Prescribe dose

Step 5: Press OK and acknowledge reason for prescription

Step 6: Double check prescription and press FINISH NOW

3. To prescribe discharge medication for newly diagnosed patient with type 1 diabetes

Step 1: Search for one of 'Insulin, Diabetes, Paediatric Diabetes, Newly Diagnosed,' and tick 'Search order sets'

Step 2: Select either

Newly diagnosed diabetes under 1 year old

OR newly diagnosed 1 year and over

Step 3: Select 'Diabetic starter kit'.

Step 4: Press OK

Step 5: Double check prescription and press FINISH NOW

1. References (including any links to NICE Guidance etc.)

2. Documentation Controls

Development of Guideline:	Dr J Smith W Barber- Lead Children's Diabetes Dietitian (SP)
Guideline Updated 2022:	Dr K Kumar
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Review Date:	May 2024 - Extended to September 2024
Key Contact:	Dr J Smith , Dr Kumar

APPENDIX 1: Screenshots to aid prescribing Novorapid Set Dose and Long Acting Insulin

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Inpatient Encounter - Start date: 12-May-2022 - GENERAL MEDICINE - DUMMY Care Provider - Open

Search insulin

Search drug catalogue

Search order sets Begins with Any word

Create multiple component item

- Insulin for type 1 Diabetes for established patients
- Insulin for type 1 Diabetes newly diagnosed 1 year old and over
- Insulin for type 1 Diabetes newly diagnosed under 1 year old
- (Insulin) Hyperkalaemia Standard Regimen

Tick "Search order sets". Search for one of the following; insulin, diabetes, paediatric, newly diagnosed.

Choose appropriate order set by age of patient.

Other links Links Observations/Results Reconcile

Add to favourites Medication administration Re-prescribe

Finish now Next Cancel

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Insulin for type 1 Diabetes newly diagnosed 1 year old and over - contents

Please ensure that you read the guidelines as this will facilitate the correct prescription. Children with newly diagnosed diabetes are not usually prescribed a correction dose in the first day unless advised by a member of the diabetes team. Click the links below for guidelines.

Please select one or more items in the set

Prescription item	Other information	Order sentence description	Time adjust
Diabetic Starter Kit - as per protocol - as needed insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NVO] - Strength 100 units/ml - DOSE stepped/variable - subcutaneous injection		Starter Kit	
insulin degludec - TRESIBA PENFILL - Strength 100 units/ml - injection - DOSE unit - subcutaneous injection - every day at 6pm		Basal Insulin	22/08/2022 14:16 0 Day(s)
NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NVO] - Strength 100 units/ml - DOSE stepped/variable - subcutaneous injection		Correction Dose	22/08/2022 14:16 0 Day(s)

Tick Novorapid Penfill Meal Set Dose and Basal Insulin

Press OK

Other links Links Observations/Results Reconcile

Add to favourites Medication administration Re-prescribe

Finish now Next Cancel

1) Check frequency is TDS – 8am, 12pm, 5pm

2) Tick changing dose

3) Click blue “Changing dose”

Frequency	Duration	Administration times	Variable dose instructions
THREE times a DAY at 8am 12pm 5pm		Fixed - 08:00/12:00/17:00	8am Immediately before Breakfast 12pm Immediately before Lunch 5pm Immediately before Tea
<input checked="" type="checkbox"/> Changing dose			

4) ‘Changing dose mezzanine screen will appear. Enter doses for each mealtime in Dose boxes

5) Press OK

Time(s)	Dose
08:00	unit
12:00	unit
17:00	unit

If you are asked if you wish to update the entered details press “yes”.

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Create/Amend inpatient prescription

LORENZO-Webpage Dialog

Insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO]

Prescribing considerations
DRC dose type: System defined

Basic details | Technically validate | Conflicts | Record administration | Dose range check

Dose: [] UON unit

Frequency: []

Duration: []

Changing dose: []

Variable dose instructions: []

Slot times for administration: []

Use fixed time(s) | Use drug round time(s)

Scheduled | Drug round

No records to show

6) Press UPDATE

Dose	Frequency	Duration	Administration times	Variable dose instructions
Changing dose	THREE times a DAY at 8am 12pm 5pm		Fixed - 08:00/12:00/17:00	8am Immediately before Breakfast 12pm Immediately before Lunch 5pm Immediately before Tea

Additional options

The first dose scheduled at 08:00 is due now. Do you wish to record administration of this dose now? Yes

The first scheduled administration will be at 09-Aug-2022 08:00 which is 14 minute(s) from now. Do you wish to prescribe an additional STAT dose? Yes

7) Press OK

You may receive a dose range check warning. Select an acknowledgement reason if so.

