

**User Guide to *National Insulin  
Subcutaneous Order and Blood  
Glucose Record: Adult***

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This document is available on the Commission web site at [www.safetyandquality.gov.au](http://www.safetyandquality.gov.au)

## Table of contents

	Section	Page
1.	<b>Purpose</b>	<b>4</b>
2.	<b>General instructions</b>	<b>4</b>
3.	<b>Identification and demographics</b>	<b>5</b>
	3.1 Patient identification	5
	3.2 Hospital demographics	5
	3.3 Cross reference with National Inpatient Medication Chart (NIMC)	5
4.	<b>Monitoring / notification instructions</b>	<b>6</b>
	4.1 BGL frequency	6
	4.2 Medical Officer to notify / special instructions	7
	4.3 Diabetes treatment prior to admission	7
5.	<b>Monitoring record (for blood glucose levels)</b>	<b>7</b>
	5.1 Blood Glucose Monitoring	7
6.	<b>Insulin orders (prescribing)</b>	<b>9</b>
	6.1 Routine insulin orders	9
	6.2 Supplemental insulin orders	11
	6.3 Stat / phone orders	13
	6.3.1 Stat orders	13
	6.3.2 Phone orders	13
	6.4 Administration record	13
7.	<b>Documentation of insulin administration</b>	<b>14</b>
	7.1 Administration of a routine insulin dose	14
	7.2 Administration of a supplemental insulin dose	15
	7.3 Documenting phone orders and administration of phone orders	15
	7.4 Documenting administration of stat orders	15
	7.5 Examples	16
	7.5.1 Routine insulin	16
	7.5.2 Supplemental insulin	17
	7.5.3 Phone orders	18
8.	<b>Comments section</b>	<b>19</b>
9.	<b>Guidelines for Managing Hyperglycaemia Alerts</b>	<b>19</b>
10.	<b>Hypoglycaemia Management in Diabetes: Adult</b>	<b>21</b>
	10.1 Hypoglycaemia Management in Diabetes: BGL less than 4mmol/L	21
	10.2 Diabetes treatment review following treated hyperglycaemia	23
11.	<b>Pharmacy review</b>	<b>23</b>

# User Guide to *National Insulin Subcutaneous Order and Blood Glucose Record: Adult*

**Exceptions:** This form is NOT intended to be used for children

## 1. Purpose

The purpose of this user guide is to explain how clinicians should use the *Insulin Subcutaneous Order and Blood Glucose Record: Adult* to take full advantage of its safety features.

The safety features of the form promote consistent documentation to assist with accurate interpretation of subcutaneous insulin orders. The form is intended to reflect best practice. The specific sections of the form assist clinicians to safely prescribe and administer insulin, and to monitor blood glucose levels (BGLs). The Institute for Safe Medication Practices (ISMP) considers insulin a high risk medication.

Standardising the communication of medication information between doctors, nurses and pharmacists working in hospitals aims to reduce harm to patients from medication errors. This has been proven by the introduction of the National Inpatient Medication Chart (NIMC).

Standardisation, in addition to reducing patient harm, allows for a collaborative approach to the training of medical, nursing and pharmacy staff in the use of a common form. Linking all the information required to manage inpatient diabetes requirements is expected to enable clinical staff to more effectively manage patient treatment. For patients who are not treated with insulin, the form is used for BGL monitoring.

The following are general requirements regarding use of the *Insulin Subcutaneous Order and Blood Glucose Record: Adult*.

- All authorised prescribers must order medicines for inpatients in accordance with legislative requirements according to the relevant state and territory drugs and poisons legislation.
- Orders should be reviewed daily and when notifications of out-of-range BGLs occur ensuring appropriate diabetes management and dosing of insulin.
- The form is to be utilised for all inpatients requiring subcutaneous insulin and/or BGL monitoring unless ward/unit procedures state otherwise.
- A different insulin chart is required for the prescribing, administration and monitoring of intravenous insulin.

## 2. General instructions

- All entries are to be written legibly in ink. No matter how accurate or complete an order, it may be misinterpreted if it cannot be read clearly.
- Water soluble ink (e.g. fountain pen) should not be used.
- Black ink is preferred.
- A medication order is valid only if the authorised prescriber enters all the required items.
- All information should be printed.
- No erasers or “whiteout” should be used.
- The form allows orders to be updated daily for 5 days, after which time the order must be rewritten on a new form. The patient’s current hospital and ward location should be clearly marked on the *Insulin Subcutaneous Order and Blood Glucose Record – Adult*. See Section 3.2.

### 3. Identification and demographics

#### 3.1 Patient identification

Patient identification (ID) on the *Insulin Subcutaneous Order and Blood Glucose Record – Adult* is consistent with the identification required when using the National Inpatient Medication Chart (NIMC).

A watermark has been included in the *patient identification sections* on pages 1 and 2 as a reminder that a prescription is not valid unless the patient's identifiers are present. This can be done in one of 2 ways:

1. The current patient ID label placed on pages 1 and 2
2. As a minimum, written in legible print, the patient:
  - o UR number
  - o Name (family and given)
  - o Address
  - o Date of birth
  - o Gender (M = Male; F = Female; I = Indeterminate)

The first prescriber must print the patient's name under the label to verify that both the ID label and the insulin orders relate to the correct patient. This will reduce the risk of the wrong ID label being placed on the form which could lead to the wrong patient receiving insulin.

Insulin should not be administered if the prescriber has not completed the patient identification details. In these situations:

- o Contact the prescriber **urgently** as insulin should **not** be withheld.
- o If the original prescriber is not available, contact the doctor on-call.

<b>Tom Jones Hospital</b>		
<b>JOHNSON</b>		<b>223344</b>
IAN	M	27/04/1958
12 Nearby Street		
Somewhere Close 4444		
Ph(h) 07 1234 5678		
Ph(m) 0412 345 678		
MC:123456789	ID:3	Exp:12/2013
<b>First Prescriber to Print Patient Name and Check Label Correct:</b>		
Ian Johnson		

#### 3.2 Hospital demographics

Complete facility, ward / unit and year in this section (at the top right side of page 3).

<b>Insulin Subcutaneous Order and Blood Glucose Record - Adult</b>	Facility: <u>Your Hospital</u>
	Ward / Unit: <u>Your Ward</u> Year: 20 <u>12</u>

#### 3.3 Cross reference with National Inpatient Medication Chart (NIMC)

Tick the *BGL/Insulin* box on page 1 of the NIMC.

<b>MEDICATION CHART</b> <input type="checkbox"/> of <input type="checkbox"/>			
<b>ADDITIONAL CHARTS</b>			
<input type="checkbox"/> IV Fluid	<input checked="" type="checkbox"/> BGL / Insulin	<input type="checkbox"/> Acute Pain	<input type="checkbox"/> Clozapine
<input type="checkbox"/> Palliative Care	<input type="checkbox"/> Chemotherapy	<input type="checkbox"/> IV Heparin	<input type="checkbox"/> Other



## 4.2 Medical Officer to notify / special Instructions

The prescriber should document who to notify of any BGL that is out of range or other concerns regarding diabetes management. If the name space (on the left side of page 2) is left blank, the resident medical officer for the treating team will be notified. The doctor on-call will be notified after hours.

