



Document Title:	HAAD Standard for diagnosis and management of Childhood Diabetes		
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Applies to:	Healthcare Facilities and Professionals licensed by HAAD in the Emirate of Abu Dhabi		
Classification:	☉ Public		

## 1. Purpose

- 1.1 This standard mandates the clinical care and service specifications for the diagnosis and management of children with diabetes, and specifies the clinical care pathway to follow to ensure that children with diabetes receive quality and safe care, treatment and ongoing management.

## 2. Scope

- 2.1 This standard applies to all Healthcare Facilities and Professionals licensed by HAAD in the Emirate of Abu Dhabi.
- 2.2 It refers to the diagnosis, initial treatment and management of type I and type II diabetes mellitus in children (less than 18 years of age).

## 3. Duties for Healthcare Providers

- 3.1 All healthcare providers, including healthcare facilities and professionals, licensed by HAAD and engaged in providing clinical diagnosis, care and management services for children with diabetes must:
- 3.1.1 Provide clinical services in accordance with the requirements of this Standard, and the relevant HAAD clinical care standards and ensure their practices are consistent with the care pathway specified in this Standards, and where necessary with relevant internationally recognised evidence based clinical care pathways;
- 3.1.2 when providing diagnosis for diabetes in children, primary healthcare centres and facilities ensure that they follow the requirements specified in **Section 5** of this Standard and the care pathway at **Appendix 1**;
- 3.1.3 for diagnostic and laboratory testing services ensure that:
- 3.1.3.1 If diagnostic and laboratory test services are conducted by the same facility providing the diagnosis and clinical care, the facility has in place the systems, policies and operating procedures for clinical laboratory services in accordance with the requirements of the HAAD Clinical Laboratory Standards;
- 3.1.3.2 if diagnostic and laboratory test services are outsourced, the diagnosis and clinical care provider seeks such services from a HAAD Licensed laboratory facility that demonstrates compliance with the requirements of the HAAD Clinical Laboratory Standards; and

- 3.1.3.3 report and submit data to HAAD via *e-claims* in accordance with the HAAD *Reporting of Health Statistics Policy* and as set out in the HAAD Data Standards and Procedures (found online at [www.haad.ae/datadictionary](http://www.haad.ae/datadictionary));
- 3.1.4 comply with HAAD policies and standards on managing patient medical records, including developing effective recording systems, maintaining patient records, maintaining confidentiality, privacy and security of patient information and educating patients and fulfilling the requirements of patient consent and patients' rights and responsibilities charter; and
- 3.1.5 Comply with HAAD requests to inspect and audit records and cooperate with HAAD authorised auditors, as required for inspections and audits by HAAD.

#### 4. Enforcement and Sanctions

- 4.1 Healthcare providers, payers and third party administrators must comply with the terms and requirements of this Standard, the HAAD Standard Contract and the HAAD Data Standards and Procedures. HAAD may impose sanctions in relation to any breach of requirements under this standard in accordance with the [HAAD Policy on Inspections, Complaints, Appeals and Sanctions].

#### 5. Standard 1- Clinical Services

- 5.1 All HAAD licensed healthcare facilities in Abu Dhabi, including primary healthcare centres and facilities may provide services to diagnose and manage paediatric diabetes patients provided they meet the following requirements:

- 5.1.1 Outpatient and Primary healthcare providers must:

- 5.1.1.1 Limit their clinical services for childhood diabetes only to diagnosing diabetes in children in accordance with the care pathway at **Appendix 1**;

- 5.1.1.2 Ensure that primary care physicians providing clinical diagnosis of childhood diabetes have completed appropriate training, including CME training in support of this Standard;

- 5.1.1.3 When performing fasting glucose and/or oral glucose tolerance testing (OGTT) at the facility, the primary care physician supervises the testing and that appropriate staffing and care management resources and system support are available to manage emergency situations that may arise. Primary care physicians are encouraged to consult paediatric endocrinologist or pediatrician with specialist interest in diabetes;

- 5.1.1.4 Immediately refer children (same day) suspected and/or confirmed to be diabetic to paediatric endocrinologist or pediatrician with specialist interest in diabetes as detailed in **Appendix 1**;

- 5.1.1.5 Immediately refer children with suspected DKA and give initial treatment in accordance with **Appendix 2** including care pathway (algorithm); and

- 5.1.1.6 In the school clinic setting manage diabetic children in accordance with **Appendices 4 a, b and c** as appropriate.

- 5.1.2 Inpatient healthcare providers must:

- 5.1.2.1 Provide the full spectrum of clinical services for childhood diabetes following the care pathway provided at **Appendix 1** and including diagnosis, care and management services in accordance with **Appendices 2 and 3**;

- 5.1.2.2 Ensure that children with diabetes referred to their facility receive same day inpatient care, including further clinical testing if necessary, and treatment coordinated through a multidisciplinary team comprised of paediatric endocrinologist or pediatrician with specialist interest in diabetes, diabetic educator (preferably children's), dietitian, child psychologist and social worker (preferably children's);

- 5.1.2.3 Communicate findings to the child's parents or guardian and ensure that plans for ongoing care including treatment, management and follow up (**Appendix 3**) is shared with the child's parents or responsible guardian; and
- 5.1.2.4 Ensure that treatment and care management are supervised by the paediatric endocrinologist or pediatrician with specialist interest in diabetes. If considering delegating care management and follow up to a primary care physician (such as in cases to support patient convenience and/or limited access to inpatient care facilities due to remoteness of services), the paediatric endocrinologist or pediatrician with specialist interest in diabetes must ensure that:
  - 5.1.2.4.1 Delegation of care is made only to a primary care physician who has appropriate training, including CME training in support of this Standard;
  - 5.1.2.4.2 The primary care physician consults with and informs the delegating paediatric endocrinologist or pediatrician with specialist interest in diabetes of the progress and health outcomes of the diabetic child patient on regular basis; and
  - 5.1.2.4.3 He/she assesses the diabetic child patient health outcomes regularly, and communicates changes in treatment and care management to the primary care physician, as necessitated by the diabetic child's health needs.