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Create/Amend inpatient prescription

LORENZO-Webpage Dialog

insulin degludec - TRESIBA PENFILL

Prescribing considerations
DRC dose type: System defined

Basal insulin selection will appear

Enter dose

Administration time should be 6pm

Press OK

Basic details | Technically validate | Conflicts | Record administration | Dose range check

Route: Subcutaneous Injection

Dosage form: injection

Dose type: Normal

Strength: 100 units/ml

Site: []

Frequency: every DAY at 6pm

As required (PRN): []

PRN instructions: []

Administration details

Slot times for administration: Use fixed time(s) Use drug round time(s)

Administration times

Scheduled | Drug round

Start date time: 22-Aug-2022 14:29

Review after (Period): []

Duration: []

Quantity: []

Stop date time: [] 00:00

On admission: []

Stationery type: For Administration (RTG)

Administration instructions: []

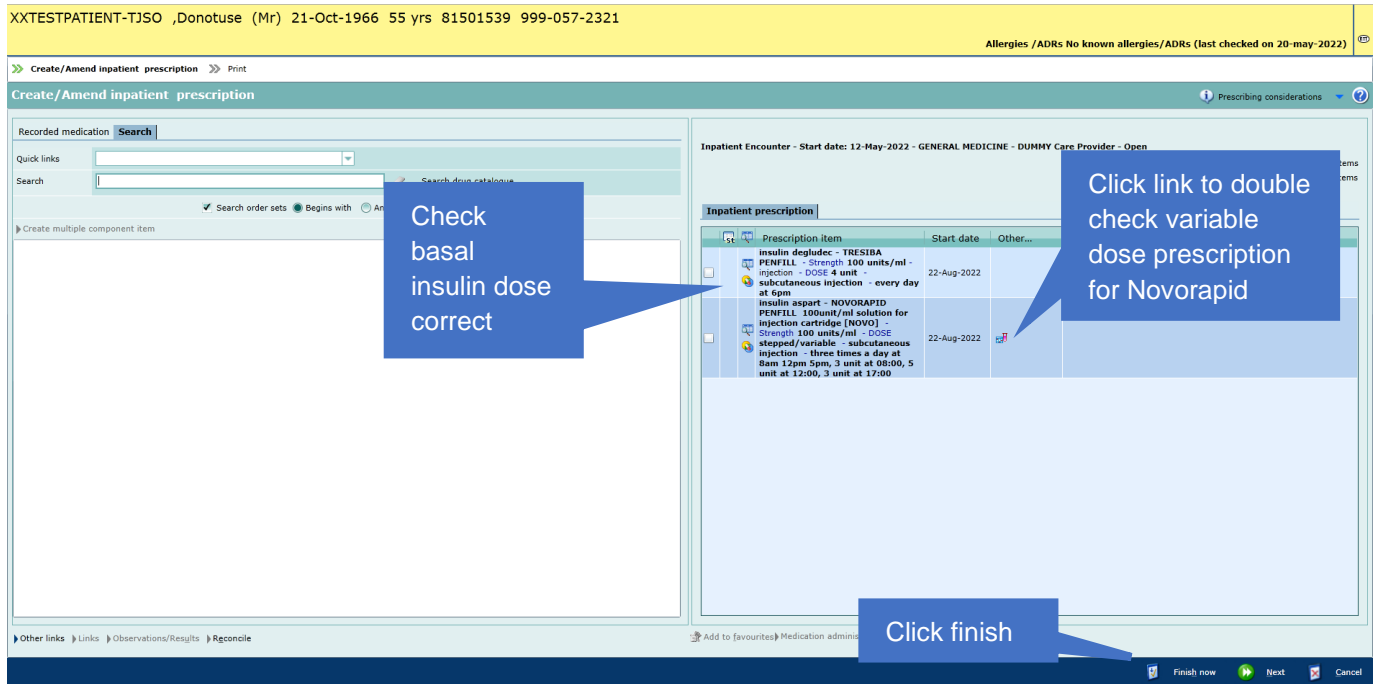
Problem/Indication: Insulin-dependent diabetes mellitus

