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PLEASE NOTE: The Hyperglycaemia Protocol and Basal Bolus Insulin Chart should not be
used for diabetic emergencies or for peri operative management. Consultation must be
sought regarding its use in the paediatric, obstetric and aged care settings.

1. Purpose and scope of use
Inpatients with diabetes can have suboptimal pre-admission glycaemic control. Medical stress (eg ischaemia, sepsis, inflammation) can worsen glucose control. In addition, patients in the post-surgical phase may also be at risk of hyperglycaemia. Optimising inpatient blood glucose levels (5-10mmol/L) during hospital admission has been shown to improve morbidity and mortality, patient outcomes and length of stay.

The purpose of this clinical support guide is to aid clinicians in using the CHSA Hyperglycaemia Protocol and Basal-Bolus Insulin Chart: Adult (MR62A) in a safe and effective way.

Basal Bolus Insulin (BBI) refers to a combination of long acting (basal) insulin and rapid acting (bolus) insulin injections. BBI aims to mimic normal insulin secretion.

BBI is evidence based. Literature identifies BBI offers better blood glucose (BG) control than sliding scale insulin (SSI) as it aims to prevent the BG rising (rather than only treating the BG when high).

BBI is not associated with increased hypoglycaemia (when compared with SSI).

2. Patients who will benefit
Inpatients with diabetes who will benefit from this protocol are those who have an anticipated length of stay greater than 48 hours and:

1. have current hyperglycaemia where current diabetes therapy is insufficient (eg more than one BG greater than 10.0mmol/L within a 24 hour period)
2. have anticipated hyperglycaemia where current diabetes therapy is unlikely to be sufficient (eg more than one BG greater than 10.0mmol/L within a 24 hour period post operatively)
3. are transitioning from an intravenous (IV) insulin infusion.

The protocol is not to be used in inpatients:

1. who have an anticipated length of stay less than 48 hours
2. with BG in target on their usual diabetes medication (eg oral and/or injectables)
3. with Diabetic Ketoacidosis (DKA) – refer to the CHSA DKA/Type 1 Protocol (MR-INF-A)
4. with Hyperglycaemic Hyperosmolar state (HHS) – refer to the CHSA HHS/Type 2 Protocol (MR-INF-B).

Consultation must be sought from the paediatrician, obstetrician, GP obstetrician, specialist physician or endocrinologist for use in the paediatric, obstetric or residential aged care setting.
3. Insulin requirements

BBI refers to a combination of long acting (basal) insulin and rapid acting (bolus) insulin injections. BBI aims to mimic normal insulin secretion and figure 1 demonstrates the insulin response to basal metabolism and carbohydrate (CHO) intake.

**Figure 1: Basal Bolus Insulin requirements**

**Basal (long acting) insulin requirements**

Basal insulin is required for background metabolic needs and is not related to food or fluids consumed. The green coloured line in the diagram above represents endogenous basal insulin secretion over a 24 hour period.

Glargine 100units/mL (Lantus®) insulin is used to cover basal needs in the Hyperglycaemia Protocol BBI Chart (MR62A). Glargine 100units/mL (Lantus®) insulin is administered at 2100 hours and supper is not required.

The diagram below outlines the action profile of Glargine 100units/mL (Lantus®) insulin.

**Note:** In type 1 diabetes, insulin is required for survival. Withholding basal insulin will result in hyperglycaemia and diabetic ketoacidosis.

**Bolus (rapid acting) meal related insulin requirements**

Bolus meal related insulin is released in response to carbohydrate (CHO) containing food or fluids consumed. The yellow coloured line in the diagram above represents endogenous bolus insulin secretion at main meal times over a 24 hour period.

The more CHO, the more insulin is required. In the inpatient setting, CHO consumed will vary due to nausea, loss of appetite, fasting and re-introduction of food and fluids.

Aspart 100units/mL (NovoRapid®) and Lispro 100units/mL (Humalog®) insulins are used to cover bolus needs in the Hyperglycaemia Protocol BBI Chart (MR62A).