## **6 Standard 2- Service Specifications**

- 6.1 **Healthcare Facilities** providing diagnosis, treatment and care management for childhood diabetes must:
  - 6.1.1 Be licensed by HAAD;
  - 6.1.2 Offer diagnosis, treatment and care management for childhood diabetes services over a flexible range of hours throughout the day, including evening and weekend services to ensure adequate access to screening services;
- 6.2 **Healthcare professionals** - The licensed Healthcare facility must provide that:
  - 6.2.1 All healthcare professionals are licensed by HAAD;
  - 6.2.2 The service is provided (or supervised) by a HAAD licensed physician;
  - 6.2.3 All healthcare professionals practise within the specified scope of services of their facility, and the and the job duties assigned to them by their employing facility;
  - 6.2.4 Healthcare professionals responsible for treating patients without immediate qualified supervision (such as physicians):
    - 6.2.4.1 Apply for privileges to be assigned to them by the employing facility;
    - 6.2.4.2 After privileges have been assigned, carry out their professional activities within the scope of the granted privileges; and
    - 6.2.4.3 Ensure they are operating within their competence at all times.
- 6.3 **Patient Education** - the provider must deliver a culturally and socially relevant patient education and information regarding the diagnosis and follow up treatment and care management, consistent with the relevant HAAD policies. In particular, all children diagnosed with diabetes, their families and carers, must receive education on diabetes adapted to the individual's age, stage of diabetes, maturity and lifestyle. Diabetes education must be delivered immediately after the diagnosis and before discharge to home, and must include as a minimum material to support:
  - 6.3.1 understanding of diabetes and the stages of diabetes;
  - 6.3.2 information on diet and exercise and their effect on blood sugar levels;
  - 6.3.3 survival skills including insulin injection and glucose monitoring techniques;
  - 6.3.4 interpretation of glucose levels in relation to target range;
  - 6.3.5 recognition and treatment of hypoglycemia and hyperglycemia;

- 6.3.6 the role of insulin management (types, doses, timing);
- 6.3.7 sick day management; and
- 6.3.8 Urgent situation management.

6.4 **Patient Consent** – the treating physician is responsible for obtaining the child’s parents or responsible guardian’s consent for diagnosis and care management, as applicable, in accordance with the HAAD Consent Policy.

## **7 Payment mechanism under the Health Insurance Scheme**

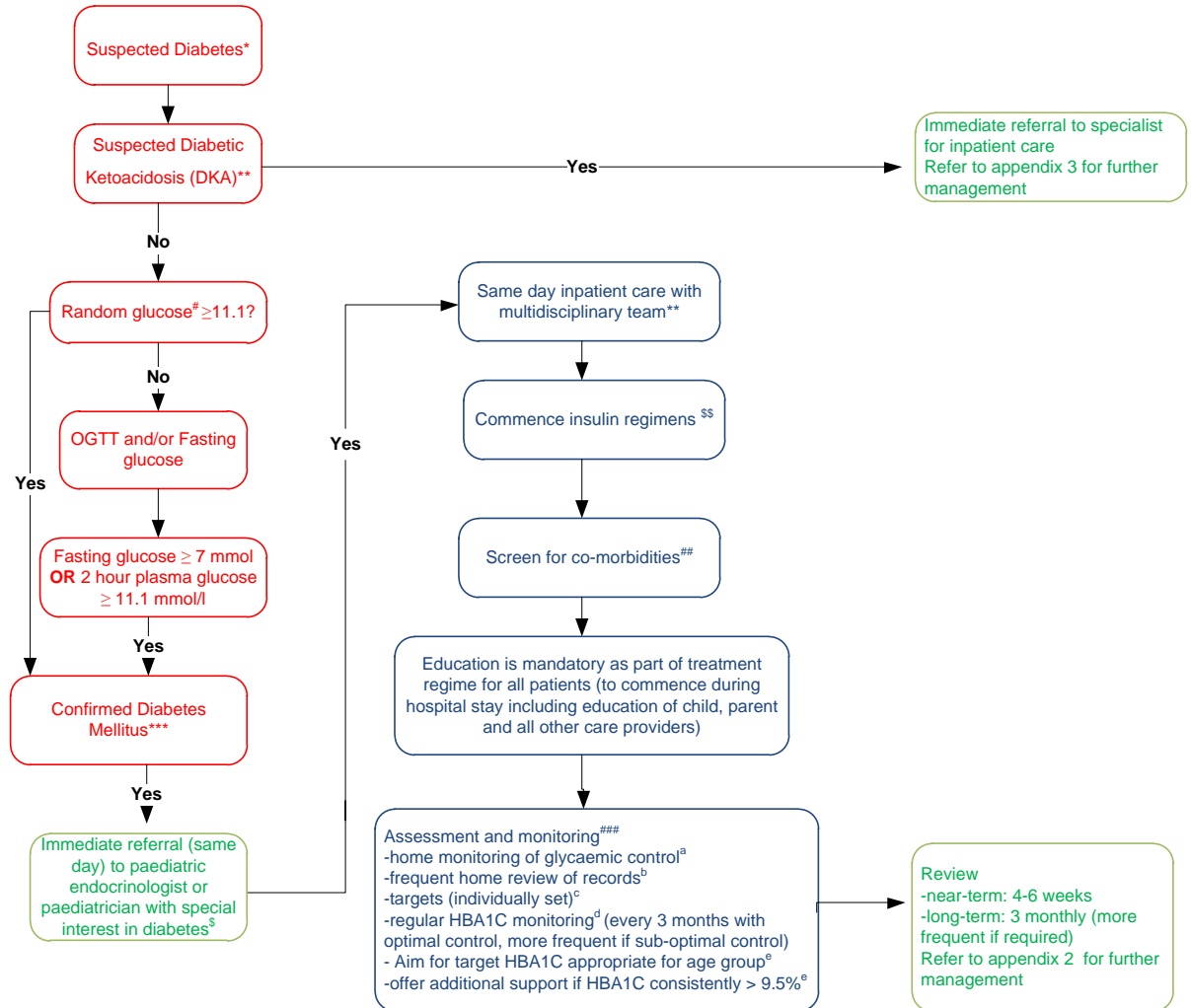
7.1 The costs of childhood diabetes diagnosis and management are covered by the Thiqa Health Insurance scheme for UAE Nationals.