Clinicians may document any *Special Instructions* related to the patient's diabetes management in the space provided (on the left side of page 2).

Medical Officer to notify:	Dr. <u>Simmonds</u>	or Ward doctor
Special Instructions:	<u>Call Dr Simmonds for insulin doses and alerts</u>	

## 4.3 Diabetes treatment prior to admission

Clinicians should write the *Diabetes treatment prior to admission* in the space provided (in the bottom right hand corner of page 3). This may include oral hypoglycaemic agents and/or insulin names and doses. Optional additional information may include the insulin device that the patient uses.

<b>Diabetes treatment prior to admission</b>
<u>Nil insulin prior to admission. Metformin and gliclazide</u>

## 5. Monitoring record (for blood glucose levels)

### 5.1 Blood glucose monitoring

Generally, the BGL target range for most inpatients on general wards receiving subcutaneous insulin and/or oral treatments is 4-10mmol/L with up to 12mmol/L considered reasonable. In the *Monitoring Record* there are two rows that do not have any shading (4 -8mmol/L and 8.1 – 12mmol/L). If BGLs fall within this monitoring range, a doctor is not required to be notified unless requested in the *Special Instructions* or if there are specific concerns. Certain situations (e.g. pregnancy) require tighter control. The *Special Instructions* area can be used to define specific BGL targets and notifications.

A doctor must be notified when the BGL is:

- less than 4 mmol/L
- greater than 20 mmol/L
- the second consecutive BGL greater than 16 mmol/L
- the third consecutive BGL greater than 12 mmol/L.

To document a BGL:

- The date should be documented on the top of the current *Date* column.
- The nurse or prescriber should document the *Diet* the patient is to receive for the day (e.g. Nil By Mouth (NBM), Total Parenteral Nutrition (TPN), clear fluids, full diet). This prompts re-assessment of insulin requirements should the patient be fasting for a procedure or have altered dietary requirements.
- Document the time the BGL is measured in the *Time* space at the top of the BGL column.

Monitoring Record										
Date	10/7/12					11/7/12				
Change BGL to (tick all that apply)	<input type="checkbox"/> Standard	<input type="checkbox"/> 2hrs post-meal				<input type="checkbox"/> Standard	<input type="checkbox"/> 2hrs post-meal			
	<input type="checkbox"/> At 02:00am	<input type="checkbox"/> Other: .....				<input type="checkbox"/> At 02:00am	<input type="checkbox"/> Other: .....			
Diet	Full					Full				
Time	13	17	21			02	07	12	17	21
BGL (mmol/L) Write in corresponding range box	00	00	30			00	15	45	00	15

**Note:** The example above uses 24 hour time in the *Time* spaces

- Perform a BGL according to facility procedure.
- Write the BGL in the coloured row corresponding with the relevant range printed to the left and right of the *Monitoring Record*. Note any instructions in the **ALERTS** section that aligns with that range.

If the BGL is less than 4mmol/L, initiate hypoglycaemia management as per *Hypoglycaemia Management in Diabetes: BGL less than 4mmol/L* which is printed on page 4 and notify the treating prescriber or doctor on-call. Then:

- Tick the *Hypo Intervention* box after initiating hypoglycaemia treatment and ensuring patient safety.
- Perform follow up BGLs according to *Hypoglycaemia Management in Diabetes: BGL less than 4mmol/L* which is printed on page 4 and respond accordingly (see section 10).
- Document the hypoglycaemia treatment and response in the medical record.

If the BGL is in a high alert range (i.e. greater than 20mmol/L or the second consecutive BGL greater than 16mmol/L or the third consecutive BGL greater than 12mmol/L):

- Notify the treating prescriber or doctor on-call
- Perform a urine or blood ketone test, document the result in the *Ketones* box and notify the prescriber of any positive result. Tick the *Dr Notified* box.
  - If a urine ketone test is performed, the result is documented as 'neg' if no ketones are present or as a '+' or '++' etc. as indicated on the urine ketone test strip bottle.
  - If a blood ketone test is performed, the result is documented as a number (e.g. '0.6' or '1.4'). Also document the actions taken in the medical record.

Further information can be documented in the Comments section below and in the medical record.

Monitoring Record															
Date	10/7/12					11/7/12					12/7/12				
Change BGL to (tick all that apply)	<input type="checkbox"/> Standard	<input type="checkbox"/> 2hrs post-meal				<input type="checkbox"/> Standard	<input type="checkbox"/> 2hrs post-meal				<input type="checkbox"/> Standard	<input type="checkbox"/> 2hrs post-meal			
	<input type="checkbox"/> At 02:00am	<input type="checkbox"/> Other: .....				<input type="checkbox"/> At 02:00am	<input type="checkbox"/> Other: .....				<input type="checkbox"/> At 02:00am	<input type="checkbox"/> Other: .....			
Diet	Full					Full					Full				
Time	13	17	21			02	07	12	17	21	02	07	12	17	21
BGL (mmol/L) Write in corresponding range box	00	00	30			00	15	45	00	15	00	30	30	10	30
<b>ALERTS</b> Notify doctor immediately	Greater than 20	21.2													
Notify if 2 consecutive BGLs greater than 16	16.1–20														
Notify if 3 consecutive BGLs greater than 12	12.1–16		13.9				13.2	14.5				12.5		13.2	
	8.1–12	11.5				10.5	12				9.1	11.2			
	4–8								7.9					8	
Treat hypoglycaemia and notify doctor immediately	Less than 4														
Refer to Hypoglycaemia Management (page 4)	Ketones	neg													
Hypo intervention															
Doctor notified		✓													

## 6. Insulin orders (prescribing)

Insulin orders are divided into three sections: *Routine, Supplemental, and Stat / Phone Insulin Orders*. Patients may require any combination of these orders.

If no insulin is prescribed for a patient with diabetes, this form should be used for BGL monitoring as the alerts and notification prompts will also apply to patients not receiving insulin.

### 6.1 Routine insulin orders

There are six spaces to prescribe routine insulin in this section.

*Meal times* are pre-printed to ensure insulin is given immediately before a patient eats. All mealtime insulin doses including those with 15-30 minute delay in onset of action are to be given immediately before the patient eats, when their meal is in front of them.

**Rationale:** In the hospital setting, meal delivery times are variable and if delayed after insulin has been administered, hypoglycaemia may result.

#### Prescribing spaces

There are four prescribing spaces with the following *Meal / time* pre-printed:

- *Breakfast*
  - *Lunch*
  - *Dinner*
  - *Pre-Bed*
- Two prescribing spaces without the pre-printed *Meal / time*; one at the top and one at the bottom of the *Routine Insulin Orders* section. The additional prescribing spaces are to be used when a patient has an additional insulin injection prescribed at a single meal / time. For example, if a patient receives both their basal insulin and their mealtime insulin at breakfast.