Additional comments: []

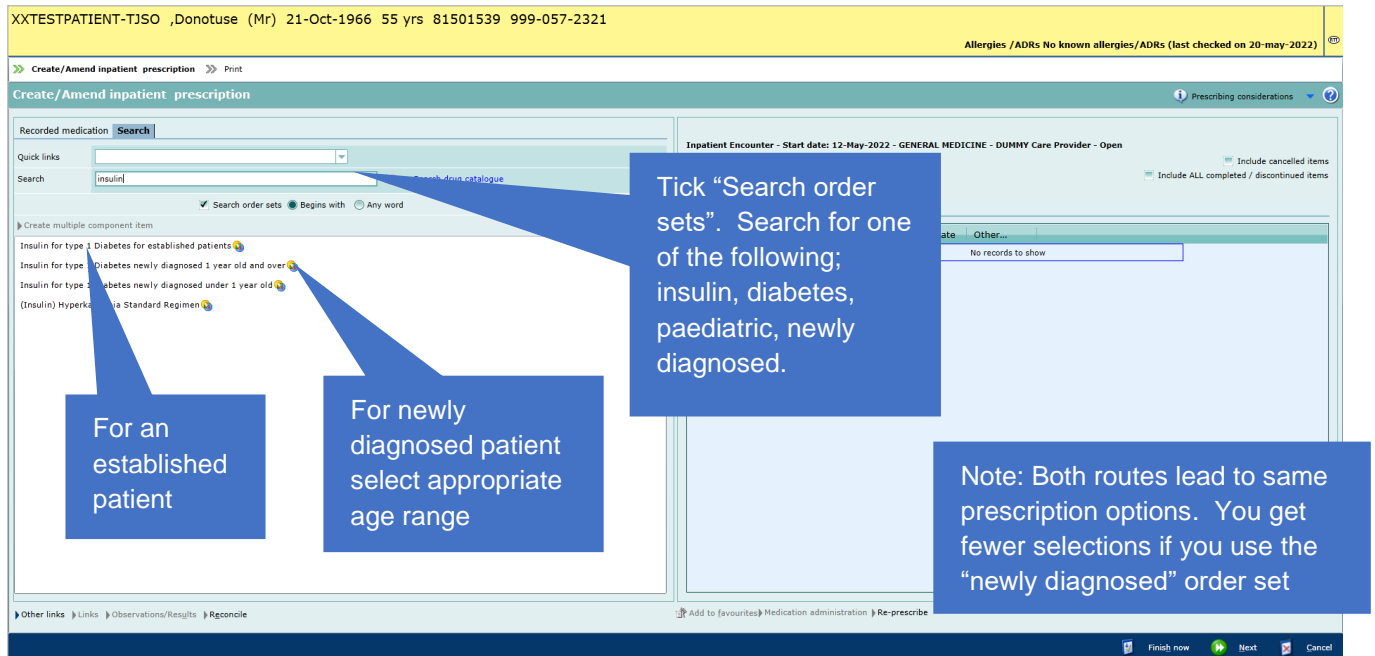
Additional options

The first scheduled administration will be at 22-Aug-2022 18:00 which is 3 hour(s), 31 minute(s) from now. Do you wish to prescribe an additional STAT dose? Yes

Press OK



Appendix 2: Screenshots to aid prescribing Novorapid:correction dose with meals



XXTESTPATIENT-TJ50 ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search insulin

Search order sets

Insulin for type 1 Diabetes newly diagnosed 1 year old and over - contents

Please ensure that you read the guidelines as this will facilitate the correct prescription. Children with newly diagnosed diabetes are not usually prescribed a correction dose in the first day unless advised by a member of the diabetes team. Click the links below for guidelines.

Please select one or more items in the set

Prescription item	Other information	Order sentence description	Time adjust	Start date/time	Off
Diabetic Starter Kit - as per protocol - as needed insulin aspart		Starter Kit		22/08/2022 14:34	0 Day(s)
NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] - Strength 100 units/ml DOSE stepped/variable subcutaneous injection		Meal Set Dose		22/08/2022 14:34	0 Day(s)
insulin degludec - TRESIBA PENFILL Strength 100 units/ml injection - DOSE unit - subcutaneous injection every day at 6pm		Basal Insulin		22/08/2022 14:34	0 Day(s)
NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] - Strength 100 units/ml DOSE stepped/variable subcutaneous injection		Correction Dose		22/08/2022 14:34	0 Day(s)