Bolus (rapid acting) insulin are only to be administered at main meal times eg 3 times daily.

The diagram below outlines the action profile of NovoRapid® and Humalog® insulins.
Bolus (rapid acting) correctional insulin requirements

A correctional (rapid acting) insulin bolus can be administered to address BG above target eg an extra 3 units is added if the pre meal BG is 10.0-15.0mmol/L and an extra 6 units if BGL is >15.0mmol/L.

A correctional (rapid acting) insulin bolus can be used alone if the patient is fasting or added to the bolus (rapid acting) meal related insulin dose/s.

Aspart 100units/mL (NovoRapid®) and Lispro 100units/mL (Humalog®) insulins are used for correctional bolus requirements.

Correctional (rapid acting) insulin doses are limited to main meal times only.

Note: The Hyperglycaemia Protocol BBI Chart (MR62A) provides two sections for prescribing bolus (rapid acting) insulin:

- bolus (rapid acting) insulin with meals
- correctional (rapid acting) insulin at main meal times and given even if fasting.

4. Transitioning from an intravenous insulin infusion

Intravenous (IV) Regular (Actrapid®) insulin has a half-life of only 7 minutes with a duration of approximately 1 hour.

To transition to the BBI chart (MR62A) from IV insulin infusion, the IV insulin infusion MUST NOT be discontinued until at least 4 hours after commencement of subcutaneous basal Glargine (Lantus®) insulin.

IV Regular (Actrapid®) insulin adjustments can continue based on blood glucose levels as this ensures adequate insulin coverage during the 4 hour transition to the basal bolus insulin schedule.

5. How insulin is prescribed using the BBI chart (MR62A)

The Hyperglycaemia Protocol BBI Chart (MR62A) insulin orders are divided into three sections:

1. bolus (rapid acting) insulin with main meals
2. correctional (rapid acting) insulin if BG >10.0mmol/L at main meal times and given even if fasting
3. basal (long acting) insulin (given at 2100).

The prescriber MUST sign all sections of the chart.

Steps to initiate, review, adjust and cease for planned discharge therapy are outlined on the back of the chart.

See Appendix 1: Example Hyperglycaemia Protocol BBI Chart (MR62A)
**Step 1: Using the chart**

2. Review/measure HbA1c to assess pre admission diabetes control.

**Step 2: Calculating total daily insulin**

Using the table below, calculate the Total Daily Insulin (TDD) requirements using the patient’s weight and current diabetes medications (*eg oral/injectable agents or subcutaneous insulin/s*).

<table>
<thead>
<tr>
<th>Current diabetes treatment</th>
<th>Total initial daily insulin dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diet</td>
<td>0.3units/kg</td>
</tr>
<tr>
<td>Oral/injectable agents*</td>
<td>0.4units/kg</td>
</tr>
<tr>
<td>Subcutaneous insulin</td>
<td>Insulin used in last 24 hours</td>
</tr>
<tr>
<td>S/C insulin + oral/injectable agents*</td>
<td>Insulin used in last 24 hours + 10%</td>
</tr>
<tr>
<td>Intravenous infusion(\wedge)</td>
<td>Four times insulin used in last 6 hrs</td>
</tr>
</tbody>
</table>
Examples of how the TDD is calculated:

1. **80kg patient diet-controlled**
   > \[ TDD = 0.3 \times 80\text{kgs} = 24 \text{ units} \]

2. **90kg patient taking metformin and gliclazide**
   > \[ TDD = 0.4 \times 90\text{kgs} = 36 \text{ units} \]

3. **75kg patient taking Mixtard 30/70, 40 units mane, 15 units evening. Also taking Metformin BD.**
   > \[ TDD = 40 + 15 = 55 \text{ units} \]
   > Add 10% (5 units) to account for ceasing Metformin = 60 units

   *metformin, sulphonylureas, DPP4 inhibitors, GLP1 injectables, SGLT2, glitazones

   \[ \Delta \text{ refer to Appendix 2 for guidance when transitioning from an insulin infusion} \]

**Step 3: Calculating basal bolus split**

1. **Basal (long acting) Insulin Requirement:** Glargine 100units/mL (Lantus®) insulin.