Routine Insulin Orders		must be ordered for each day					
Contact doctor if expected dose not ordered.		Date:	10/7	11/7	12/7	13/7	14/7
Mealtime insulin is given at start of meal.							
Meal / time:	Name of insulin:		units	units	units	units	units
Prescriber Signature:	Print your name:		initials	initials	initials	initials	initials
<b>Breakfast</b>	Mealtime insulin name	X	8 units	8 units	8 units	8 units	
Prescriber Signature: <i>James Simmonds</i>	Print your name: <b>SIMMONDS</b>	X	<i>JS</i>	<i>JS</i>	<i>MG</i>	<i>MG</i>	
<b>Lunch</b>	Mealtime insulin name	X	8 units	8 units	9 units	9 units	phone
Prescriber Signature: <i>James Simmonds</i>	Print your name: <b>SIMMONDS</b>	X	<i>JS</i>	<i>JS</i>	<i>MG</i>		

In the prescribing space for the appropriate meal / time (e.g. *Breakfast*) write the full trade name of the insulin to be administered in the space marked *Name of insulin*. For premixed insulin specify the insulin type in full (e.g. 'Mixtard 30/70', 'Humalog Mix 25', 'NovoMix 30'). 'Mixtard' or 'Humalog Mix' are not complete orders.

**Rationale:** Trade names are preferred for insulin prescribing to avoid confusion as there are many look-alike / sound-alike generic insulin names which are not interchangeable. Additionally, wherever possible the patient should receive the brand of insulin they use or will be using at home.

The prescriber must sign each order and initial in the grey shaded row immediately below the insulin and dose prescribing space (where *initials* is watermarked). The prescriber must print their name in full at least once per form.

At the top of the first *Date* column in the *Routine Insulin Orders* section, write the date the dose is to be administered. Write the number of units ordered as a whole number only in the box relevant to the meal / time the insulin is to be administered, under the appropriate date column.

'Units' is pre-printed as a watermark. **Do not** write 'U' or 'IU' as these abbreviations can cause serious dose administration errors (e.g. if 5u is misread as 50 units).

Each dose is prescribed in a different space according to the meal or time it is to be administered. If the patient has been receiving insulin and no dose is ordered for the next meal or time, the nurse must call the treating prescriber or the doctor on-call for a phone order. The previous day's order is not a recurrent dose order.

In the event of a phone order being required, the nurse writes 'phone' in the appropriate insulin dose box of the *Routine Insulin Orders* section to indicate that a phone order has been taken. For additional instruction on phone orders, please see the instructions at Section 6.3 Stat / Phone Insulin Orders.

Insulin doses must be ordered for each day. When writing up daily doses, it is appropriate to prescribe doses for the rest of that day and for the first dose(s) of the following day. The prescriber may order insulin doses for several days when the BGLs have been acceptable and stable in the range of 4-12mmol/L.

The prescriber orders the insulin doses for subsequent days in the additional *Date* columns. The new dose supersedes those written for previous dates. A new form must be written by the prescriber after 5 days, or when there is no space to order doses or record BGLs.

Immediately after prescribing insulin, the prescriber should write the full trade name of the insulin to be administered in the row/s in the *Administration Record* section with the prompt *Name of routine insulin*. Trade names are preferred in insulin prescribing to avoid confusion as discussed in Section 6.1.

Example: *Routine Insulin Orders*

<b>Routine Insulin Orders</b>		must be ordered for each day					
Contact doctor if expected dose not ordered.		Date:	10/7	11/7	12/7	13/7	14/7
Mealtime insulin is given at start of meal.							
Meal / time:	Name of insulin:		units	units	units	units	units
Prescriber Signature:	Print your name:		initials	initials	initials	initials	initials
Meal / time:	Name of insulin:						
<b>Breakfast</b>	<b>Mealtime insulin name</b>		8	8	8	8	
Prescriber Signature: <i>James Simmonds</i>	Print your name: <i>SIMMONDS</i>		<i>JS</i>	<i>JS</i>	<i>MG</i>	<i>MG</i>	
Meal / time:	Name of insulin:						
<b>Lunch</b>	<b>Mealtime insulin name</b>		8	8	9	phone	
Prescriber Signature: <i>James Simmonds</i>	Print your name: <i>SIMMONDS</i>		<i>JS</i>	<i>JS</i>	<i>MG</i>		
Meal / time:	Name of insulin:						
<b>Dinner</b>	<b>Mealtime insulin name</b>		8	8	8	9	
Prescriber Signature: <i>James Simmonds</i>	Print your name: <i>SIMMONDS</i>		<i>JS</i>	<i>JS</i>	<i>MG</i>	<i>JS</i>	
Meal / time:	Name of insulin:						
<b>Pre-Bed</b>	<b>Basal insulin name</b>		24	24	28	28	
Prescriber Signature: <i>James Simmonds</i>	Print your name: <i>SIMMONDS</i>		<i>JS</i>	<i>JS</i>	<i>MG</i>	<i>JS</i>	
Meal / time:	Name of insulin:						
Prescriber Signature:	Print your name:		units	units	units	units	units
			initials	initials	initials	initials	initials

If routine insulin is ceased, the original order must not be obliterated. The prescriber must draw a clear line through the order, taking care that the line does not obliterate other orders. The prescriber must write the reason for changing the order (e.g. cease, change to insulin regimen) and document the date the order was changed, then initial. Note: the acronym 'D/C' (discontinued) should not be used for ceased orders since this can be confused with 'discharge'. Always use 'cease'.

When the insulin regimen is being changed (not a dose change, which can be facilitated on the chart) the prescriber must not overwrite the order. The original order must be ceased and a new order written on a new subcutaneous insulin form.

Example: Ceased Routine Insulin Orders

Routine Insulin Orders		must be ordered for each day					
Contact doctor if expected dose not ordered. Mealt ime insulin is given at start of meal.		Date:	10/7	11/7	12/7	13/7	14/7
Meal / time:	Name of insulin:		units	units	units	units	units
Prescriber Signature:	Print your name:		initials	initials	initials	initials	initials
Meal / time: <b>Breakfast</b>	Name of insulin: <b>Mealt ime insulin name</b>		8 units	8 units	8 units	8 units	8 units
Prescriber Signature: <i>James Simmonds</i>	Print your name: <b>SIMMONDS</b>		<i>JS</i>	<i>JS</i>	<i>MG</i>	<i>MG</i>	
Meal / time: <b>Lunch</b>	Name of insulin: <b>Mealt ime insulin name</b>		8 units	8 units	9 units	9 units	9 units
Prescriber Signature: <i>James Simmonds</i>	Print your name: <b>SIMMONDS</b>		<i>JS</i>	<i>JS</i>	<i>MG</i>	<i>MG</i>	
Meal / time: <b>Dinner</b>	Name of insulin: <b>Mealt ime insulin name</b>		8 units	8 units	8 units	8 units	8 units
Prescriber Signature: <i>James Simmonds</i>	Print your name: <b>SIMMONDS</b>		<i>JS</i>	<i>JS</i>	<i>MG</i>	<i>MG</i>	
Meal / time: <b>Pre-Bed</b>	Name of insulin: <b>Basal insulin name</b>		24 units	24 units	24 units	24 units	24 units
Prescriber Signature: <i>James Simmonds</i>	Print your name: <b>SIMMONDS</b>		<i>JS</i>	<i>JS</i>	<i>MG</i>	<i>JS</i>	<i>J</i>
Meal / time:	Name of insulin:		units	units	units	units	units
Prescriber Signature:	Print your name:		initials	initials	initials	initials	initials

