

Hospital management of Hypoglycaemia in adults with/without diabetes mellitus

Key Points

- Hypoglycaemia is a **medical emergency** requiring immediate treatment.
- Give **quick acting carbohydrate** to restore blood glucose levels to the normal range.
- Follow with **long acting carbohydrate** either as a snack or as part of a planned meal.
- Use IM or IV therapy **if unconscious** or NBM and no NG access.
- **Document** on EPIC by requesting a hypo panel.
- All patients with severe hypoglycaemia should be **referred to the Diabetes Team** for inpatient or urgent outpatient review.
- **Hypo boxes** are available on all wards and clinical areas by the crash trolley
- Hypo box contents need **auditing** on a weekly basis
- All staff to complete hypoglycaemia education module on **moodle**

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This is a controlled document. If you are using a printed copy, check it against the version on the guidelines platform to ensure you are using the latest edition.

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Abbreviations

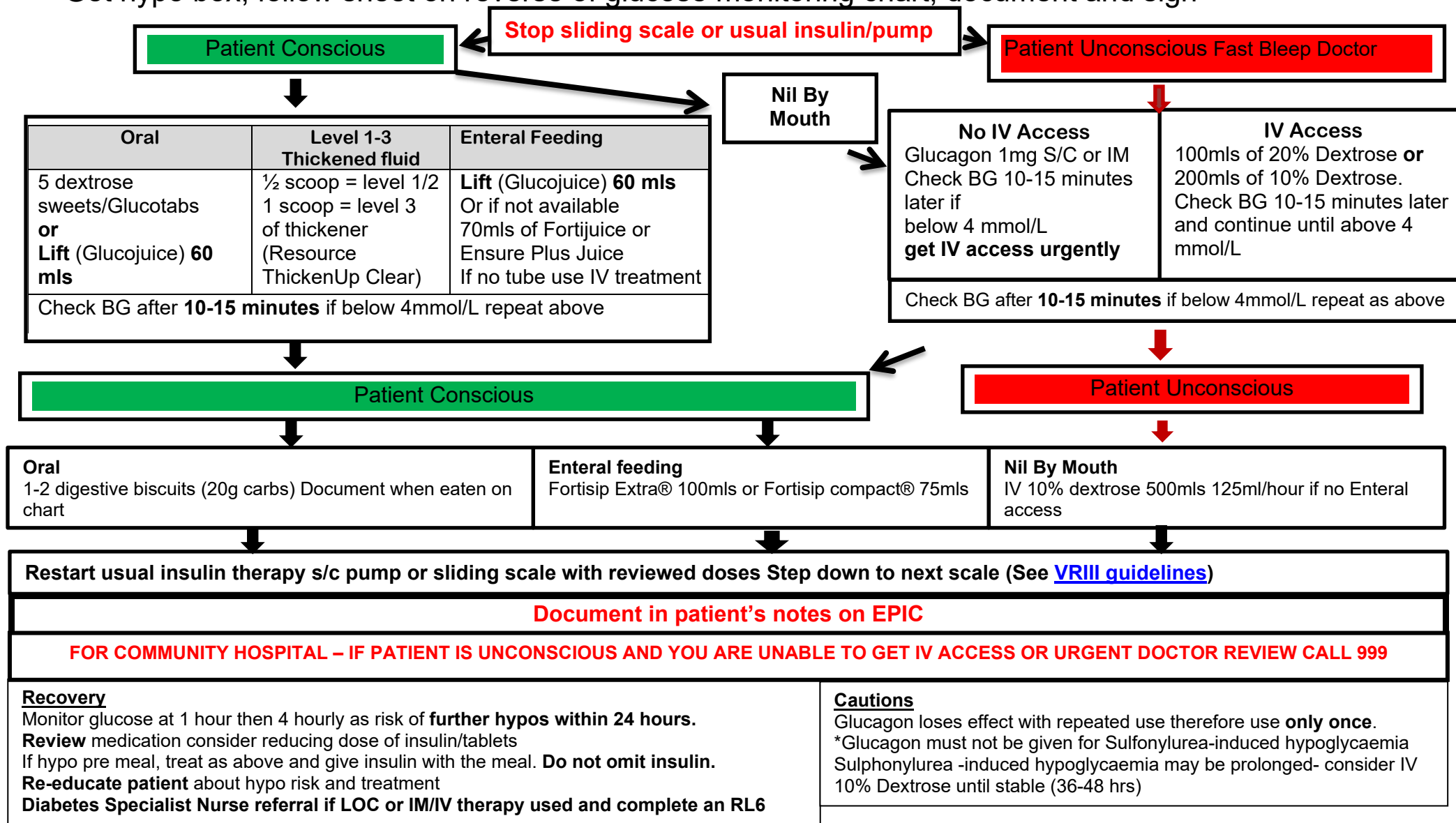
CBGL	Capillary Blood Glucose Level
CSII	Continuous subcutaneous insulin infusion
DKA	Diabetic Ketoacidosis
DSN	Diabetes Specialist Nurse
FPH	Frimley Park Hospital
GCS	Glasgow coma scale
Hypo	Hypoglycaemia
IM	Intramuscular
IV	Intravenous
LOC	Loss of Consciousness
NBM	Nil by Mouth
NG	Nasogastric
TPN	Total Parental Nutrition
VRII	Variable rate intravenous infusion
WPH	Wexham Park Hospital