   Write up 50% of calculated total daily insulin dose as the glargine (basal) dose (bottom of the chart).

   An example is provided using No.1 scenario from above.

2. **Bolus (rapid acting) Insulin Requirement:** Aspart 100units/mL (NovoRapid®) or Lispro 100units/mL (Humalog®) insulin.

   Write up 50% of the calculated total daily insulin dose divided into 3 equal doses as the NovoRapid® or Humalog® (bolus) dose with meals.

   An example is provided below.
3. **Bolus (rapid acting) Correctional Insulin Requirement:** Aspart 100 units/mL (NovoRapid®) or Lispro 100 units/mL (Humalog®) insulin.

Correctional (rapid acting) bolus insulin doses are given at main meal times with the rapid acting insulin with meals or alone if the patient is fasting. The doses are predetermined but it must be signed by the prescriber.

An example is provided below.

### Step 4: Cross reference with the National Inpatient Medication Chart (NIMC)

When a patient is commenced on the BBI Chart (MR62A) here must be a cross reference on the National Inpatient Medication Chart (NIMC). This is attended by:

1. Place a \( \checkmark \) (tick) in the BGL/insulin box on page 1 of the NIMC and identifying that the NIMC is ‘1 of 2’.

An example is provided below.

2. Cross reference the insulin order in the NIMC chart to ensure the insulin prescribed on the BBI chart (MR62A) is NOT omitted during hospital admission. The authorised prescriber, pharmacist or registered nurse should note in the chart the following:

An example is provided below.
Step 5: Monitoring blood glucose and blood ketones – notification instructions

Blood glucose target

For patients in hospital the recommended target range is 5.0-10.0mmol/L. However, there will be circumstances where the BG target needs to be modified. The BG target can be modified by the prescriber eg obstetric 4.1-7.9mmol/L.

Blood glucose monitoring frequency

All patients on the BBI Chart (MR62A) must have their BG tested pre meals and 2100 hours. Consider testing BG at 0200 hours if there is a risk of recurrent or nocturnal hypoglycaemia or if the patient is fasting.

Blood ketone monitoring frequency

Blood ketones are a sign of insulin deficiency and risk of diabetic ketoacidosis (DKA). All patients on the BBI Chart (MR62A) must have their blood ketones tested daily and more frequently if BG is >15.0mmol/L or if nausea or vomiting persist.

An example is provided below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Graph BG (mmol/L)</th>
<th>Blood Glucose</th>
<th>Blood Ketones</th>
<th>Hypo protocol</th>
<th>Dr. Notified</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0700</td>
<td></td>
<td>17.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td></td>
<td>15.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1800</td>
<td></td>
<td>7.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2400</td>
<td></td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notification instructions

The Rapid Detection and Response (RDR) Instruction highlight action required by the senior registered nurse for review, multidisciplinary review and medical emergency response.
Step 6: Adjusting insulin doses
The aim is for all BG levels to be in target without requiring corrective insulin. BG should be reviewed daily and insulin doses adjusted accordingly.

The table below is also on the back of the BBI Chart (MR62A) and provides a guide to adjusting the insulin doses.

<table>
<thead>
<tr>
<th>Time BG taken</th>
<th>HIGH BG (&gt;10.0mmol/L)</th>
<th>LOW BG (&lt;4.0mmol/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before b/fast</td>
<td>Increase glargine</td>
<td>Decrease glargine</td>
</tr>
<tr>
<td>Before lunch</td>
<td>Increase b/fast rapid insulin</td>
<td>Decrease b/fast rapid insulin</td>
</tr>
<tr>
<td>Before tea</td>
<td>Increase lunch rapid insulin</td>
<td>Decrease lunch rapid insulin</td>
</tr>
<tr>
<td>2100 hours</td>
<td>Increase tea-time rapid insulin</td>
<td>Decrease tea-time rapid insulin</td>
</tr>
</tbody>
</table>

General principles
Before adjusting doses, review any clinical changes to the patient which may influence insulin requirements (eg infection is improving, appetite returning or increasing mobility).