Links

Press OK

Select Novorapid Penfill – Correction Dose

Fiasp is another fast acting insulin used for corrections. Double check which fast-acting insulin the patient uses. Fiasp is lower down in the 'established patient' list

XXTESTPATIENT-TJ50 ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search insulin

Search order sets

Insulin for type 1 Diabetes newly diagnosed 1 year old and over

Insulin for type 1 Diabetes newly diagnosed under 1 year old

(Insulin) Hyperkalaemia Standard Regimen

LORENZO-Webpage Dialog

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO]

Prescribing considerations DRG dose type: System defined

Care Provider - Open

Include cancelled items

Include ALL completed / discontinued items

Basic details Technically validate Conflicts Record administration Dose range check

Start date time 22-Aug-2022 14:34 Stop date time

Dose [] UOH unit Slot times for administration Use fixed time(s) Use drug round time(s)

Frequency [] Administration times

Duration [] Changing dose instructions

Changing dose

Dose	Frequency	Duration	Administration times	Variable dose instructions
Changing dose	THREE times a DAY at 8am 12pm 5pm		Fixed - 08:00/12:00/17:00	1unit of NOVORAPID is expected to reduce the blood glucose by Y mmols/l (INSERT Y mmols). Aiming for a blood glucose of 6 mmols/l.

Additional options

The first scheduled administration will be at 22-Aug-2022 17:00 which is 2 hour(s), 25 minute(s) from now. Do you wish to prescribe an additional START dose? Yes

Full prescription view

Links Observations/Results Remove item

1) Tick changing dose

2) Click blue changing dose link

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allegries / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search insulin

▼ Search order sets Begin

Create multiple component item

Insulin for type 1 Diabetes for established patients

Insulin for type 1 Diabetes newly diagnosed 1 year old

Insulin for type 1 Diabetes newly diagnosed under 1 year old

(Insulin) Hyperkalaemia Standard Regimen

LORENZO-Webpage Dialog

Insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge (NOVO)

Prescribing considerations

DRC dose type: System defined

Care Provider - Open

Include cancelled items

Include ALL completed / discontinued items

Basic details Technically validate Conflicts Record administration Dose range check

Start date time 22-Aug-2022 14:34 Stop date time

Changing dose mezzanine

Changing dose

Time(s)	Dose
12:00	unit
17:00	unit

Update Remove

Variable dose instructions

Unit of NOVORAPID is expected to reduce the blood glucose by Y mmola/ (INSERT Y mmola). Aiming for a blood glucose of 6 mmola/.

Additional options

The first scheduled administration will be at 22-Aug-2022 17:00 which is 2 hour(s), 25 minute(s) from now. Do you wish to prescribe an additional STAT dose?

Full prescription view

Links Observations/Results Remove item

Other links Links Observations/Results Reconcile

Add to favourites Medication administration Re-prescribe

Finish now Next Cancel

3) 'Changing dose mezzanine' screen will appear. Do not enter any doses. Press OK

4) Click OK

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allegries / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

▼ Search order sets Begin

Create multiple component item

Insulin for type 1 Diabetes for established patients

Insulin for type 1 Diabetes newly diagnosed 1 year old

Insulin for type 1 Diabetes newly diagnosed under 1 year old

(Insulin) Hyperkalaemia Standard Regimen

LORENZO-Webpage Dialog

Insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge (NOVO)

Prescribing considerations

DRC dose type: System defined

Care Provider - Open

Include cancelled items

Include ALL completed / discontinued items

Basic details Technically validate Conflicts Record administration Dose range check

Start date time 22-Aug-2022 14:34 Stop date time

Frequency THREE times a DAY at 8am 12pm 5pm

Duration

Changing dose

Variable dose instructions

Unit of NOVORAPID is expected to reduce the blood glucose by 2 mmola/ (2 mmola). Aiming for a blood glucose of 6 mmola/.

Administration times

Scheduled	Drug round
08:00	
12:00	
17:00	

Add Update Remove

Dose Frequency Duration Administration times Variable dose instructions

Dose	Frequency	Duration	Administration times	Variable dose instructions
THREE times a DAY at 8am 12pm 5pm			Fixed - 08:00/12:00/17:00	Unit of NOVORAPID is expected to reduce the blood glucose by Y mmola/ (INSERT Y mmola). Aiming for a blood glucose of 6 mmola/.
Changing dose				

Additional options

The first scheduled administration will be at 22-Aug-2022 17:00 which is 2 hour(s), 25 minute(s) from now. Do you wish to prescribe an additional STAT dose?