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Summary Flowchart: Acute Hypoglycaemia management with/without Diabetes

Get hypo box, follow sheet on reverse of glucose monitoring chart, document and sign



1. PURPOSE

- 1.1 This guideline is predominantly for the management of hypoglycaemia in adults (aged 16 years or older) with diabetes mellitus admitted to all adult wards within the trust. A low blood sugar level is uncommon in people without diabetes but should also be considered and treated in the same way as people with diabetes, the possible causes of this will be discussed within these guidelines.
- 1.2 The guidelines have been designed to support doctors and nurses in the safe and effective management of adult patients in hospital who experience a hypoglycaemic event and to prevent recurrent episodes.

2. INTRODUCTION

Hypoglycaemia is a lower than normal level of blood glucose. For the purposes of people with/without diabetes who are hospital inpatients, any blood glucose less than 4.0mmol/L should be treated. It can be defined as “mild” if the episode is self-treated and “severe” if assistance by a third party is required. **Hypoglycaemia in patients without diabetes is rare but when recognised is associated with a high mortality rate** and should be treated in the same way as with diabetes, following the treatment guidelines.

It is important to remember:

- ✓ If the patient is peripherally shut-down, e.g., shock/hypotensive, hypothermic, dehydrated then the CBGL may appear falsely low.
- ✓ Some patients with long standing diabetes are completely asymptomatic with hypoglycaemia, this is impaired awareness of hypoglycaemia. (These levels may vary in certain situations such as pregnancy).
- ✓ The reduction in blood glucose level causes cerebral dysfunction at a level below 3 mmol/l, as the brain cannot function without a constant supply of glucose and oxygen. **Therefore, any blood glucose level below 4 mmol/l should be treated as a hypoglycaemic event, even if the patient is asymptomatic due to the risk of glucose level falling further.**

3. NON-DIABETES AND CRITICAL ILLNESS

This can be a common setting for hypoglycaemia, including sepsis and organ failure, due to activation of proinflammatory mediators and counter-regulatory hormones and increase glucose utilisation. This is usually associated with poor nutritional status and inadequate oral intake. Although commonly associated with insulin treated patients this can also occur in insulin naive patients that don't have a diagnosis of diabetes and is associated with an increase in mortality.

- Hypoglycaemia related to **Hepatic disease** is often seen when there has been a severe decline in liver function and is usually due to impaired gluconeogenesis and depletion of hepatic glycogen stores.
- **Renal failure** can be a common cause of hypoglycaemia with and without diabetes and is commonly multifactorial with decreased renal gluconeogenesis, reduced caloric intake, decreased renal clearance and decreased metabolism.