If there is hyperglycaemia
Dose increases are generally between 10-25%. Use the amount and pattern of corrective rapid acting insulin used in the preceding 24-48 hours as a guide.

If there is hypoglycaemia
Reduce the appropriate insulin by 20-25%.

Adjusting insulin doses - Examples
ALL BG consistently high
Indicates not enough basal insulin, suggest increasing the Glargine (Lantus®) dose.

Fasting BG (eg 0700) - the only insulin impacting on this BG is the Glargine (Lantus®) dose. There will be no impact from the rapid acting Aspart (NovoRapid®) or Lispro (Humalog®) insulin administered at teatime the night before.

- **High** fasting BG - increase evening Glargine (Lantus®) dose.
- **Low** fasting BG - decrease evening Glargine (Lantus®) dose.

Lunchtime BG (eg 1200) - mainly influenced by the breakfast rapid acting Aspart (NovoRapid®) or Lispro (Humalog®) insulin dose.

- **High** BG before lunch - increase breakfast rapid acting Aspart (NovoRapid®) or Lispro (Humalog®) insulin.
- **Low** BG before lunch - decrease breakfast rapid acting Aspart (NovoRapid®) or Lispro (Humalog®) insulin.
Teatime BG (eg 1700) - mainly influenced by the lunch time rapid acting Aspart (NovoRapid®) or Lispro (Humalog®) insulin dose.

> **High** BG before tea - increase lunch rapid acting Aspart (NovoRapid®) or Lispro (Humalog®) insulin.

> **Low** BG before tea - decrease lunch rapid acting Aspart (NovoRapid®) or Lispro (Humalog®) insulin.

2100 hours BG - mainly influenced by the teatime rapid acting Aspart (NovoRapid®) or Lispro (Humalog®) insulin dose.

> **High** BG at 2100 - increase teatime rapid acting Aspart (NovoRapid®) or Lispro (Humalog®) insulin.

> **Low** BG at 2100 - decrease teatime rapid acting Aspart (NovoRapid®) or Lispro (Humalog®) insulin.

**Step 7: Stopping basal bolus insulin and transferring to discharge therapy**

The admission HbA1c will assist in determining the best discharge therapy for the person. This is outlined on the back of the form.

- HbA1c <7% (53mmol/mol) - Recomence on usual diabetes treatment.

- HbA1c 7- 8% (53-64mmol/mol) - May need increase in usual therapy, arrange follow up GP appointment.

- HbA1c >8% (64mmol/mol) - Will require increase in usual pre-admission treatment. Arrange GP and diabetes education follow up.

Once the patient’s BG levels are consistently within target, consider transferring to planned discharge therapy. Ideally, this should happen 1-2 days before discharge or when medically stable.

**Discharge on oral/injectable agents* without Glargine (Lantus®)**

> Reduce night time dose of Glargine (Lantus®) by 50% and give this as the last dose and commence oral/injectable agents* in the morning (consider eGFR for Metformin dose).

**Discharge on Glargine (Lantus®) with or without other oral/injectable agents***

> Administer night time dose of glargine as usual and commence oral/injectable agents* the following day. Continue night time Glargine (Lantus®) at home.

**Discharge on alternate insulin eg premix or morning Glargine (Lantus®)**

> Reduce night time dose of Glargine (Lantus®) by 50% and commence prescribed insulin and any oral/injectable agents* the following day.

*metformin, sulphonylureas, DPP4 inhibitors, GLP1 injectables, SGLT2, glitazones
6. Referral to diabetes educator

Priority for referral includes;

- pre-admission HbA1c above 8.5% (69mmol/mol)
- admission diagnosis of hypoglycaemia or acute hyperglycaemia
- commencement of insulin
- pregnancy or paediatric
- newly diagnosed.

7. Case scenario

58 year old man, admitted with pneumonia to medical ward. Type 2 diabetes for 5 years. On Metformin 1.0g bd.