**Ceased. Changing to mixed insulin prior to discharge. See new order. J Simmonds**

6.2 Supplemental insulin orders

It is not necessary for all patients to have supplemental insulin prescribed. It might be considered where glycaemic control has been erratic and strict control is desirable. Supplemental insulin may be in addition to a routine mealt ime or basal insulin dose. It may be required if the:

- o Patient’s condition, dietary intake or a concurrent medication is altering their insulin requirements
- o Patient has recently commenced subcutaneous insulin and optimal doses have not yet been determined.

Example: Prescription for supplemental doses to be administered with meals

Supplemental Insulin Orders		valid until changed or ceased				
Sliding scale insulin alone is <b>NOT</b> recommended, consider basal insulin needs.						
<b>Remember:</b> Adjust routine insulin based on supplemental insulin requirements.						
<b>If unsure, seek advice.</b>						
<b>Frequency:</b>			<b>Name of insulin:</b> Usually the same as the routine short acting insulin			
<input checked="" type="checkbox"/> With meals <b>only</b>			<b>Supplemental insulin name</b> (same insulin as mealt ime insulin)			
<input type="checkbox"/> 6 hourly						
<input type="checkbox"/> Other (specify): .....						
It is <b>NOT</b> necessary to prescribe supplemental insulin for all patients.						
<b>If the BGL (mmol/L) is:</b>		Start date:	12/7	/	/	/
		Start time:	11:30	:	:	:
8.1 – 12 or .....		2	units	units	units	units
12.1 – 16 or .....	<b>then administer additional:</b>	4	units	units	units	units
16.1 – 20 or .....		6	units	units	units	units
Greater than 20 (and notify Dr) or .....		8	units	units	units	units
Prescriber Signature: <i>James Simmonds</i>	Print your name: <b>SIMMONDS</b>	<i>JS</i>	initials	initials	initials	initials

Tick the *Frequency* the supplemental insulin dose is to be administered:

- o *With meals only* if the patient is tolerating an oral diet
- o *6 hourly* if the patient is receiving continuous parenteral nutrition or tube feeding
- o *Other (specify)* in specific circumstances and specify when it would be required.

Write the *Name of Insulin* to be administered in the space provided. Usually, if the patient is receiving rapid or short acting routine insulin with meals, the same type of insulin is prescribed as supplemental insulin.

Write the *Start date* and *Start time* that the orders are written.

Standardised BGL ranges, which are colour coded and match the BGL ranges in the *Monitoring Record*, are pre-printed on the form with a starting BGL range for supplemental insulin of 8.1-12mmol/L. If required, alternate BGL ranges may be used.

Document the insulin doses in the relevant *Start date* column. The doses should be written as a whole number, and be written against the BGL ranges at which they are to be administered. The word units is pre-printed as a watermark.

The prescriber must sign the order and print their name in the spaces provided. The prescriber must also write the full trade name of the supplemental insulin in the *Administration Record* row with the prompt *Name of supplemental insulin*.

The *Supplemental Insulin Order* remains valid until ceased or changed. This is in contrast to routine insulin orders, where doses are required for each day.

**Rationale:** Routine doses should be adjusted daily in response to the BGLs and the amount of supplemental insulin required in the previous 24 hours. Therefore the patient's requirement for supplemental insulin should reduce as routine insulin doses are adjusted.

If necessary review and amend supplemental dose changes as required in the corresponding date columns. Changes are validated by the prescriber initialling at the bottom of the corresponding start date column.

The *Supplemental Insulin Order* does not continue past the last usable day on the form. After completion of a previous form, *Supplemental Insulin Orders* must be either :

- ordered on the new form if supplemental insulin is to be continued, or
- ceased on the expiring form to communicate the intention that the patient is no longer to receive supplemental insulin.

Administration of the insulin dose is documented in the *Administration Record* section (see section 6.4).

Example: ceasing the supplemental order

Supplemental Insulin Orders		valid until changed or ceased				
Sliding scale insulin alone is <b>NOT</b> recommended, consider basal insulin needs.						
<b>Remember:</b> Adjust routine insulin based on supplemental insulin requirements.						
<b>If unsure, seek advice.</b>						
<b>Frequency:</b>		<b>Name of insulin:</b> Usually the same as the routine short acting insulin				
<input checked="" type="checkbox"/> With meals <b>only</b>		Supplemental insulin name (same insulin as mealtime insulin)				
<input type="checkbox"/> 6 hourly						
<input type="checkbox"/> Other (specify): .....						
It is <b>NOT</b> necessary to prescribe supplemental insulin for all patients.						
<b>If the BGL (mmol/L) is:</b>		Start date:	12/7	/	/	/
		Start time:	11:30	:	:	:
8.1 – 12	or .....		2	units	units	units
12.1 – 16	or .....	<b>then administer additional:</b>	4	units	units	units
16.1 – 20	or .....		8	units	units	units
Greater than 20 (and notify Dr)	or .....		8	units	units	units
Prescriber Signature: <i>James Simmonds</i>		Print your name: <b>SIMMONDS</b>		<div style="text-align: center;"> <p><b>14/7/17</b></p> <p><b>J Simmonds</b></p> </div>		

**Special Note:**

**SUBCUTANEOUS SLIDING SCALE insulin is NOT RECOMMENDED as sole insulin therapy. BASAL insulin requirements should be considered.**

### 6.3 Stat / phone insulin orders

Document any single stat or phone insulin dose orders in this section. Administration of the insulin dose is documented in the *Administration Record* section along with Routine doses (see section 7.3).

#### 6.3.1 Stat orders

If the doctor is notified of an out-of-range BGL, a stat dose may be ordered. The prescriber must inform verbally the RN responsible for the patient's care of any stat orders.

#### 6.3.2 Phone orders

If a RN takes a phone order for any insulin dose (routine or due to an out-of-range BGL), the order is documented here. A second nurse must read back the written order to the prescriber to confirm that the order is correct and then countersign the phone order. The nurse(s) receiving the phone order must check if the stat / phone order replaces, or is in addition to, other insulin orders.

Phone orders should be signed by the prescriber within 24 hours.