- Severe **Cardiac Failure** is thought to inhibit gluconeogenesis due to hepatic congestion alongside decreased glycogen stores from inadequate nutritional intake.
- **Alcohol induced hypoglycaemia** is usually associated with increased levels of Beta-hydroxybutyrate and low insulin c-peptide levels. Alcohol can blunt the response of growth hormone to hypoglycaemia, increase the insulin response to a glucose load resulting in postprandial hypoglycaemia.
- **Malnutrition** can be associated with hypoglycaemia due to limited substrates for gluconeogenesis and glycogenolysis. This is seen with eating disorders such as anorexia nervosa or severe starvation.

4. SYMPTOMS OF HYPOGLYCAEMIA

The symptoms of hypoglycaemia warn an individual of its onset and vary considerably between individuals. The signs and symptoms of acute hypoglycaemia may be divided into two main categories. Autonomic symptoms are generated by the activation of the sympatho-adrenal system and neuroglycopenic symptoms are the result of cerebral glucose deprivation. The brain is dependent on a continuous supply of circulating glucose as the substrate to fuel cerebral metabolism and to support cognitive performance.

The 11 most commonly reported symptoms were used to form the Edinburgh Hypoglycaemia Scale and are reproduced in the below table (Deary et al., 1993).

Table 1: Edinburgh Hypoglycaemia Scale

Autonomic	Neuroglycopenic	General malaise
Sweating	Confusion	Nausea
Palpitations	Speech difficulty	Headache
Shaking	Odd behaviour	
Hunger	Drowsiness	
	Incoordination	

5. RISK FACTORS FOR HYPOGLYCAEMIA

Table 2: Risk Factors for Hypoglycaemia

Medical issues	Lifestyle Issues
▪ Long duration of type 1 diabetes ▪ Impaired awareness of hypoglycaemia ▪ Lipohypertrophy at injection sites ▪ Impaired renal function (including those patients requiring renal replacement therapy) ▪ Strict glycaemic control ▪ Previous history of severe hypoglycaemia	• Increased exercise (relative to usual) • Irregular lifestyle • Alcohol • Increasing age • Early pregnancy • Breast feeding • No or inadequate blood glucose monitoring

▪ Duration of insulin therapy in type 2 diabetes ▪ Severe hepatic dysfunction ▪ Sepsis or severe infection ▪ Inadequate treatment of previous Hypoglycaemia ▪ Pancreatic tumours or insulinoma ▪ Terminal illness including end of life care ▪ Cognitive dysfunction/dementia ▪ Alcohol and alcohol related diseases ▪ Prescribing errors ▪ Administration errors including overdose of insulin	Reduced Carbohydrate intake/absorption ▪ Food malabsorption, e.g., Gastroenteritis, Coeliac disease ▪ Malnutrition due to reduced oral intake ▪ Bariatric surgery involving bowel resection
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6. MANAGEMENT OF HYPOGLYCAEMIA

- 6.1 All patients experiencing hypoglycaemia should be treated without delay. People experiencing hypoglycaemia require quick acting carbohydrate to return their blood glucose levels to the normal range.
- 6.2 The quick acting carbohydrate should be followed up by giving long acting carbohydrate either as a snack or as part of a planned meal once the glucose level is normalised.
- 6.3 Where it is safe to do so, a blood glucose measurement should be taken to confirm hypoglycaemia (especially if there is any suspicion that the person may also be under the influence of alcohol). If measurement is difficult (e.g., in a patient undergoing a seizure) then treatment should not be delayed.
- 6.4 After acute treatment, consideration should be given to whether the hypoglycaemia is likely to be prolonged, i.e. because of long acting insulin or sulfonylurea therapy; these patients may require frequent glucose monitoring or a continuous infusion of glucose to maintain blood glucose levels.
- 6.5 All areas should have **“Hypo” boxes which should be stocked with essential contents needed to treat Hypo** and this should be in a readily accessible area on the ward.
- 6.6 IM glucagon or IV glucose may be given under group directive which can be created on EPIC through the hypo panel when you select unconscious patient.
- 6.7 Healthcare professionals must work within their professional codes of conduct and within their own competencies.

7. HYPOGLYCAEMIA TREATMENT OPTIONS

7.1 Fast acting Glucose for oral administration

Preferred treatment:

5 dextrose tablets

Glucotabs / Dextrose tablets (ordered as “Lift” fast acting glucose chews or Dextroenergy) are ordered from NHS Supplies using order code AZB179.