- weight 80kg
- BGL 16.5mmol/L on admission
- HbA1c 8.6% (70mmol/mol) on admission.

BBI chart

- consider referral to diabetes educator
- cease metformin
- estimated insulin 0.4 x 80kgs = 32 units
- start Glargine (Lantus®) insulin 16 units 2100
- rapid acting ispart (NovoRapid®) insulin 5 units with meals
- review blood glucose and adjust doses daily.

Prior to discharge

- recommence metformin
- commence additional agents to assist with improving glycaemic control (as admission HbA1c 8.6% (70mmol/mol)
- consider referral to diabetes educator.
### Hypoglycaemia Protocol: Basal Bolus Insulin Chart: Adult (MR62A)

#### Purpose

The CHSA Hypoglycaemia Protocol and Basal Bolus Insulin (BBI) Chart (MR62A) will assist patients with type 1 diabetes or type 2 diabetes with high blood glucose (BG) or anticipated high BG during hospitalisation.

BBI refers to a combination of basal and bolus mealtime insulin with conventional insulin given at meal times. BBI aims to mimic normal insulin secretion. BBI offers better BG control than sliding scale insulin (SSI) as it aims to prevent the BG rising rather than only treating the BG when high. It is not associated with increased hypoglycaemia (which is common with SSI).

Inpatients with diabetes who will benefit from this protocol are those who have an anticipated length of stay greater than 48 hours and:

1. Have current hypoglycaemia where current diabetes therapy is insufficient (e.g., more than one BG greater than 10 mmol/L within a 24 hour period).
2. Have anticipated hypoglycaemia where current diabetes therapy is unlikely to be sufficient (e.g., more than one BG greater than 10 mmol/L within a 24 hour period post-operatively).
3. Are transitioning from IV insulin infusion.
4. Inpatient patients – for Country Health SA Health Sites – requires management of care by a specialist consultant, specialist physician and/or endocrinologist.

This protocol is not to be used in inpatients:

1. Who have an anticipated length of stay less than 48 hours.
2. With BG target on their usual diabetes medication (e.g., prandial and/or nadir).
3. With Diabetic Ketoacidosis (DKA) – refer to the CHSA DKA Type 1 Protocol (MR-INF-4).
4. With Hypoglycaemic Hyperinsulinaemic (HIH) – refer to the CHSA HIH Type 2 Protocol (MR-INF-2).
5. In labour.
6. In the paediatric or residential aged care setting – consultation must be sought from the paediatrician, specialist physician and/or endocrinologist.

#### Hypoglycaemia Protocol: Basal Bolus Insulin Chart: Adult (MR62A)

**Blood glucose target**

The blood glucose (BG) target range for patients with diabetes on general wards is 5.5-16.0 mmol/L. There may be circumstances where the BG target needs to be modified.

**Modified blood glucose targets (please circle if required)**

- **Type 1 Diabetes**: 4.1-7.9 mmol/L
- **Type 2 Diabetes**: 4.4-8.0 mmol/L

**Blood glucose monitoring instructions**

- **Exceeds glucose (SG) according to frequency instructions**: Place a check in the circle on the line which refers to the SG level and connect dots with a straight line.
- **Read blood ketones according to colour zones**: Use the CHSA Hypoglycaemia Protocol.
- **Test blood ketones according to colour zones**:
  - Record blood ketones result in line below the graph.
  - Record blood ketones result in line below the graph.
- **Initiate actions according to colour zone**:
  - **Initiate actions according to colour zone**:

**Interventions or Review**

*Record intervention below and write corresponding letter in intervention row below graph (A-G)*

- **A**
- **B**
- **C**
- **D**
- **E**
- **F**
- **G**

#### Hypoglycaemia Protocol: Basal Bolus Insulin Chart: Adult (MR62A)

**Steps to Initiate Hypoglycaemia Protocol and Basal Bolus Insulin Chart**

1. **Step 1**: Stop all regular current diabetes treatment. Review/Measure HbA1c to assess pre-admission diabetes control. HbA1c Date