Stat / Phone Insulin Orders						also complete Administration Record above	
Check with doctor if order replaces, or is in addition to, other insulin orders.							
Date prescribed	Name of insulin	Units	Date / time of dose	Prescriber		Phone Order	
				Signature	Print your name	Nurse 1 / 2	
14/7/12	Mealtime insulin name	9 units	14/7/12 1235	per phone Dr J Simmonds <i>J Simmonds</i>		FM	CR
		units					

Routine Insulin Orders							must be ordered for each day					
Contact doctor if expected dose not ordered.							Date:	10/7	11/7	12/7	13/7	14/7
Mealtime insulin is given at start of meal.												
Meal / time:	Name of insulin:						units	units	units	units	units	
Prescriber Signature:	Print your name:						initials	initials	initials	initials	initials	
Meal / time:	Name of insulin:						units	units	units	units	units	
<b>Breakfast</b>	<b>Mealtime insulin name</b>						X	8	8	8	8	
Prescriber Signature: <i>James Simmonds</i>	Print your name: <b>SIMMONDS</b>						<i>JS</i>	<i>JS</i>	<i>MG</i>	<i>MG</i>		
Meal / time:	Name of insulin:						units	units	units	units	units	
<b>Lunch</b>	<b>Mealtime insulin name</b>						X	8	8	9	phone	
Prescriber Signature: <i>James Simmonds</i>	Print your name: <b>SIMMONDS</b>						<i>JS</i>	<i>JS</i>	<i>MG</i>			

### 6.4 Administration record

When prescribing insulin, the prescriber should write the full trade name in the *Administration Record* where the rows prompt *Name of routine insulin* and *Name of supplemental insulin*. If the prescriber has not written the insulin trade name and the patient requires an insulin dose, the RN or pharmacist may write the full trade name in these rows.

Administration Record			
Name of routine insulin:		8	
<b>Mealtime insulin name</b>	units	units	units
Name of routine insulin:			24
<b>Basal insulin name</b>	units	units	units
Name of routine insulin:			
	units	units	units
Name of supplemental insulin:			
<b>Supplemental insulin name</b>	units	units	units

## 7. Documentation of insulin administration

See examples of documenting insulin administration throughout this section.

Administration of all insulin doses is documented in the *Administration Record*. Prepare and administer insulin according to facility procedure. Document the dose administered against the corresponding *Name of routine insulin* or *Name of supplemental insulin* row in the *Administration Record*. Document the time insulin is given. Initial in the *Nurse 1 initials* box to acknowledge administration of the dose. The second nurse checking the insulin dose should initial in the *Nurse 2 initials* box. The 2 sets of initials confirm the administration of each insulin dose.

A BGL should be performed within the 30 minutes before an insulin dose as it may change significantly prior to insulin administration if left longer. Insulin doses administered at mealtimes should be given immediately before a patient eats, when their meal is in front of them.

**Rationale:** In the hospital setting meal delivery times are variable and if delayed after insulin has been administered, hypoglycaemia may result.

*Routine, Supplemental* and *Stat / Phone* insulin orders may be ordered for the same time. If so, insulin orders that are the same type of insulin (e.g. short-acting) may be administered together but must be documented separately.

If clinical judgement indicates that a prescribed dose should not be administered (e.g. the patient is fasting or vomiting), notify the prescriber to review the dose. If for any reason an insulin dose cannot be administered as ordered notify the prescriber, enter code (W) for withheld and document in the clinical record. **Note:** It would be unusual for a patient with type one diabetes to have their insulin dose withheld completely.

Administration Record																	
Name of routine insulin:		8				8				8				8			
Mealtime insulin name		units	units	units	units	units	units	units	units	units	units	units	units	units	units	units	units
Name of routine insulin:		24				24				28							
Basal insulin name		units	units	units	units	units	units	units	units	units	units	units	units	units	units	units	units
Name of routine insulin:																	
Name of supplemental insulin:										4							
Supplemental insulin name		units	units	units	units	units	units	units	units	units	units	units	units	units	units	units	units
Time given		1740				1715				2140							
Nurse 1 / 2 initials		SG / SG DT / DT				DE / DE EM / EM				JA / JA MA / MA CR / CR				PB / PB EM / EM AB / AB BW / BW			
Comments		Reviewed at 1730 Starting routine insulin															

Nurses must write the dose given, time given and initials  
**If for any reason insulin cannot be administered as ordered, notify doctor, enter code (W) for withheld and document in clinical record**

If supplemental short-acting insulin is ordered for the same time as routine short-acting insulin, they may be given together but must be recorded separately

### 7.1 Administration of a routine insulin dose

After taking and recording a BGL, check if an insulin dose is to be administered. Note: some patients may be prescribed more than one type of insulin at a time.

In the *Routine Insulin Orders* section *Meal / times* (i.e. *Breakfast, Lunch, Dinner, Pre-Bed*) are pre-printed. The dose is prescribed under the current *Date* column. If there is no dose ordered where one would be expected, contact the prescriber or doctor on-call to determine if a dose is required and to provide a phone order if it is.

Calculate and prepare total insulin dose (Routine +/- Supplemental +/- Stat / Phone).

Confirm the insulin type and dose is correct with another appropriately trained nurse. Check local procedure to determine whether different types of insulin can be mixed in the syringe.

Administer the insulin. Document the time insulin is given in the *Time given* row of the *Administration Record* to accurately reflect the time of administration (which may be slightly different from the time the BGL is recorded). Document the administration as outlined above.

## 7.2 Administration of a supplemental insulin dose

Review the *Supplemental Insulin Orders* and check whether supplemental insulin is required at that *Meal / time* according to the BGL ranges for which it is prescribed. Calculate and prepare the dose of insulin to be administered (and which may be in addition to a routine mealtime dose).

Administer the insulin and document the administration in the *Administration Record* as outlined above. Supplemental insulin and routine insulin of the same type (e.g. short-acting) and due at the same time may be administered together but must be documented separately.

## 7.3 Documenting phone orders and administration of phone orders

If a RN takes a phone order for any insulin dose (*Routine* or because BGL requires notification), the order is documented here. **Note:** A second nurse must read back the order documented by the first RN to the doctor to confirm it is correct and then countersign the phone order. The nurse(s) receiving the phone order must check to see if the *Stat / Phone* order replaces or is in addition to other insulin orders.

Document the administration of phone order insulin in the *Administration Record* as outlined previously. Also cross reference the order by writing 'phone' in the dose box in the *Routine Insulin Orders*.

The phone order must be signed by the authorised prescriber, or otherwise confirmed in writing according to facility procedure.

## 7.4 Documenting administration of stat orders

If the Medical Officer attends the ward and prescribes a single dose in the *Stat / Phone Insulin Orders*, then he/she must verbally inform the RN responsible for the patient's care.

Prepare and administer the insulin and document the administration in the *Administration Record* as outlined previously.

## 7.5 Examples

### 7.5.1 Routine insulin

The patient is prescribed 8 units of rapid acting insulin as a routine insulin dose for breakfast on 11/7/12. The BGL is 12mmol/L. Eight (8) units of insulin are ordered in the *Routine Insulin Orders*. There are no supplemental or stat / phone insulin orders, so the dose to be administered remains 8 units of routine rapid-acting insulin. The time of administration '0730' is documented in the *Time given* row. 8 units of rapid-acting insulin is administered and documented as '8': the total dose administered in the relevant row of the *Administration Record*. The nurses should initial to document the administration as outlined above.