OR

“Lift” fast acting glucose drink 60 mls

ordered from stores (EROS/NHS supplies).

DO NOT mix sugar/dextrose with milk as this slows the absorption rate of the glucose, thereby delaying recovery of the patient.

DO NOT add the glucose/sugar to a hot drink, as the patient will not be able to drink it quickly.

7.2 Parenteral treatment options: - Glucagon

1mg of glucagon IM

Repeated administration of glucagon is not advised, only 1% of people responded to a second injection of glucagon who had not responded to the first injection

May be less effective in patients prescribed sulfonylurea therapy or prolonged starvation periods

Glucagon will be less effective in those people with depleted glycogen reserves such as those with impaired hepatic function (i.e. people with an excessive alcohol consumption)

7.3 Parenteral treatment options: - IV Dextrose

IV infusion:

Give 200ml 10% glucose over 15 mins

(Available as 10% glucose 500ml solution for IV infusion (0.1g/ml))

Or

*Give 100ml of 20% glucose over 15 minutes

(Available as 20% glucose 100ml solution for IV infusion (0.2g/ml))

For the initial emergency management of hypoglycaemia, this may be administered via a burette giving set alone, if an infusion pump is not available. In all other situations, an infusion pump is required. With 10% glucose, care should be taken to ensure that the whole 500ml infusion is not inadvertently administered.

Infuse 10% glucose - peripherally via a secure cannula into a large vein or central access (preferred where available). If peripheral infusion continues for more than 24 hours change infusion site to minimise thrombophlebitis. Care should be taken to ensure that the whole 500ml infusion is not inadvertently administered.

Give 20% glucose - short term peripheral use via a secure cannula into a large vein is acceptable for the emergency management of hypoglycaemia with close monitoring of the infusion site for thrombophlebitis. Central access is preferred where available and is desirable if 20% infusion has to be continued after the initial dose.

** The entire 100ml infusion bottle should be hung to get this dose due to the dead space in the infusion set*

“Hypo box” contents should be checked after every use. It is the responsibility of the member of staff who uses any contents to replenish them after use.

The Hypo box checklist needs to be completed once weekly and if the secure tags remain in place to ensure it is complete and in date.

N.B. Chosen preparation of IV glucose should also be included or kept nearby with appropriate burette giving set.

N.B. Appropriate portable sharps disposal equipment should also be kept nearby.

7.4 Treatment of Hypoglycaemia

All adults with a blood glucose level less than 4.0mmol/L with or without symptoms of hypoglycaemia should be treated as outlined in this guideline.

In patients who are conscious and able to swallow, 15-20g of fasting acting carbohydrate is the treatment of choice (see flow chart).

Follow the other appropriate treatment algorithms for those unable to consume oral carbohydrate or require thickened fluids (see flow chart).

Adults who have poor glycaemic control may start to experience symptoms of hypoglycaemia above 4.0mmol/L. **So, adults who are experiencing hypoglycaemia symptoms but have a blood glucose level greater than 4.0mmol/L – treat with a small carbohydrate snack only, e.g., 1 medium banana, a slice of bread or normal meal if due.**

Many people with diabetes carry their own supplies of oral carbohydrate and should be supported to self-manage when capable and appropriate; this decision should be recorded in their hospital care plan. Patients capable of self-care should alert nursing staff that an episode of hypoglycaemia has occurred so that their management plan can be altered if necessary. Many episodes of hypoglycaemia are avoidable so every preventable measure should be taken.

Remember to create a 'hypo panel' on EPIC and document the hypoglycaemic event and treatment in EPIC to ensure the medical staff are made aware.

A. For Adults who are conscious, orientated and able to swallow follow the algorithm on the back of the glucose monitoring chart and sign when completed

- ✓ **Give** 15-20g quick acting carbohydrate of the patient's choice where possible. Some examples are:
 - 4-5 fasting acting glucose chew Lift tablets
 - 1 bottle (60ml) "Lift" fast acting glucose drink
 - 150-200ml pure fruit juice, e.g., orange

N.B. Patients following a low potassium diet (due to chronic kidney disease) should not use orange juice to treat hypoglycaemia due to its potassium content.