<table>
<thead>
<tr>
<th>Current diabetes treatment</th>
<th>Total initial daily insulin dose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diabetic agent</strong></td>
<td><strong>Subcutaneous insulin</strong></td>
</tr>
<tr>
<td><strong>Insulin</strong></td>
<td>Insulin used in last 24 hours</td>
</tr>
<tr>
<td><strong>Total daily insulin</strong></td>
<td><strong>Intravenous insulin</strong></td>
</tr>
<tr>
<td><strong>Total duration</strong></td>
<td><strong>Total daily insulin</strong></td>
</tr>
</tbody>
</table>

**Identify Insulin Requirements**

- **Identify Insulin Requirements**: Glargine (basal) – write up 50% of calculated total daily insulin as the glargine (Lantus) dose.
- **Identify Insulin Requirements**: Rapid insulin with meals (bolus) – 50% of the calculated total daily insulin divided into 3 equal doses of rapid acting insulin (Humalog or NovoRapid) with meals.
- **Identify Insulin Requirements**: Coronal rapid insulin (bolus) – rapid acting insulin doses are standard and must be checked by the prescriber.

**Step 2**: Cross reference BBI Chart on the National Inpatient Medication Chart (NIMC) by ticking the BBI insulin used in last 24 hours.

**Step 3**: Daily Medical Review is required. Consider any clinician changes (e.g., infection to improving, opioid to reducing, vitamin D to improving) in the insulin dose adjustments.

**Step 4**: Adjust Insulin Doses

   - The aim is for all blood glucose (BG) levels to be within target (e.g., 5.0 - 10.0 mmol/L) without requiring correctional insulin.

**Step 5**: Time Insulin taken

<table>
<thead>
<tr>
<th>Time Insulin taken</th>
<th>HIGH BG (greater than 10.0 mmol/L)</th>
<th>LOW BG (less than 4.0 mmol/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before breakfast</td>
<td>Increase basal insulin</td>
<td>Increase basal insulin</td>
</tr>
<tr>
<td>Before lunch</td>
<td>Increase rapid insulin</td>
<td>Decrease basal insulin</td>
</tr>
<tr>
<td>Before tea</td>
<td>Increase rapid insulin</td>
<td>Decrease rapid insulin</td>
</tr>
<tr>
<td>24 hour</td>
<td>Increase basal insulin</td>
<td>Increase rapid insulin</td>
</tr>
<tr>
<td>36 hour</td>
<td>Increase basal insulin</td>
<td>Increase rapid insulin</td>
</tr>
</tbody>
</table>

**Step 6**: Insulin calculation

- **Insulin calculation**: Excess insulin to cover the previous 24 hour period.

**Step 7**: Insulin calculation

- **Insulin calculation**: Basal insulin to cover the previous 24 hour period.

**Step 8**: Basal bolus insulin chart

- **Basal bolus insulin chart**: Cessing BBI Chart is recommended when transitioning to planned discharge therapy. Ideally, this should happen 1-2 days before discharge or when medically stable and is dependent on the patient’s reason for admission and previous glycaemic control (HbA1c).

**Step 9**: Basal bolus insulin chart

- **Basal bolus insulin chart**: Cessing BBI Chart is recommended when transitioning to planned discharge therapy. Ideally, this should happen 1-2 days before discharge or when medically stable and is dependent on the patient’s reason for admission and previous glycaemic control (HbA1c).