Nurses must write the dose given, time given and initials

If for any reason insulin cannot be administered as ordered, notify doctor, enter code (W) for withheld and document in clinical record

If supplemental short-acting insulin is ordered for the same time as routine short-acting insulin, they may be given together but must be recorded separately

Administration Record												
Name of routine insulin:	8											
Mealt ime insulin name	units	units	units	units	units	units	units	units	units	units	units	units
Name of routine insulin:	24											
Basal insulin name	units	units	units	units	units	units	units	units	units	units	units	units
Name of routine insulin:												
Name of supplemental insulin:												
Supplemental insulin name	units	units	units	units	units	units	units	units	units	units	units	units
Time given	1740	2145					0730	300	1715	2130		
Nurse 1 / 2 initials	SG	SG					DE	DE	JT	MA		
	DI	DI					FN	FN	CR	HJ		
Comments	Reviewed at 1730 Starting routine insulin											

Routine Insulin Orders must be ordered for each day							
Contact doctor if expected dose not ordered.		Date:	10/7	11/7	12/7	13/7	14/7
Mealt ime insulin is given at start of meal.							
Meal / time:	Name of insulin:	units	units	units	units	units	units
Prescriber Signature:	Print your name:	initials	initials	initials	initials	initials	initials
Meal / time:	Name of insulin:	units	units	units	units	units	units
<b>Breakfast</b>	Mealt ime insulin name	X	8	8	8	8	
Prescriber Signature: James Simmonds	Print your name: SIMMONDS	initials	JS	JS	MG	MG	
Meal / time:	Name of insulin:	units	units	units	units	units	units
<b>Lunch</b>	Mealt ime insulin name	X	8	8	9	phone	
Prescriber Signature: James Simmonds	Print your name: SIMMONDS	initials	JS	JS	MG		
Meal / time:	Name of insulin:	units	units	units	units	units	units
<b>Dinner</b>	Mealt ime insulin name	8	8	8	9		
Prescriber Signature: James Simmonds	Print your name: SIMMONDS	initials	JS	JS	MG	JS	
Meal / time:	Name of insulin:	units	units	units	units	units	units
<b>Pre-Bed</b>	Basal insulin name	24	24	28	28		
Prescriber Signature: James Simmonds	Print your name: SIMMONDS	initials	JS	JS	MG	JS	
Meal / time:	Name of insulin:	units	units	units	units	units	units
Prescriber Signature:	Print your name:	initials	initials	initials	initials	initials	initials



### 7.5.3 Phone orders

On the 14/7/12 there is no insulin ordered for lunchtime. As the patient has been receiving routine insulin, the nurse notifies the prescriber that the lunchtime BGL is 8mmol/L. A phone order is made for 9 units of rapid-acting insulin to Nurse 1 who initials to confirm receipt of the order. Nurse 2 reads the written phone order back to the prescriber to confirm and countersigns receipt of the order. Nurse 1 writes "phone" in the *Routine Insulin Orders* dose box to indicate that a phone order has been taken.

Nurse 1 and Nurse 2 then prepare the ordered insulin dose. Nurse 1 and Nurse 2 then administer the insulin and write the time as '12:45 in the *Time given* row. They write '9' as the units administered and initial under the dose.

The prescriber signs the phone order within 24 hours.

**Stat / Phone Insulin Orders** also complete Administration Record above

Check with doctor if order replaces, or is in addition to, other insulin orders.

Date prescribed	Name of insulin	Units	Date / time of dose	Prescriber		Phone Order
				Signature	Print your name	
14/7/12	Mealtime insulin name	9 units	14/7/12 1235	<i>per phone</i>	Dr J Simmonds <i>J Simmonds</i>	FM CR

**Administration Record**

Nurses must write the dose given, time given and initials  
 If for any reason insulin cannot be administered as ordered, notify doctor, enter code (W) for withheld and document in clinical record

If supplemental short-acting insulin is ordered for the same time as routine short-acting insulin, they may be given together but must be recorded separately

Name of routine insulin:	8	8	8	8	8	8	8	9	9	8	9
Mealtime insulin name											
Basal insulin name	24			24						28	
Name of routine insulin:											
Name of supplemental insulin:					4			2			4
Supplemental insulin name											
Time given	1740	1245		0730	300	1715	2130	0745	1245	1715	2140
Nurse 1 / 2 initials	SG/SG	DL/DL		DE/DE	PT/PT	MA/MA		PA/PA	EB/EB	BN/BN	
Comments	Reviewed at 1730	Starting routine insulin							Hypo treated per protocol. For review	Skipped breakfast	Call Dr for lunch dose

The nurse also cross references the phone order in the Routine Insulin Orders, so that clinicians are aware a phone order has been taken.

**Routine Insulin Orders** must be ordered for each day

Contact doctor if expected dose not ordered. Date: 10/7 11/7 12/7 13/7 14/7

Mealtime insulin is given at start of meal.

Meal / time:	Name of insulin:	units	units	units	units	units
Breakfast	Mealtime insulin name	<del>8</del>	8	8	8	8
Prescriber Signature: James Simmonds	Print your name: SIMMONDS	<del>JS</del>	JS	JS	MG	MG
Lunch	Mealtime insulin name	<del>8</del>	8	8	9	phone
Prescriber Signature: James Simmonds	Print your name: SIMMONDS	<del>JS</del>	JS	JS	MG	JS
Dinner	Mealtime insulin name	8	8	8	9	
Prescriber Signature: James Simmonds	Print your name: SIMMONDS	JS	JS	MG	JS	
Pre-Bed	Basal insulin name	24	24	28	28	
Prescriber Signature: James Simmonds	Print your name: SIMMONDS	JS	JS	MG	JS	

## 8. Comments section

This area (below the *Administration Record*) is for documenting communication between members of the team caring for the patient regarding insulin therapy and diabetes management.

Examples of what can be documented here are that:

- the doctor has been notified of the BGL
- a hypoglycaemic event has been treated
- the patient has been changed to intravenous insulin.

Comments	Reviewed at 1730 Starting routine insulin		Hypo treated per protocol. For review Skipped breakfast	Call Dr for lunch dose
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## 9. Guidelines for Managing Hyperglycaemia Alerts

The *Guidelines for Managing Hyperglycaemic Alerts* (on page 1) have been included to assist inexperienced and non-frequent prescribers and other clinicians. They are not designed to decrease autonomy or specialist input. If there are any clinical concerns, senior medical officer advice should be obtained.

The guidelines provide information related to:

- ① assessment required when called for a Hyperglycaemia Alert
- ② initiation of basal and mealtime insulin and adjustment of insulin doses
- ③ suggested stat and supplemental doses based on weight or previous total daily dose.