N.B. Sugar dissolved in water is not an effective treatment for patients taking acarbose as it prevents the breakdown of sucrose to glucose. It should also only be considered if no other treatment options are readily available.

- ✓ **Repeat** capillary blood glucose measurement 10-15 minutes later. If it is still less than 4.0mmol/L, repeat step 1 (no more than 3 treatments in total).

- ✓ **If blood glucose remains less than 4.0mmol/L after 30-45 minutes or 3 cycles, contact a doctor.**

- Give 200ml of 10% glucose over 15 minutes. Care should be taken with infusion. Refer to section 7 for instructions
- 1mg of glucagon IM (may be less effective in patients prescribed sulfonylurea therapy or under the influence of alcohol)

Once blood glucose is above 4.0mmol/L and the patient has recovered,

- ✓ **Give** a long acting carbohydrate of the patient's choice where possible, taking into consideration any specific dietary requirements. Supervise the patient and record when the carbohydrate has been consumed on the chart. Examples include:
 - Two biscuits
 - One slice of bread/toast
 - 200-300ml glass of milk (not soya or other forms of 'alternative' milk, e.g., almond or coconut)
 - Normal meal if due (must contain carbohydrate)

N.B. Patients given glucagon require a larger portion of long acting carbohydrate to replenish glycogen stores (double the suggested amount above) although nausea associated with glucagon injections may be an issue.

DO NOT omit insulin injection if due. (However, insulin regimen review may be required).

- Patients who self-manage their insulin pumps (CSII) will not need a long acting carbohydrate but should take initial treatment as outlined and adjust their pump settings appropriately.
- If the hypoglycaemia was due to sulfonylurea or long acting insulin therapy then be aware that the risk of hypoglycaemia may persist for up to 24-36 hours following the last dose, especially if there is concurrent renal impairment. Refer to treatment algorithm F.

Document event on EPIC within patient's notes. Ensure regular 2-4 hourly capillary blood glucose monitoring is continued or at least 24 to 48 hours. Ask the patient to continue this at home if they are to be discharged. Give hypoglycaemia education or refer to Diabetes Inpatient Team.

For FPH- send diabetes referral via EPIC or if urgent bleep 5250

For WPH – send diabetes referral via EPIC, if urgent contact on DSN mobile 07776225313

- ✓ Ensure contents of hypo box is replenished.

B. Adults who are conscious but confused, disorientated, unable to cooperate or aggressive but are able to swallow

If the patient is capable and cooperative, follow section A in its entirety.
Give 200ml 10% glucose over 15 mins (Available as: 10% glucose 500ml solution for IV infusion (0.1g/ml)) Or Give 100ml of 20% glucose over 15 minutes (Available as: 20% glucose 100ml solution for IV infusion (0.2g/ml))
If no IV access, Give 1mg of glucagon IM
✓ Repeat capillary blood glucose measurement 10-15 minutes later. If it is still less than 4.0mmol/L, repeat step 1 (no more than 3 treatments in total and only give IM glucagon once).
If blood glucose level remains less than 4.0mmol/L after 30-45 minutes, contact a doctor
Once blood glucose is above 4.0mmol/L and the patient has recovered, ✓ Give a long acting carbohydrate of the patient's choice where possible, taking into consideration any specific dietary requirements. Examples include: • Two biscuits • One slice of bread/toast • 200-300ml glass of milk (not soya or other forms of 'alternative' milk, e.g. almond or coconut) • Normal meal if due (must contain carbohydrate) <i>N.B. Patients given glucagon require a larger portion of long acting carbohydrate to replenish glycogen stores (double the suggested amount above) although nausea associated with glucagon injections may be an issue.</i> <i>N.B. Patients who self-manage their insulin pumps (CSII) may not need a long acting carbohydrate but should take initial treatment, continue their pump and assess for the cause of the episode.</i>
DO NOT omit insulin injection if due. (However, insulin regimen review may be required)
Patient who self-manage their insulin pumps (CSII) may not need a long acting carbohydrate but should take initial treatment as outlined and adjust their pump settings appropriately.
If the hypoglycaemia was due to sulfonylurea or long acting insulin therapy then be aware that the risk of hypoglycaemia may persist for up to 24-36 hours following the last dose, especially if there is concurrent renal impairment. Refer to section F
Document event in patient's notes. Ensure regular 2-4hrly capillary blood glucose monitoring is continued for at least 24 to 48 hours. Ask the patient to continue this at home if they are to be discharged. Give hypoglycaemia education or refer to Diabetes Inpatient Team. For FPH- send diabetes referral via EPIC or if urgent bleep 5250 For WPH – send diabetes referral via EPIC, if urgent contact on DSN mobile 07776225313 ✓ Ensure contents of hypo box is replenished.