Full prescription view

Links Observations/Results Remove item

Other links Links Observations/Results Reconcile

Add to favourites Medication administration Re-prescribe

Finish now Next Cancel

5) Enter dose range

4) Amend the 'variable dose instruction Y'. (Delete text in brackets).

6) Press UPDATE

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search insulin

Change order sets Begin

Create multiple component item

Insulin for type 1 Diabetes established patients

Insulin for type 1 Diabetes newly diagnosed 1 year old and over

Insulin for type 1 Diabetes newly diagnosed under 1 year old

(Insulin) Hyperkalaemia Standard Regimen

LORENZO-Webpage Dialog

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO]

Prescribing considerations DRC dose type: System defined

Care Provider - Open

Include cancelled items

Include ALL completed / discontinued items

Basic details Technically validate Conflicts Record administration Dose range check

Start date time 22-Aug-2022 14:34 Stop date time

Dose 3 - 5 UON unit

Frequency THREE times a DAY at 8am 12pm 5pm

Duration

Changing dose

Variable dose instructions Unit of NOVORAPID is expected to reduce the blood glucose by 2 mmols/l (2 mmols/l).

Changing dose mezzanine

Changing dose

Time(s)	Dose
08:00	3 unit
12:00	3 unit
17:00	3 unit

Variable dose instructions Unit of NOVORAPID is expected to reduce the blood glucose by 1 mmols/l (INSERT 1 mmols), aiming for a blood glucose of 6 mmols/l.

Additional options The first scheduled administration will be at 22-Aug-2022 17:00 which is 2 hour(s), 25 minute(s) from now. Do you wish to prescribe an additional STAT dose? Yes

Links Observations/Results Remove item

Other links Links Observations/Results Reconcile

Add to favourites Medication administration Re-prescribe

Finish now Next Cancel

Changing dose mezzanine screen will appear again. This displays the minimum dose entered. Press OK.

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search insulin

Change order sets Begin

Create multiple component item

Insulin for type 1 Diabetes established patients

Insulin for type 1 Diabetes newly diagnosed 1 year old and over

Insulin for type 1 Diabetes newly diagnosed under 1 year old

(Insulin) Hyperkalaemia Standard Regimen

LORENZO-Webpage Dialog

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO]

Prescribing considerations DRC dose type: System defined

Care Provider - Open

Include cancelled items

Include ALL completed / discontinued items

Basic details Technically validate Conflicts Record administration Dose range check

Start date time 22-Aug-2022 14:34 Stop date time

Dose 3 - 5 UON unit

Frequency THREE times a DAY at 8am 12pm 5pm

Duration

Changing dose

Variable dose instructions Unit of NOVORAPID is expected to reduce the blood glucose by 2 mmols/l (2 mmols/l).

Administration times Fixed - 08:00/12:00/17:00

Variable dose instructions Unit of NOVORAPID is expected to reduce the blood glucose by 2 mmols/l (2 mmols/l). Aiming for a blood glucose of 6 mmols/l.

Additional options The first scheduled administration will be at 22-Aug-2022 17:00 which is 2 hour(s), 25 minute(s) from now. Do you wish to prescribe an additional STAT dose? Yes

Links Observations/Results Remove item

Other links Links Observations/Results Reconcile

Add to favourites Medication administration Re-prescribe

Finish now Next Cancel

2) Check the frequency is TDS – 8am, 12pm, 5pm

1) Ensure dose range is here

3) Check the correction ratio has been saved in the 'variable dose instructions'

Press OK

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies / ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search insulin

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO]

Basic details | Technically validate | **Conflicts** | Record administration | Dose range check

Type	Details	Prescriber acknowledgement...	Acknowledged
Drug duplication - Doubling	The patient is already receiving an equivalent product in their existing medication, insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] Prescribed on: 22-Aug-2022 15:01:53	Select reason*	<input type="checkbox"/>

There may be "conflicts" generated. Review the warnings and select an appropriate acknowledgement reason.