7.2 For non-Nationals, coverage is under their health insurance plan, however is subject to plan terms and conditions.

7.3 Coding for childhood diabetes diagnosis, management and related services must be done using the codes classification defined in the Coding Manual published by the HAAD Clinical Coding Steering Committee available at [www.shafafiya.org](http://www.shafafiya.org), and in compliance with e-claim requirements.

7.4 Charges for childhood diabetes diagnosis, management and related services must be in accordance with the Standard Provider Contract negotiated rates, and in compliance with Mandatory Tariff pricelist and HAAD Claims and Adjudication Rules.

# Appendix 1: HAAD care pathway for diagnosis and initial management of diabetes mellitus in children



\*SUSPECTED DIABETES IF: SYMPTOMS OF DIABETES ○ POLYURIA ○ POLYDIPSIA ○ WEIGHT LOSS

\*\*DKA DIAGNOSTIC CRITERIA: ○ HYPERGLYCEMIA (BLOOD GLUCOSE > 11.1 MMOL/L), ○ VENOUS PH < 7.3 OR BICARBONATE < 15 MMOL/L, ○ KETONEMIA OR KETONURIA.

###DEFINITION OF RANDOM GLUCOSE: BLOOD GLUCOSE SAMPLE TAKEN AT ANY TIME OF DAY WITHOUT REGARD FOR TIME SINCE LAST MEAL

\*\*\* OTHER INVESTIGATIONS TO SUPPORT DIAGNOSIS OF DIABETES INCLUDING HBA1C

###MULTIDISCIPLINARY TEAM SHOULD INCLUDE: PAEDIATRIC ENDOCRINOLOGIST OR PAEDIATRICIAN WITH AN INTEREST IN DIABETES ○ DIABETIC EDUCATOR ○ DIETITIAN ○ CHILD PSYCHOLOGIST ○ SOCIAL WORKER (PREFERABLY CHILD'S)

## CO-MORBIDITIES INCLUDE: THYROID DISEASE ○ CAELIAC DISEASE

§§ INSULIN REGIMENS: INSULIN TREATMENT MUST BE STARTED IMMEDIATELY AFTER DIAGNOSIS TO AVOID METABOLIC DECOMPENSATION AND DIABETIC KETOACIDOSIS ○ INSULIN DOSES OF 0.3 - 0.6 U/KG/DAY IS RECOMMENDED AT PRESENTATION ○ AN INITIAL LOWER DOSE IS ADVISABLE FOR YOUNG CHILDREN AND HIGHER DOSES ARE CONSIDERED FOR OLDER CHILDREN ESPECIALLY IF KETONES ARE PRESENT ○ AIM FOR APPROPRIATE INSULIN LEVELS THROUGHOUT THE 24 HOUR PERIOD TO COVER BASAL REQUIREMENTS AND HIGHER LEVELS OF INSULIN IN AN ATTEMPT TO MATCH THE GLYCAEMIC EFFECT OF MEALS

§§§DIABETES EDUCATION: ○ DIABETES EDUCATION SHOULD BE 1. ADAPTABLE AND PERSONALISED TO THE INDIVIDUAL'S AGE, STAGE OF DIABETES, MATURITY AND LIFESTYLE, 2. CULTURALLY SENSITIVE 3. AT A PACE TO SUIT INDIVIDUAL NEEDS.

###ASSESSMENT AND MONITORING OF GLYCAEMIC CONTROL: A) MONITORING OF GLYCAEMIC CONTROL INCLUDES DAILY MONITORING OF GLUCOSE AT HOME AS WELL AS PERIODIC MONITORING OF OVERALL GLYCEMIA, INITIALLY FOUR TIMES PER DAY ○ MEASUREMENT OF GLYCAEMIC CONTROL IS BEST DETERMINED BY SELF-MONITORING OF BLOOD GLUCOSE AS THIS PROVIDES DOCUMENTATION OF HYPERGLYCEMIA AND HYPOGLYCEMIA, ALLOWING IMPLEMENTATION OF STRATEGIES TO OPTIMALLY TREAT, AND AVOID ABNORMAL GLUCOSE VALUES