### Insulin Subcutaneous Order and Blood Glucose Record - Adult

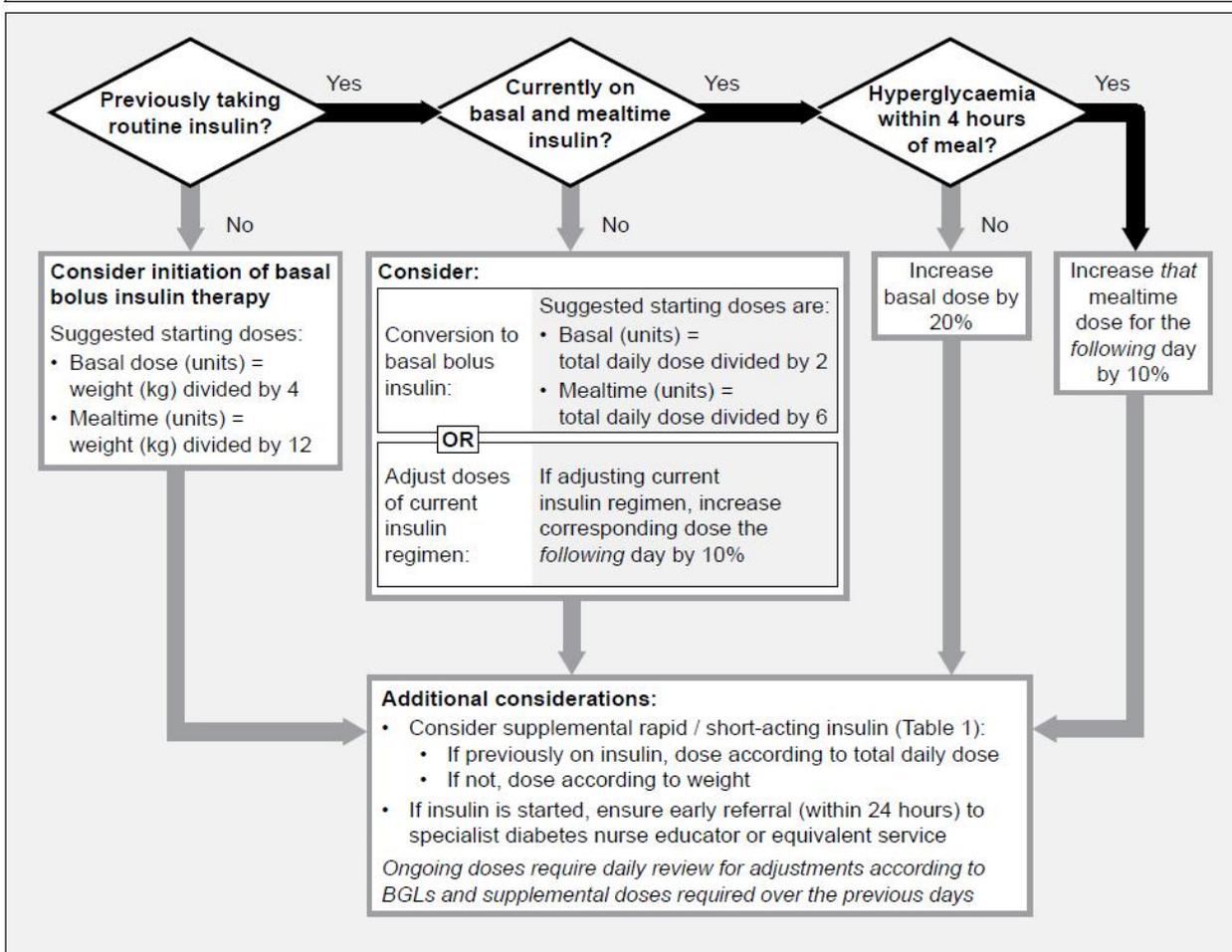


1

## Guidelines for Managing Hyperglycaemia Alerts

- Assess**
1. Hydration and dietary status: is hyperglycaemia easily explained by dietary indiscretion?
  2. Ketones: if ketone test is positive consider diabetic ketoacidosis (DKA). Seek expert advice
  3. Concurrent medications: if on oral corticosteroids or Total Parenteral Nutrition (TPN) seek expert advice
  4. Missed doses of insulin or oral hypoglycaemic agent
  5. If not eating normally or markedly labile BGLs consider insulin infusion
  6. Are alterations to insulin regimen or initiation of insulin required? Consider:
    - a. Is it likely that insulin will be continued after discharge? If not, is it necessary to start it currently?
    - b. What was the pre-morbid BGL control like? What is current HbA1c?
    - c. Does the patient want long term insulin treatment? If so, what is their preferred regimen?
    - d. Was hyperglycaemia secondary to treated hypoglycaemia?

2



3

Table 1: Suggested initial stat and supplemental rapid / short-acting insulin doses

Previously on insulin: use previous total daily dose		Less than 26 units	26–50 units	51–100 units	More than 100 units
Not previously on insulin: use actual weight		Less than 50 kg	50.1–100 kg	100.1–150 kg	More than 150 kg
BGL mmol/L	8.1–12	1 unit	2 units	3 units	4 units
	12.1–16	2 units	4 units	6 units	8 units
	16.1–20	3 units	6 units	9 units	12 units
	More than 20	4 units	8 units	12 units	16 units

## 10. Hypoglycaemia Management in Diabetes: Adult

### 10.1 Hypoglycaemia Management in Diabetes: BGL Less than 4mmol/L

This flow diagram (on page 4) has been designed to standardise the management of hypoglycaemia in adults treated in the hospital setting (emergency department, inpatients and outpatients).