Links Observations/Results Remove item

Other links Links Observations/Results Reconcile

Add to favourites Medication administration Re-prescribe

Finish now Next Cancel

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies / ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search

insulin degludec - TRESIBA PENFILL - Strength 100 units/ml - injection - DOSE 3 unit - subcutaneous injection - every day at 6pm

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] - Strength 100 units/ml - DOSE stepped/variable - subcutaneous injection - three times a day at 8am 12pm 5pm, 3 - 5 unit at 08:00, 3 - 5 unit at 12:00, 3 - 5 unit at 17:00

Check prescription is correct

Click link to double check variable dose prescription for Novorapid

Click finish

Other links Links Observations/Results Reconcile

Add to favourites Medication administration

Finish now Next Cancel

Appendix3: Screenshots to aid prescribing Novorapid for meals: dose to be calculated using carbohydrate counting

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search insulin Search drug catalogue

Search order sets Begins with Any word

Create multiple component item

Insulin for type 1 Diabetes for established patients

Insulin for type 1 Diabetes newly diagnosed 1 year old and over

Insulin for type 1 Diabetes newly diagnosed under 1 year old

(Insulin) Hyperkalaemia Standard Regimen

Inpatient Encounter - Start date: 12-May-2022 - GENERAL MEDICINE - DUMMY Care Provider - Open

Include cancelled items

Include ALL completed / discontinued items

Other... No records to show

Tick "Search order sets". Search for one of the following; insulin, diabetes, paediatric, established.

Select Insulin for Type 1 Diabetes for established patients

Other links Links Observations/Results Reconcile

Add to favourites Medication administration Re-prescribe

Finish now Next Cancel

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Insulin for type 1 Diabetes for established patients - contents

Please ensure that you ask the child, young person or carer which devices they usually use at home prior to issuing the prescription and continue with the same device unless advised differently by the diabetes team. Click the links below for guideline.

Please select one or more items in the set

Set date and time 22/08/2022 14:46

Prescription item	Other information	Order sentence description	Time adjust	Start date/time	Offset
<input type="checkbox"/> Insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] - Strength 100 units/ml - DOSE stepped/variable - subcutaneous injection		Carbohydrate Counting		22/08/2022 14:46	0 Day(s)
<input type="checkbox"/> Insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] - Strength 100 units/ml - DOSE stepped/variable - subcutaneous injection		Correction Dose		22/08/2022 14:46	0 Day(s)
<input type="checkbox"/> Insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] - Strength 100 units/ml - DOSE stepped/variable - subcutaneous injection		Meal Set Dose		22/08/2022 14:46	0 Day(s)
<input type="checkbox"/> Insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] - Strength 100 units/ml - DOSE unit - subcutaneous injection		STAT Dose		22/08/2022 14:46	0 Day(s)
<input type="checkbox"/> Insulin detemir - LEVEMIR PENFILL 100unit/ml injection solution [NOVO] - Strength 100 units/ml - DOSE unit - subcutaneous injection - every day at 6pm		Basal Insulin - Select ONE only		22/08/2022 14:46	0 Day(s)
<input type="checkbox"/> Insulin glargine - LANTUS CARTRIDGE 100unit/ml injection solution [AVANTIS] - Strength 100 units/ml - DOSE unit - subcutaneous injection - every day at 6pm		Basal Insulin - Select ONE only		22/08/2022 14:46	0 Day(s)

Other links Links Observations/Results Reconcile

Add to favourites Medication administration Re-prescribe

Press OK

Select NOVORAPID PENFILL - Carbohydrate Counting

Fiasp is another fast acting insulin used for corrections. Double check which fast-acting insulin the patient uses. Fiasp is lower down in the 'established patient' list

Next Cancel

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allegries / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO]

Basic details Technically validate Conflicts Record administration Dose range check

Start date time 22-Aug-2022 14:46 Stop date time

Dose [] UOM [] Slot times for administration

Frequency THREE times a DAY at 8am 12pm 5pm

Duration []

Changing dose

Variable dose instructions Calculate by carbohydrate count: 15 minutes before breakfast 1unit of Novorapid per X grams of

Administration times

Scheduled Drug round

08:00

12:00

17:00

Use fixed time(s) Use drug round time(s)

Variable dose instructions

Calculate by carbohydrate count: 15 minutes before breakfast 1unit of Novorapid per X grams of carbohydrate. 15 minutes before lunch 1unit of Novorapid per Y grams of carbohydrate. 15 minutes before tea 1unit of Novorapid per Z grams of carbohydrate.