B) FREQUENT HOME REVIEW OF RECORDS TO IDENTIFY PATTERNS IN GLYCAEMIC LEVELS AND SUBSEQUENT ADJUSTMENT IN DIABETES MANAGEMENT ARE REQUIRED FOR SUCCESSFUL INTENSIFIED DIABETES MANAGEMENT ○ EACH CHILD SHOULD HAVE THEIR TARGETS INDIVIDUALLY DETERMINED WITH THE GOAL OF ACHIEVING A VALUE AS CLOSE TO NORMAL AS POSSIBLE WHILE AVOIDING SEVERE HYPOGLYCEMIA AS WELL AS FREQUENT MILD TO MODERATE HYPOGLYCEMIA ○ TARGET INDICATORS OF OPTIMAL GLYCAEMIC CONTROL: FASTING / PREPRANDIAL 5-8MMOL/L; POSTPRANDIAL 5-10 MMOL/L; BEDTIME 6.7-10 MMOL/L; NOCTURNAL 4.5-9 MMOL/L D) AIM FOR HBA1c < 8.5 IF 0-6 YEARS OF AGE; HBA1c < 8 IF 6-12 YEARS OF AGE; HBA1c < 7.5 IF 13 - 19 YEARS OF AGE ○ ELEVATED HbA1c PREDICTS LONG-TERM MICROVASCULAR AND MACROVASCULAR OUTCOMES ○ MEASURE HBA1c FOUR TIMES PER YEAR OR MORE FREQUENT IF GLYCEMIC CONTROL IS SUBOPTIMAL OR POOR E) AIMING FOR LOW HBA1c INCREASES THE RISK OF HYPOGLYCAEMIA BUT HIGH HBA1c INCREASES THE RISK OF LONG TERM MICROVASCULAR AND MACROVASCULAR COMPLICATIONS

HAAD STANDARDS FOR DIAGNOSIS, MANAGEMENT AND DATA REPORTING FOR DIABETES: [HTTP://WWW.HAAD.AE/HAAD/PORTALS/0/STANDARD%20FOR%20DIABETES%20CARE-UPDATED-OCT.PDF](http://www.haad.ae/haad/portals/0/standard%20for%20diabetes%20care-updated-oct.pdf)

## REFERENCES:

1. NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE (NICE). TYPE 1 DIABETES: DIAGNOSIS AND MANAGEMENT OF TYPE 1 DIABETES IN CHILDREN, YOUNG PEOPLE AND ADULTS. CLINICAL GUIDELINE 15. LONDON NICE: JULY 2004
2. INTERNATIONAL SOCIETY FOR PAEDIATRIC AND ADOLESCENT DIABETES (ISPAD) GUIDELINES 2009
3. AMERICAN DIABETES ASSOCIATION GUIDELINES 2011
4. AMERICAN COLLEGE OF ENDOCRINOLOGY GUIDELINES FOR GLYCEMIC CONTROL, ENDOCR PRACT. 2002;8 (SUPPL 1)
5. DIABETES CARE JOURNAL, VOLUME 34, SUPPLEMENT 1, JANUARY 2011

## Appendix 2 Diagnosis and management of diabetic ketoacidosis in children and adolescents

### Definition:

DKA is a life threatening metabolic disorder that results from insulin deficiency. It is commonly seen in children with type 1 diabetes (T1D) either as the first presentation, or later on. Patients with type 2 diabetes (T2D) may also present with DKA but far less common than those with T1D.

DKA always indicates a state of insulin deficiency, either because of non-compliance (majority of cases) or because of illnesses that increase insulin requirements. DKA should be identified promptly and treated correctly to avoid complications such as electrolytes abnormalities and cerebral edema.

### Diagnosis:

DKA is diagnosed with the following laboratory criteria:

- 1- Hyperglycemia (>200 mg/dl or 11 mmol/L)
- 2- Acidosis (PH<7.30, or bicarbonate <15 mEq/L)
- 3- Ketosis (positive urine or serum ketone)

Clinical symptoms are polyuria, polydipsia and dehydration in early phase, nausea, vomiting, abdominal pain, headache and Kussmaul breathing. Deteriorated level of consciousness is seen in more advanced conditions.

### Evaluation:

Detailed H&P, body surface area calculation, neurologic evaluation, type and dose/s of insulin taken before coming to ER.

### Laboratory studies:

- CBC
- Finger stick blood glucose
- Electrolytes, BUN, creatinine, anion gap, Ca and P.
- Blood gases
- $\beta$ -hydroxybutyrate (or urine ketone)
- HbA1C.
- For new onset patients, consider drawing islet cell antibodies, insulin auto antibodies and anti-GAD antibodies.
- Other labs as clinically indicated.

### Management:

- Cases with severe acidosis or altered mental status should always be admitted to the ICU.
- Patient must be NPO.

#### I- Fluid:

- a. Give an initial bolus of 10-20cc/kg of NS or LR over 30-60 minutes. ***Repeated boluses should be avoided unless patient is hemodynamically unstable.***
- b. Subsequent fluid should be calculated to rehydrate the patient over 48 hours. Since the clinical accurate assessment of the severity of dehydration is difficult and frequently is under- or over estimated, fluid administered should not exceed 2 times the usual daily maintenance requirement as calculated per weight or body surface area. For simplicity, the following table sub-categorizes DKA into three levels, and lists the ***estimated*** fluid deficit for each level:

Level of DKA	Mild	Moderate	Severe
PH	<7.30	<7.20	<7.10
Fluid Deficit	5%	5-7%	7-10%

- c. The preferred fluid is 0.9% saline or Ringer's lactate for the first few hours, and then 0.45 NS thereafter. K<sup>+</sup> should be added to the IVF as explained in the next paragraph.
- d. Urine losses should not be considered in the calculation of fluid replacement.