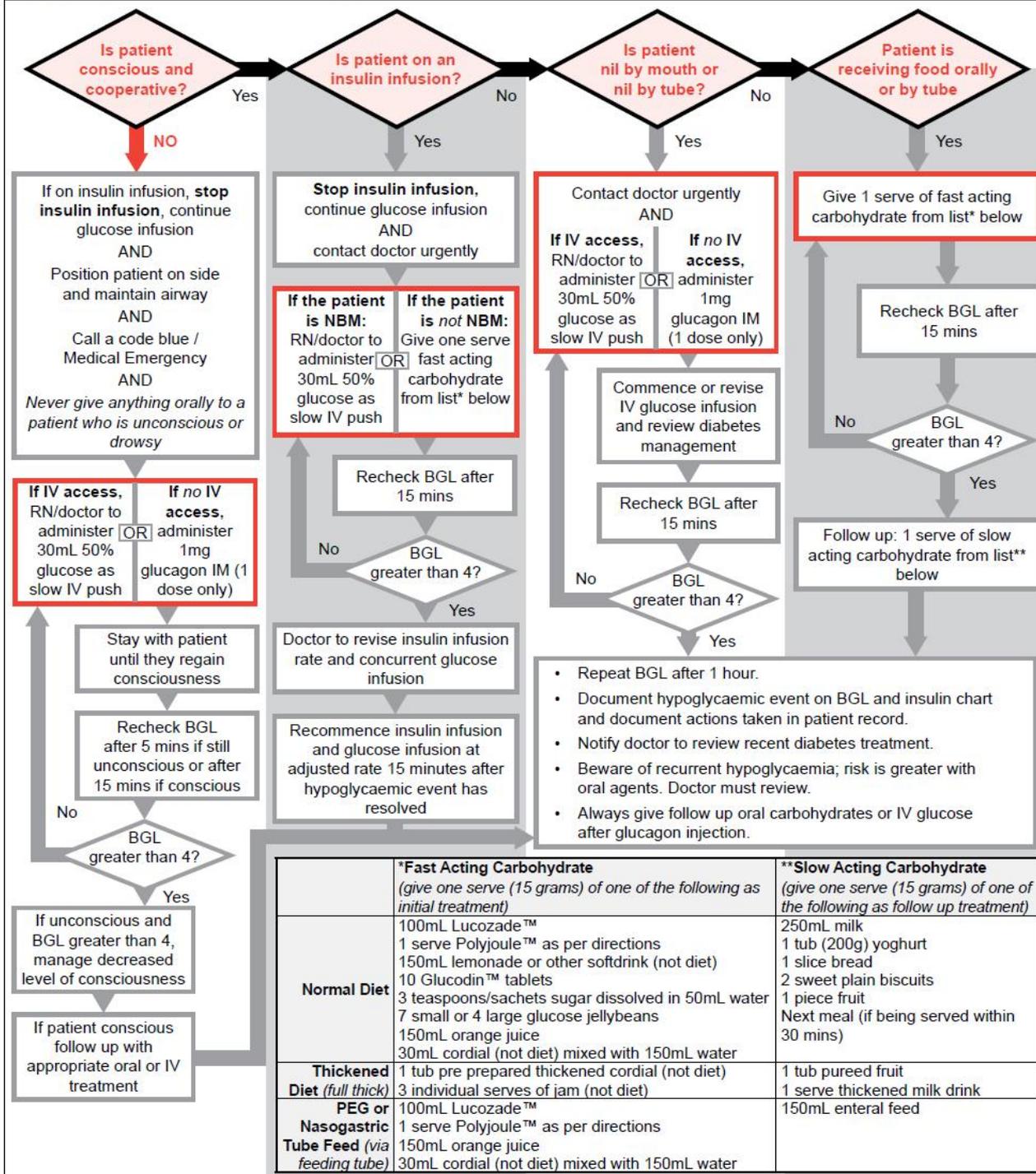
The flow diagram has four treatment pathway options based on the patient's current condition, treatment and dietary status. These are determined by whether the patient is:

- conscious and cooperative
- receiving insulin via an intravenous insulin infusion
- nil by mouth or nil by tube
- receiving food orally or by tube.

Lists of appropriate food choices are supplied for use as initial and follow-up treatment according to the diet the patient is receiving.

- Food choices are determined from the standard options available at the site.
- Sites are encouraged to ensure that the chosen food choices are in a central location in each ward, unit and outpatient facility.
- Each ward, unit and outpatient facility should have access to intravenous glucose 50% and glucagon 1mg injection to use in emergency situations.
- Glucose based products are preferred as initial treatment.
- Diet (low kilojoule) products must not be used to treat hypoglycaemia.

# Hypoglycaemia Management in Diabetes: BGL Less than 4mmol/L



	*Fast Acting Carbohydrate (give one serve (15 grams) of one of the following as initial treatment)	**Slow Acting Carbohydrate (give one serve (15 grams) of one of the following as follow up treatment)
<b>Normal Diet</b>	100mL Lucozade™ 1 serve Polyjoule™ as per directions 150mL lemonade or other softdrink (not diet) 10 Glucodin™ tablets 3 teaspoons/sachets sugar dissolved in 50mL water 7 small or 4 large glucose jellybeans 150mL orange juice 30mL cordial (not diet) mixed with 150mL water	250mL milk 1 tub (200g) yoghurt 1 slice bread 2 sweet plain biscuits 1 piece fruit Next meal (if being served within 30 mins)
<b>Thickened Diet (full thick)</b>	1 tub pre prepared thickened cordial (not diet) 3 individual serves of jam (not diet)	1 tub pureed fruit 1 serve thickened milk drink
<b>PEG or Nasogastric Tube Feed (via feeding tube)</b>	100mL Lucozade™ 1 serve Polyjoule™ as per directions 150mL orange juice 30mL cordial (not diet) mixed with 150mL water	150mL enteral feed

## 10.2 Diabetes treatment review following treated hyperglycaemia

Diabetes management must be reviewed in response to a hypoglycaemic event and clinicians should refer to the *Diabetes treatment review following treated hypoglycaemia* guidelines

Diabetes treatment review following treated hypoglycaemia	
<p>1. Assess patient – provide basic and advanced life support if required.</p> <p>2. Review diabetes management for causes of hypoglycaemia and correct avoidable causes:</p> <p>a. If the cause is identified and corrected (e.g. missed, delayed or reduced intake), insulin dose adjustment is not required unless hypoglycaemia recurs.</p> <p>b. If the cause is not identified or cannot be corrected and:</p> <p>i. hypoglycaemia has occurred <b>within</b> 4 hours after mealtime insulin, reduce the dose of <b>that</b> mealtime insulin by 20% the following day.</p> <p>ii. If hypoglycaemia has occurred <b>outside</b> 4 hours after mealtime insulin reduce basal insulin dose by 20%.</p>	<p>3. If on insulin and eating normally, <b>do not withhold subsequent mealtime or basal insulin</b> after treating hypoglycaemia:</p> <p>a. If reduced oral intake consider reducing mealtime insulin dose(s).</p> <p>4. <b>If on a sulphonylurea, obtain specialist advice on management</b> as hypoglycaemia can be recurrent or prolonged:</p> <p>a. Monitor BGL hourly for 4 hours, then 4 hourly for 24 hours after last hypoglycaemic episode.</p> <p>b. If recurrent hypoglycaemia, commence IV glucose titrating rate to BGL greater than 4 mmol/L.</p> <p>c. Withhold oral hypoglycaemic treatment until recovered and review whether further therapy is required.</p>

## 11. Pharmacy review

It has been clearly demonstrated that inpatients benefit from a clinical pharmacist review of their medication regimen. Associated activities such as liaison with medical and nursing staff, clarification of orders, supply and administration information are necessary to ensure safe and effective outcomes for patients. Patients not seen by a clinical pharmacist during their stay are at greater risk of an unfavourable medicine related outcome.

The clinician undertaking pharmacy review should sign the *Pharmacy Review* section (on the bottom right side of page 3) as a record that they have reviewed the insulin form (on the corresponding day) to ensure that all insulin orders are clear, safe and appropriate for that individual patient, therefore reducing the risk of an adverse drug event.

Pharmacy Review	Date:	11/7	/	/	/	/
		IC				
		<small>initials</small>	<small>initials</small>	<small>initials</small>	<small>initials</small>	<small>initials</small>