C. Adults who are unconscious and/or having seizures and/or are very aggressive

1) Check - Breathing - Airway and give oxygen - Circulation - Disability (including GCS and blood glucose) - Exposure (including temperature)
2) If the patient has an insulin infusion in situ, stop immediately . - Request immediate assistance from medical staff by "fast bleep" a doctor (Frimley Park, Wexham Park, Heatherwood) - If this occurs in a community hospital, e.g., Fleet/Farnham hospital and no IV access or doctor is available call 999
3) i. If IV access available, give 100ml of 20% glucose over 15 minutes (i.e., 400ml/hr) through a standard giving set. If an infusion pump is available use this, but if not readily available the infusion should not be delayed (see section 7 for administration details). Repeat capillary blood glucose measurement 10-15 minutes later. If it is still less than 4.0mmol/L, repeat (no more than 3 treatments in total and only give IM glucagon once). ii. If no IV access is available then give 1mg glucagon IM. Glucagon 1mg IM may be less effective in patients prescribed sulfonylurea therapy and may take up to 15 minutes to take effect. Glucagon mobilises glycogen from the liver and will be less effective in those who are chronically malnourished (including those who have had a prolonged period of starvation), abuse alcohol or have severe liver disease. In this situation IV glucose is the preferred option.
4) Once blood glucose is above 4.0mmol/L and the patient has recovered, ✓ Give a long acting carbohydrate of the patient's choice where possible, taking into consideration any specific dietary requirements. Examples include: • Two biscuits • One slice of bread/toast • 200ml glass of milk (not soya or other forms of 'alternative' milk, e.g., almond or coconut) • Normal meal if due (must contain carbohydrate) <i>N.B. Patients given glucagon require a larger portion of long acting carbohydrate to replenish glycogen stores (double the suggested amount above) although nausea associated with glucagon injections may be an issue.</i> <i>N.B. Patients who self-manage their insulin pumps (CSII) may not need a long acting carbohydrate but should take initial treatment, continue their pump and assess for the cause of the episode.</i>
5) DO NOT omit insulin injection if due (However, insulin regimen review may be required).
6) If the patient was on IV insulin, continue to check blood glucose every 15 minutes until above 4.0 mmol/L. If on Fixed rate insulin and ketones have cleared , then change to variable rate infusion (VRIII). However, if ketones are not cleared , then re-start fixed rate IV insulin (reducing rate as per DKA guidelines) and consider concurrent IV 10% glucose infusion at 100ml/hr as per DKA guidelines. If patient on VRIII, STEP DOWN to the next scale when iv insulin is restarted, i.e., if using Scale B then step down to Scale A. If recurrent hypos on Scale A either downgrade the scale further in the customised section along with 5% glucose at 125ml/hr.
Document event on EPIC in patient's notes. Ensure 2 – 4hrly regular capillary blood glucose monitoring is continued for at least 24 to 48 hours. Ask the patient to continue this at home if they are to be discharged. Give hypoglycaemia education or refer to Diabetes Inpatient Team. For FPH- send diabetes referral via EPIC or if urgent bleep 5250 For WPH – send diabetes referral via EPIC, if urgent contact on DSN mobile 07776225313 ✓ Ensure contents of hypo box is replenished.

D. Adults who are 'Nil by Mouth'

DO NOT put anything into their mouth due to the high risk of choking. FHFT does not use GlucoGel™ in adult patients (formerly called Hypostop™) and so it is not available in the Hypo boxes. It is considered less suitable for use in a hospital setting as there are concerns that it may be administered to semi-conscious patients when a choking hazard may exist. In these patients, administration of IV glucose or IM glucagon in line with the guidance in this document should be followed. If the hypoglycaemia was due to sulfonylurea or long acting insulin therapy then be aware that the risk of hypoglycaemia may persist for up to 24-36 hours following the last dose, especially if there is concurrent renal impairment.