**II- Potassium (K<sup>+</sup>):**

- a. Due to the risk of hypokalemia after the initiation of insulin infusion, special attention should be paid to K<sup>+</sup> level and its replacement.
- b. Replacement therapy is required regardless of the serum potassium concentration.
- c. The timing of potassium therapy depends on the initial potassium concentration. If patient is hypokalemic, replacement should start with the initial volume expansion and before starting insulin therapy. Otherwise, replacement should start after the initial volume expansion and concurrent with insulin infusion. If the patient is hyperkalemic, defer potassium replacement until after the patient voids.
- d. Initial IVF should have 40 mEq/L of potassium chloride. This concentration can be titrated up or down according to the initial potassium concentration and the trend after the initiation of insulin infusion.

**III- Insulin:**

- a. Start patient on 0.1 unit/kg/h of regular insulin. Younger patients need to be started on 0.05 unit/kg/h due to their higher insulin sensitivity.

*\*Initial insulin bolus of 0.1 unit/kg is not recommended.*

- b. Add dextrose 5-10% to the IVF when BG reaches 250-300 mg/dl (14-16 mmol/L).
- c. During acidosis status, DO NOT WEAN DOWN insulin infusion in response to dropping BG. Instead, add or adjust the already added dextrose.
- d. Titrate IV glucose to maintain BG between 100-200 mg/dl

**IV- Bicarbonate:**

- a. Bicarbonate therapy might cause paradoxical CNS acidosis, and worsen the hypokalemia.
- b. Bicarbonate should not be given except when the acidosis is profound (PH <7.0) and patient is hemodynamically unstable.
- c. If bicarbonate is to be considered, it can be given at 1-2 mmol/Kg over 60 minutes.

**V- Monitoring:**

- a. ABC (including cardiac monitor and pulse oximetry).
- b. BG hourly, electrolytes q2h x 3 then q4h. Corrected Na is calculated by adding 1.6 mEq Na for each 100 mg/dl of glucose above 100 mg/dl).
- c. Strict fluid input/output
- d. Hourly neurologic evaluation
- e. Consider Foley catheter if necessary.

**Discontinuation of the insulin infusion:**

- **Criteria:**
  - Improved acidosis (PH>7.30 or bicarbonate >15)
  - Normal neurologic condition (patient is alert and oriented)
  - Patient tolerates PO liquid and is willing to eat.

- If the above criteria are met, insulin infusion can be discontinued, REGARDLESS of the BG concentration, 30 minutes after the 1<sup>st</sup> subcutaneous dose of rapid acting insulin.
- **Transition to SC insulin:**
  - As soon as insulin infusion is discontinued, IVF (if still needed) should be changed to NO DEXTROSE fluid.
  - Start SC insulin at total daily dose of 0.5-1 unit/kg/day. Basal/Bolus Multiple Daily Injection (MDI) regimen is strongly recommended. 30-40% of the total insulin dose should be basal long acting insulin (Glargine or Detemir).
  - Rapid acting insulin is given before meals. Insulin analogues (Lispro, Aspart or Glulisine) are preferred over regular insulin.
  - To prevent rebound hyperglycemia the first SC injection should be given 15–30 minutes (with rapid acting insulin) before stopping the insulin infusion to allow sufficient time for the insulin to be absorbed.
  - For long-acting insulin a longer overlap is needed.
  - The use of intermediate (NPH) and mixed insulin is not recommended due to increased risk of hypoglycemia and unpredictable absorption / action
  - BG must be monitored before and after each meal, at bedtime and at 02:00-03:00.
  - Check urine ketone q void till it is negative x 2.
  - Patient must be on special diet for diabetes.
  - Start teaching the caregiver/s about BG monitoring and insulin injection ASAP.
  - Goal pre-prandial BG is 100-180 mg/dl (toddlers and preschooler, 0-6 yrs.), 90-180 mg/dl (school age 6-12yrs) and 90-130 mg/dl (adolescent/young adult >13-18).

#### **Cerebral Edema (CE):**

- The most serious complication of DKA.
- Seen in 0.5-1% of cases, but results in morbidity and mortality of 60%.
- Risk factors are:
  - Younger age.
  - New onset diabetes.
  - Severe acidosis.
  - Insulin administration in the first hour of fluid treatment.
  - Greater hypocapnia at presentation.
  - High BUN at presentation.
  - Bicarbonate treatment for correction of acidosis.
  - An attenuated rise in measured serum sodium concentrations during therapy.

#### **Signs and symptoms:**

- Severe headache
- Deteriorated mental status.
- Hypertension / Bradycardia
- Specific neurologic findings (cranial nerve palsies)
- Decrease O<sub>2</sub> saturation.

#### **Management of CE:**

- Reduce IV rate to 2/3 maintenance.
- Elevate the head of the bed.
- Intubation BUT NO HYPERVENTILATION (keep Pco<sub>2</sub> at 30-35)
- Mannitol 0.5-1 g/kg over 20 minutes, may repeat after 2h as needed.