Additional options

The first scheduled administration will be at 22-Aug-2022 17:00 which is 2 hour(s), 13 minute(s) from now. Do you wish to prescribe an additional STAT dose?

Full prescription view

Links Observations/Results Remove item

3) Insert dose range

4) Select 'Unit'

2) Amend the variable dose instructions X, Y and Z. You might need to delete a word in the text box to enter the ratio's. We suggest delete 'by'.

1) Tick this box

5) Press UPDATE – this will launch a 'Changing dose mezzanine screen' or you might get a safety alert first – just press yes if so

Finish now Next Cancel

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allegries / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search insulin

Create multiple component item

Insulin for type 1 Diabetes for established patients

Insulin for type 1 Diabetes newly diagnosed 1 year old and over

Insulin for type 1 Diabetes newly diagnosed under 1 year old

(Insulin) Hyperkalaemia Standard Regimen

LORENZO-Webpage Dialog

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO]

Basic details Technically validate Conflicts Record administration Dose range check

Start date time 22-Aug-2022 14:46 Stop date time

Dose 0.5 10

Frequency THREE times a DAY at 8am 12pm 5pm

Duration []

Changing dose

Variable dose instructions Calculate carbohydrate count: 15 minutes before breakfast 1unit of Novorapid per

Administration times

08:00 0.5 unit

12:00 0.5 unit

17:00 0.5 unit

Variable dose instructions

Calculate by carbohydrate count: 15 minutes before breakfast 1unit of Novorapid per X grams of carbohydrate. 15 minutes before lunch 1unit of Novorapid per Y grams of carbohydrate. 15 minutes before

Additional options

The first scheduled administration will be at 22-Aug-2022 17:00 which is 2 hour(s), 13 minute(s) from now. Do you wish to prescribe an additional STAT dose?

Full prescription view

Links Observations/Results Remove item

Changing dose mezzanine screen will appear. This displays the minimum dose entered.

Press OK

Other links Links Observations/Results Reconcile

Finish now Next Cancel

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search insulin

Search order sets Begins with Any word

Create multiple component item

Insulin for type 1 Diabetes for established patients

Insulin for type 1 Diabetes newly diagnosed for 5 years old and above

Insulin for type 1 Diabetes newly diagnosed under 5 years old

(Insulin) Hyperkalaemia Standard Regimen

LORENZO-Webpage Dialog

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO]

Prescribing considerations DRC dose type: System defined

Care Provider - Open

Include cancelled items

Include ALL completed / discontinued items

Basic details Technically validate Conflicts Record administration Dose range check

Start date time 09-Aug-2022 08:05 Stop date time

Dose UOM unit Slot times for administration

Frequency

Duration

Variable dose instructions

3) Check the ratio has been saved in the 'variable dose instructions'

2) Check the frequency is TDS - 8am, 12pm, 5pm

1) Ensure dose range is here

Scheduled Drug round

No records to show

Administration times

Use fixed time(s) Use drug round time(s)

Variable dose instructions

Calculate by carbohydrate count: 15 minutes before breakfast 1 unit of Novorapid per X grams of carbohydrate. 15 minutes before lunch 1 unit of Novorapid per Y grams of carbohydrate. 15 minutes before tea 1 unit of Novorapid per Z grams of carbohydrate.

Additional options

The first scheduled administration will be at 09-Aug-2022 12:00 which is 3 hour(s), 54 minute(s) from now. Do you wish to prescribe an additional STAT dose? Yes

Full prescription view

Links Observations/Results Remove item

Ok Cancel

Press OK

Finish now Next Cancel

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321

Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription

Recorded medication Search

Quick links

Search Search drug catalogue

Search order sets Begins with Any word

Create multiple component item

Inpatient Encounter - Start date: 12-May-2022 - GENERAL MEDICINE - DUMMY Care Provider - Open

Include cancelled items

Include ALL completed / discontinued items

Inpatient prescription

Prescription item Start date Other...