E. Adults who require thickened fluid

If the patient is known to have difficulty with swallowing and require thicker than a level 0 for the 'Lift' hypo treatment

- ½ scoop of thickener (resource ThickenUp Clear) added to the 60 mls of 'Lift' will become level 2 thickened fluid. This will be appropriate for patients who require level 1 or 2 thickened fluid.
- 1 scoop of thickener (resource ThickenUp Clear) added to the 60 mls of 'Lift' will become level 3 thickened fluid. This will be appropriate for patients who require level 3 thickened fluid.
- If greater than a level 3 is required, avoid the use of oral hypoglycaemic treatment and use alternative IM/IV treatment.

F. Adults requiring enteral/parenteral feeding

All Patients with known or new onset diabetes requiring total parenteral nutrition (TPN) should be referred to a dietitian/nutrition team and diabetes team for individual assessment.

Risk factors for hypoglycaemia

- Blocked/displaced tube
- Change in feed regimen
- Enteral feed discontinued
- TPN or IV glucose discontinued
- Diabetes medication administered at an inappropriate time to feed
- Changes in medication that cause hyperglycaemia e.g. steroid therapy reduced/stopped
- Feed intolerance
- Vomiting
- Deterioration in renal function
- Severe hepatic dysfunction

Treatment – To be administered **via Enteral feeding tube**

Do not administer these treatments via a TPN line

In patients receiving TPN, treatment should be administered orally or intravenously as appropriate.

- 1) – 1 bottle (60ml) Lift fast acting glucose drink or
– 70ml Fortijuce® or 70 mls of Ensure Plus Juice (**not Fortisip extra/compact or Ensure Plus/Compact**)
– Re-start feed to rapidly deliver 15 – 20g carbohydrate

N.B. All treatments should be followed by a 50ml water flush of the feeding tube to prevent tube blockage.

2) Repeat capillary blood glucose measurement 10 to 15 minutes later. If it is still less than 4.0mmol/L, repeat step 1 (no more than 3 treatments in total).

3) If blood glucose remains less than 4.0mmol/L after 30-45 minutes (or 3 cycles), consider 200ml of 10% glucose administered intravenously over 15 minutes. Care should be taken with infusion pump settings if larger volume bags are used to ensure that the whole bag is not inadvertently administered.

4) Once blood glucose is above 4.0mmol/L and the patient has recovered:

- Restart feed
 - If bolus feeding and feed is not due to be restarted, give 75ml bolus of Fortisip Compact Protein or Ensure compact or 100mls Fortisip Extra®
- This will prevent the blood glucose from falling again due to the short action of the glucose – approx. 1 hour.

5) **DO NOT omit insulin injection if due** (However, insulin regime review may be required).

6) If the hypoglycaemia was due to sulfonylurea or long acting insulin therapy then be aware that the risk of hypoglycaemia may persist for up to 24-36 hours following the last dose, especially if there is concurrent renal impairment.

7)) Document event on EPIC in patient's notes. Ensure regular 2 - 4 hourly capillary blood glucose monitoring is continued for at least 24 to 48 hours. Ask the patient to continue this at home if they are to be discharged. Give hypoglycaemia education or refer to Diabetes Inpatient Team.

For FPH- send diabetes referral via EPIC or if urgent bleep 5250

For WPH – send diabetes referral via EPIC, if urgent contact on DSN mobile 07776225313

- ✓ Ensure contents of hypo box is replenished.

G. Sulphonylurea Induced Hypoglycaemia

Initially give 100 ml 20% intravenous Dextrose or 200mls of 10% Dextrose. Then consider IV 10% Dextrose infused at a rate of 125ml an hour usually for 4 hours, or until blood glucose above 10 mmol/l. Then consider IV 5 -10% Dextrose. Recurrent hypos can last for 36 to 48 hours.

When hypoglycaemia has been successfully treated

Identify the risk factor or cause resulting in hypoglycaemia (see Table 2).