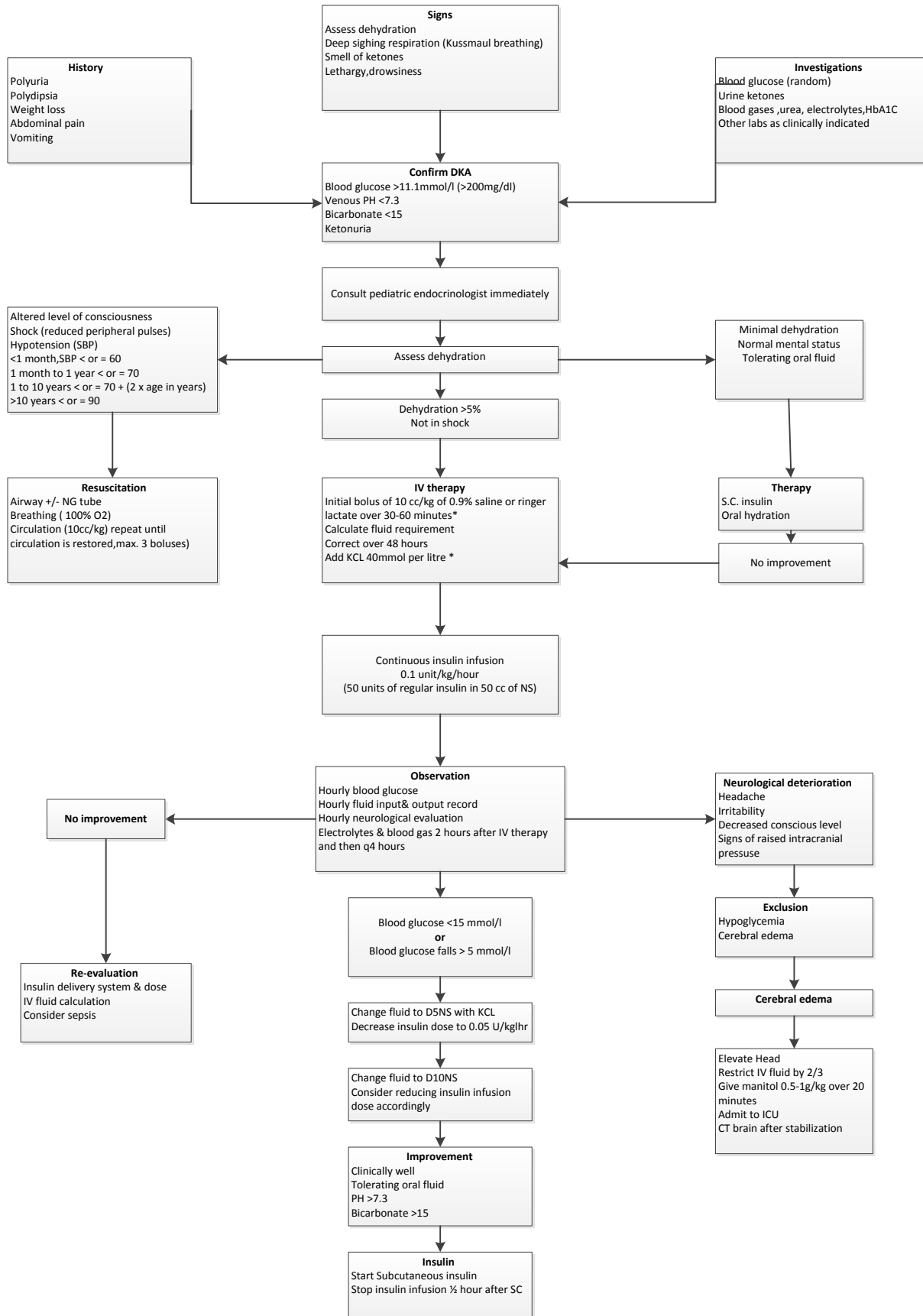


- Hypertonic saline (3%) 5-10 ml/kg over 15 minutes can be used as an alternative to Mannitol, or as a second line of treatment if Mannitol fails.
- Continue DKA management as above but reduce fluid to 2/3 maintenance.
- Brain CT (to be done after initiating the above steps) to confirm the diagnosis and rule out other intracranial disorders.

**Reference:**

- ISPAD Clinical Practice Consensus Guidelines 2009 Compendium. Diabetic Ketoacidosis in children and adolescents with diabetes. *Pediatric Diabetes* 2009; 10(suppl. 12): 118-133.
- Type 1 diabetes: diagnosis and management of type 1 diabetes in children, young people and Adults. NICE Clinical Guideline 15, July 2004.
- Emergency Room Management Guidelines for the Child with Type 1 Diabetes, Ontario 2009. [www.health.gov.on.ca](http://www.health.gov.on.ca)
- Standards of Medical Care in Diabetes, *Diabetes Care* **January 2012** vol. 35 no. Supplement 1 **S11-S63**

# Appendix 2 Diabetic ketoacidosis management algorithm



## Appendix 3 Specifications for Ongoing Assessment and Monitoring of Diabetes mellitus in Children (see Appendix 1)

### A. At every clinic visit (4 – 6 weeks following discharge, and subsequent minimum 3 monthly visits)

- Review home glucose measurements
- Adjust insulin doses if indicated
- Check injection sites
- Measure height and weight, calculate BMI and plot measurements in growth chart
- Measure HbA1C
- Review and provide ongoing educational needs
- Examine thyroid
- Check blood pressure and pulse (blood pressure values should be compared with age-appropriate centile charts)

### B. Annual and additional Checks

- Screen for retinopathy and nephropathy from age 9 years who have had a diagnosis of diabetes for at least 5 years **OR** from age 11 who have had a diagnosis of diabetes for at least 2 years
- Screening for thyroid function (by analysis of circulating TSH and antibodies) is recommended at the time of diagnosis of diabetes and every second year thereafter in asymptomatic individuals without goitre or in the absence of thyroid auto antibodies. More frequent assessment is indicated for children with symptomatic or diagnosed thyroid disease
- Screen for celiac disease for the first five years after diagnosis and every second year thereafter. More frequent if clinically indicated
- Screening for fasting blood lipids to be performed after diagnosis (when diabetes stabilised) in all children with diabetes over 12 years of age. If results are normal, repeat screening every 5 years
- Screening for fasting blood lipids to start at 2 years of age if there is a family history of hypercholesterolemia, early CVD or if the family history is unknown