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] - Strength 100 units/ml - DOSE stopped/variable - subcutaneous injection - three times a day at 8am 12pm 5pm, 0.5 - 10 unit at 08:00, 0.5 - 10 unit at 12:00, 0.5 - 10 unit at 17:00

22-Aug-2022

Check the prescription. You can double check correct carbohydrate ratios have been set by clicking here

Other links Links Observations/Results Reconcile

Add to favourites Medication administration Re-prescribe

Finish now Next Cancel

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321 Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Create/Amend inpatient prescription Prescribing considerations

Recorded medication

Quick links

Search

Search order sets Begins

Create multiple component item

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] BY Care Provider - Open

From: 22-Aug-2022 14:46 To:

Dose	Frequency	Duration	Administration times	Variable dose instructions
0.5 - 10 unit	THREE times a DAY at 8am 12pm 5pm		Fixed - 08:00/12:00/17:00	Calculate carbohydrate count: 15 minutes before breakfast 1unit of Novorapid per X grams of carbohydrate. 15 minutes before lunch 1unit of Novorapid per Y grams of carbohydrate. 15 minutes before tea 1unit of Novorapid per Z grams of carbohydrate.

Scheduled doses chart

Time(s)	22-Aug-2022	23-Aug-2022	24-Aug-2022
08:00		0.5 - 10 unit	0.5 - 10 unit
12:00		0.5 - 10 unit	0.5 - 10 unit
17:00	0.5 - 10 unit	0.5 - 10 unit	0.5 - 10 unit

Page 1 of 1

*The last step has no duration and this is an ongoing prescription. The view will expire in 3 days

[Close](#)

Other links [Links](#) [Observations/Results](#) [Reconcile](#) [Add to favourites](#) [Remove](#) [Medication administration](#) [Re-prescribe](#)

[Finish now](#) [Next](#) [Cancel](#)

Appendix 4: How Do I know Which Item is Which

XXTESTPATIENT-TJSO ,Donotuse (Mr) 21-Oct-1966 55 yrs 81501539 999-057-2321 Allergies / ADRs No known allergies/ADRs (last checked on 20-may-2022)

Medication administration chart

Chart status: Active Weight: Not recorded Height: Not recorded BSA: Not recorded

Prescription item	20-Aug-2022	21-Aug-2022	22-Aug-2022	23-Aug-2022
insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] DOSE Stepped/Variable STRENGTH 100 units/ml ROUTE Subcutaneous Injection Please click the Variable Dose icon (blue and pink) to review further detail for the dose Start date time : 22-Aug-2022 14:46 Prescribed by : Elliott Test Matt	08:00			08:00
			0.5 - 10 unit	12:00
insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] DOSE Stepped/Variable STRENGTH 100 units/ml ROUTE Subcutaneous Injection Correction Dose Start date time : 22-Aug-2022 15:01 Prescribed by : Elliott Test Matt	17:00		0.5 - 10 unit	17:00
			0.5 - 10 unit	08:00
			5 unit	12:00
			3 unit	17:00
			5 unit	5 unit

Click here BEFORE clicking on an administration slot

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] - LORENZO -- Webpage Dialog

From: 22-Aug-2022 14:46 To:

Dose	Frequency	Duration	Administration times	Variable dose instructions
0.5 - 10 unit	THREE times a DAY at 8am 12pm 5pm		Fixed - 08:00/12:00/17:00	Calculate carbohydrate count: 15 minutes before breakfast 1unit of Novorapid per X grams of carbohydrate. 15 minutes before lunch 1unit of Novorapid per Y grams of carbohydrate. 15 minutes before tea 1unit of Novorapid per Z grams of carbohydrate.

Note detail here

Scheduled doses chart

Time(s)	22-Aug-2022	23-Aug-2022
08:00		0.5 - 10 unit
12:00		0.5 - 10 unit
17:00	0.5 - 10 unit	0.5 - 10 unit

*The last step has no duration a

insulin aspart - NOVORAPID PENFILL 100unit/ml solution for injection cartridge [NOVO] - LORENZO -- Webpage Dialog

From: 22-Aug-2022 15:01 To:

Dose	Frequency	Duration	Administration times	Variable dose instructions
Changing dose	THREE times a DAY at 8am 12pm 5pm		Fixed - 08:00/12:00/17:00	1unit of NOVORAPID is expected to reduce the blood glucose by Y mmols/l (INSERT Y mmols). Aiming for a blood glucose of 6 mmols/l.

Scheduled doses chart

Time(s)	22-Aug-2022	23-Aug-2022	24-Aug-2022
08:00		5 unit	5 unit
12:00		3 unit	3 unit
17:00	5 unit	5 unit	5 unit

*The last step has no duration and this is an ongoing prescription. The view will show up to a maximum of 3 days

Click close & administer as normal