Take measures to avoid hypoglycaemia in the future. Unless the cause is easily identifiable and both the nursing staff and patient are confident that steps can be taken to avoid future events, a medical or DSN review should be considered. If the hypoglycaemia event was severe or recurrent, or if the patient voices concerns, then a review is indicated. Send a referral via EPIC for the Inpatient Diabetes Team to review.

DO NOT omit the next insulin injection or start variable rate intravenous insulin infusion to 'stabilise' blood glucose. If unsure of subsequent diabetes treatment, discuss with the diabetes team/DSN, e.g., it may be safe to omit a mealtime bolus dose of rapid acting insulin if the patient is declining food and has taken their usual basal insulin.

- Medical team to review and if appropriate consider reducing the dose of insulin or sulphonylurea prior to the time of previous hypoglycaemia events. This is to prevent further hypoglycaemia episodes occurring.
- **DO NOT** treat isolated spikes of hyperglycaemia with 'stat' doses of rapid acting insulin. Instead maintain regular capillary blood glucose monitoring and adjust normal insulin regimen only if a pattern emerges.

8. Education and Training

8.1 Ward Sister and Matron to ensure **all staff** complete the "Hypoglycaemia Management" training.

This can be accessed via **online learning platform** <https://learning.fhft.nhs.uk/#/login>

1. Select and click "Chronic and Life-threatening conditions" from Course categories
2. select Hypoglycaemia management

There are two courses

Complete Level 1 – If you are not involved in prescribing and administration of drugs

Complete Level 2 - If you prescribe and administer drugs

8.2 To raise a hypo panel on EPIC

1. Ensure that glucose results are ordered correctly in EPIC under ORDERS
2. Once the result entered, if the result is within hypoglycaemic range (<4mmols), it will provide a prompt for you follow.

If this does not appear you can place an ORDER via the hypoglycaemic panel.

To place an ORDER, write 'hypo' in the order panel and follow the steps.

9. Monitoring / Audit

The link nurses should coordinate with ward staff to complete the weekly auditing of contents of the hypo box.

References

All guidance has been adapted from the JBDS “The Hospital Management of Hypoglycaemia in Adults with Diabetes Mellitus guidelines”.

https://abcd.care/sites/abcd.care/files/site_uploads/JBDS_Guidelines_Current/JBDS_01_Hypo_Guideline_January_2023.pdf

Ian J Deary, John R Crawford, David A Hepburn, Sarah J Langan, Louise M Blackmore, Brian M Frier; Severe Hypoglycemia and Intelligence in Adult Patients With Insulin-Treated Diabetes. *Diabetes* 1 February 1993; 42 (2): 341–344. <https://doi.org/10.2337/diab.42.2.341>

Full version control record

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This guideline has been registered with the trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt contact a senior colleague or expert. Caution is advised when using guidelines after the review date. This guideline is for use in Frimley Health Trust hospitals only. Any use outside this location will not be supported by the Trust and will be at the risk of the individual using it.

Version Control Sheet

Version	Date	Guideline Lead(s)	Status	Comment
5.0	April 2017	Claire Henke Emma Bingham	Final	Final Cross site guideline updated to include community hospitals
6.0	July 2019	Claire Henke Dr Emma Bingham	Final	Minor change to note that Fortisip and Fortisip extra are used at FPH, while Ensure plus and Ensure compact are used at WPH
7.0	March 2021	Claire Henke, Dr Emma Bingham, Dr Rajashree Baburaj, Adela Dragan	Final	Adapted to new guidelines format and cross site agreement. Glucose fast acting changed to Lift
7.1	June 2021	Guideline team	Interim	Change of location for e-learning
8.0	January 2023	Claire Henke Rasha Mukhtar	Final	Updated guidelines - amendment for thickening 'Lift' for patients with swallowing difficulties and amendment hypoglycaemia with non-diabetes
8.1	Sept 2024	Aish Chalise, DSN	Interim	Section 7.1 updated with new FPH ordering process.

Related Documents

Document Type	Document Name
Guideline	Managing continuous subcutaneous insulin infusion (CSII, or "insulin pump") therapy in hospitalised patients