#### Appendix 4a – Care of Diabetic children in the School setting:

- The diabetes team providing healthcare to the child outside the school setting must provide the school with a complete care plan for a child with diabetes in the school setting.
- The care plan must be updated annually or when there is any change in the treatment including:
  - The physician letter to school with minimum fields as below template **Appendix 4b** and appropriate fields as included in the HAAD Standard for Medication Administration in Schools, click [here](#) and
  - **Appendix 4c** (hypo/hyper glycaemia management); emergency contact phone numbers for the diabetes care team in order for the school to contact these individuals with diabetes-related questions and/or during emergencies.
- The school nurse must act in accordance with the plans and encourage and support the child to do so;
- No changes must be made to the care plan except by the diabetes team; this provides optimal benefit for the child.
- School Nurses must be trained to provide or supervise all diabetes care prescribed by the diabetes team and necessary during school time, including initiating treatment for emergency hypoglycemia and persistent hyperglycemia.
- The treatment required may include:
  - Insulin administration by injection or with an insulin pump.
  - Testing Blood Glucose level of young children and older newly diagnosed children and adolescents until they are capable of performing the task under supervision or independently.
  - Identification of and treatment for hypoglycemia/hyperglycemia,
- The school nurse must ensure that all school staff that provide education/care for the student with diabetes are made aware of the symptoms and initial care and management of hypoglycemia and hyperglycemia including when to seek assistance in accordance with other school emergency procedures.
- The parent/guardian must provide the school with the following:
  - All materials and equipment necessary for diabetes care, including blood glucose testing, insulin administration and urine ketone testing.
  - Supplies to treat hypoglycemia, including a source of glucose and a glucagon emergency kit as indicated in the diabetes care plan.
  - A separate logbook to be kept at school with the diabetes supplies for the staff or student to record test results; blood glucose values must be communicated to the parent/guardian or other health professionals for review on a regular basis, after an acute event or when requested.
- The school must provide an appropriate location for all materials and equipment needed for diabetes care including insulin and/or glucagon storage to ensure easy access for the nurse and child.
- In the event that treatment is required the student must remain under supervision until appropriate treatment has been administered and/or any necessary follow up is arranged.

- Permission from the school management representatives must be obtained and documented to allow the student to see the school nurse upon request.
- Permission from the school management representatives must be obtained and documented to allow the student to eat a snack anywhere, including the classroom or the school bus, if necessary to prevent or treat hypoglycemia.

Reference:

- ISPAD consensus guideline 2009
- NICE Clinical guideline 2004
- ADA position statement on diabetes care in the school and day care setting, *Diabetes Care 2010;33(Suppl 1):S70-S74*

### Appendix 4b Physician – School Letter

Healthcare facility name \_\_\_\_\_ Contact No: \_\_\_\_\_

Date \_\_\_\_\_

Name of child \_\_\_\_\_

Date of Birth \_\_\_\_\_

Name of School \_\_\_\_\_

Nurse /other Diabetes team member name \_\_\_\_\_

The above named child has Type I Diabetes Mellitus and is currently taking the following medications for diabetes:

Name of Medication	Dose

The child must:

1. Check/have checked their blood sugar;
  - a. Prior to meals
  - b. When there are signs/symptoms of hypo/hyperglycaemia
2. Be given care and treatment in accordance with the HAAD Standard for Diagnosis and management of Childhood Diabetes in particular Appendices 4b (hypoglycaemia/hyperglycaemia).
3. Have documentation of any Additional information e.g. allergies, other medical conditions

\_\_\_\_\_

Please contact me if you have any questions or concerns,

Physician Name \_\_\_\_\_ Signature \_\_\_\_\_

Date: \_\_\_\_\_

**Appendix 4c – Management of Hypoglycemia/Hyperglycemia management for a diabetic student**

Name of student: .....

Name of School: .....