**Step 10**: Basal bolus insulin chart

- **Basal bolus insulin chart**: Cessing BBI Chart is recommended when transitioning to planned discharge therapy. Ideally, this should happen 1-2 days before discharge or when medically stable and is dependent on the patient’s reason for admission and previous glycaemic control (HbA1c).
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 20.0</td>
<td>17.0 - 20.0</td>
<td>&gt; 20.0</td>
<td>17.0 - 20.0</td>
</tr>
<tr>
<td>15.1 - 17.5</td>
<td>12.6 - 15.0</td>
<td>15.1 - 17.5</td>
<td>12.6 - 15.0</td>
</tr>
<tr>
<td>10.1 - 12.5</td>
<td>7.5 - 10.0</td>
<td>10.1 - 12.5</td>
<td>7.5 - 10.0</td>
</tr>
<tr>
<td>4.0 - 7.5</td>
<td>2.5 - 3.9</td>
<td>4.0 - 7.5</td>
<td>2.5 - 3.9</td>
</tr>
<tr>
<td>0 - 2.4</td>
<td></td>
<td>0 - 2.4</td>
<td></td>
</tr>
</tbody>
</table>

**Blood Glucose**

<table>
<thead>
<tr>
<th>Hypoglycaemia Protocol (Re)</th>
<th>Blood Glucose</th>
<th>Blood Ketones</th>
<th>Hypo protocol (Re)</th>
<th>Dr. Notified (Re)</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Glucose</td>
<td>Blood Ketones</td>
<td>Hypo Protocol (Re)</td>
<td>Dr. Notified (Re)</td>
<td>Intervention</td>
<td></td>
</tr>
</tbody>
</table>

**Rapid Insulin with Meals (Bolus requirement)**

<table>
<thead>
<tr>
<th>Meal</th>
<th>Rapid Insulin</th>
<th>Bolus Requirement</th>
<th>Subcut</th>
<th>Administer Immediately Before or with Meal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dinner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Hypoglycaemia Protocol: Basal Bolus Insulin Chart (Adult) – MR62A**

**Appendix 1**

Example BBI (MR62A) INSIDE PAGES 2 AND 3
Appendix 2

Example BBI (MR62A) COMPLETED

2/4/2019 Fasting BG 16.9mmol/L

3/4/2019 Fasting BG 13.1mmol/L

To change rapid acting meal related bolus dosage – cease current order and rewrite all three (3) new doses in a new row.

Due to elevated pre meal BG and correctional doses used over past 24 hours, rapid acting meal related bolus doses were increased.

RDR Intervention: MO notified due to two (2) consecutive BG results greater than 15.0mmol/L.

To change long acting basal dosage – cease current order and rewrite the new dose in a new row.

Due to elevated fasting BG over past 24 hours, long acting basal dose was increased.
Contacts and further information

Local contact

➢ Clinical pharmacy or visiting pharmacist
➢ Diabetes educator service
➢ Director of Medical Services
➢ Visiting local endocrinology or diabetes physician

For urgent medical advice/support, contact your nearest regional or metropolitan hospital.

Country Health SA Local Health Network - Diabetes

www.chsa-diabetes.org.au

Australian Diabetes Society

www.diabetessociety.com.au

Diabetes management in general practice - guidelines for type 2 diabetes.

www.racgp.org.au

Diabetes Australia

www.diabetesaustralia.com.au

National Diabetes Service Scheme

www.ndss.com.au

Acknowledgements

➢ Flinders Medical Centre
➢ Repatriation General Hospital
➢ Port Augusta Hospital

Enquiries to CHSA Diabetes Service – (08) 8226 7168
Attached Documents

Document Name

Hyperglycaemia Protocol Basal Bolus Insulin Chart (MR62A)

References

Document Name


Accreditation Standards

National Safety and Quality Health Service Standards (NSQHSS)

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Evaluation and Quality Improvement Program (EQuIP)

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Consultation

Version | Consultation
---|---
1.0 | SA Health Metropolitan Diabetes Services, Nurse Practitioner-Diabetes - CHSALHN & Mt Gambier, CHSA Diabetes Specialist Nurse Network, CHSALHN Director of Endocrinology, Clinical Pharmacists, Flinders Medical Centre - Diabetes Service.

2.0 | SA Health Metropolitan Diabetes Services, Nurse Practitioner-Diabetes - CHSALHN & Mt Gambier, CHSA Diabetes Specialist Nurse Network, CHSALHN Director of Endocrinology, Clinical Pharmacists, Flinders Medical Centre - Diabetes Service, Riverland Regional Health Service.