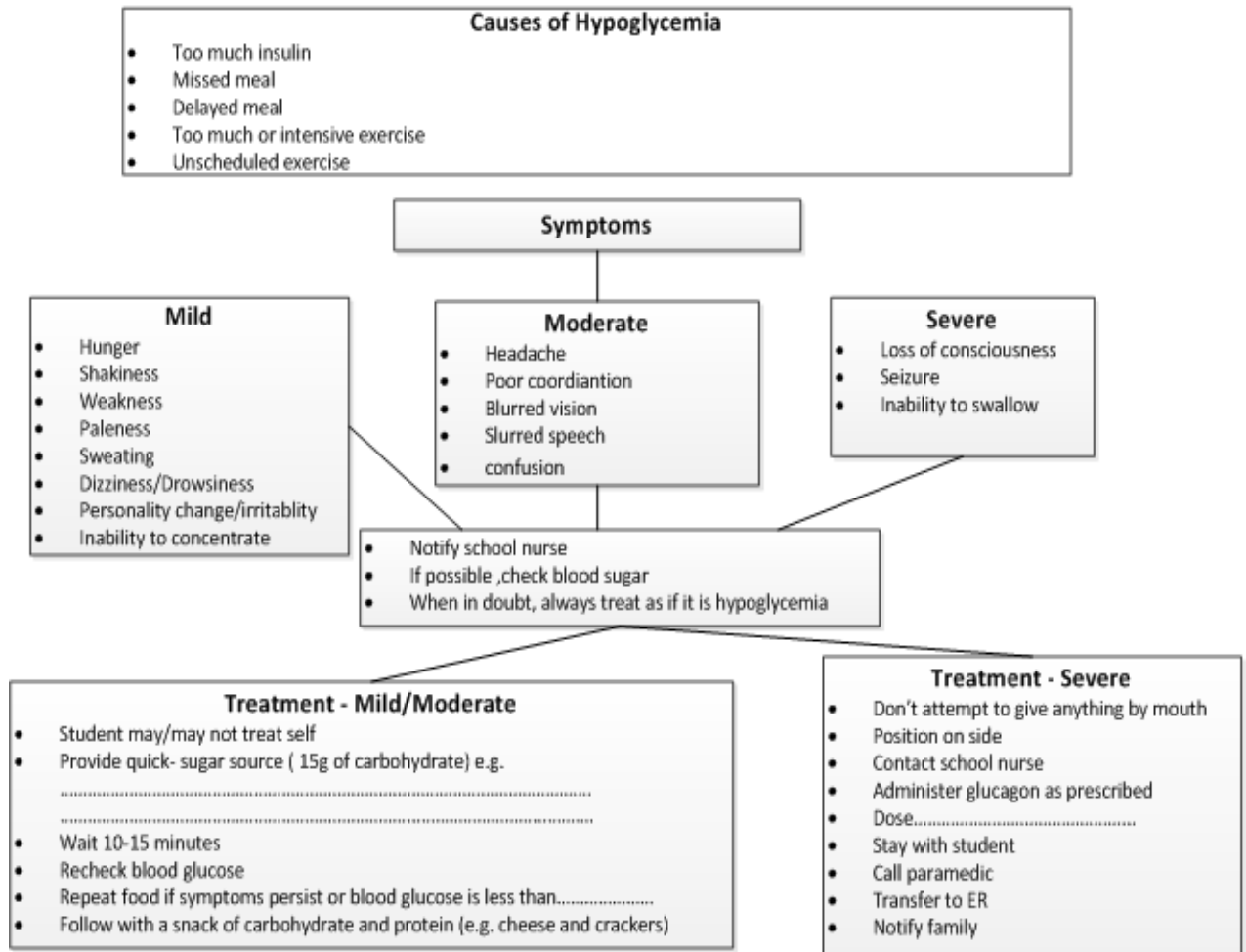
Father contact information: .....

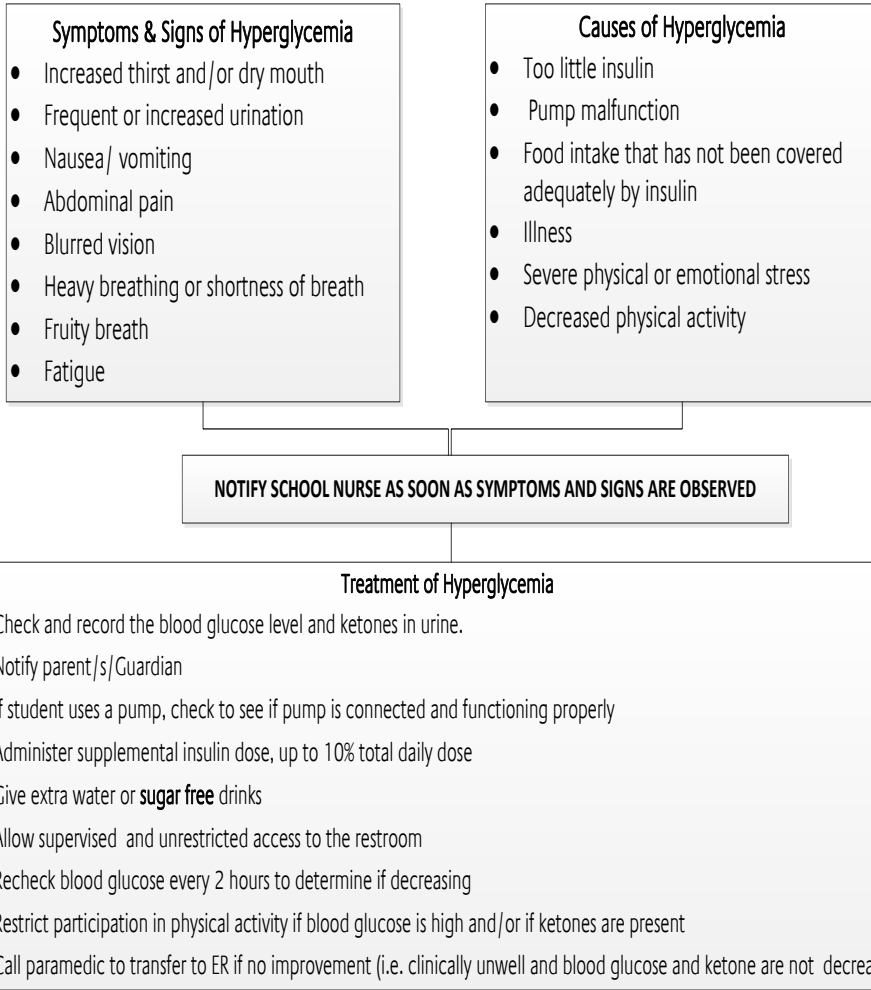
Mother contact information: .....

Diabetes team contact information: Name of facility: .....

Responsible physician: ..... Diabetic Nurse: .....

**NEVER SEND A CHILD WITH SUSPECTED LOW/HIGH BLOOD SUGAR ANYWHERE ALONE**





Responsible physician ..... Date & signature.....