



Feidhmeannacht na Seirbhíse Sláinte  
Health Service Executive



**ROYAL  
COLLEGE OF  
PHYSICIANS  
OF IRELAND**



**PAEDIATRICS**

## **NATIONAL CLINICAL GUIDELINE**

**Title:**

**Management of Paediatric Type 1 Diabetes Patient with a  
HbA1c > 9% (75mmol/mol).**

Clinical Strategy and Programme Office  
Health Service Executive

Version 3.0

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## 1.0 Aim of Guideline

The aim of this guideline is to provide clear and standardised guidelines for all staff caring for (and advising care givers of) children and young people with very sub optimal type 1 diabetes control: HbA1c >9% (75mmol/mol).

## 2.0 Purpose and Scope

**2.1** The purpose of this guideline is to improve the management of Paediatric Type 1 patients with a HbA1c >9% (75mmol/mol).

**2.2** These guidelines are intended for healthcare professionals, particularly those in training, who are working in HSE-funded paediatric and neonatal services.

**2.3** They are designed to guide clinical judgement but not replace it. In individual cases a healthcare professional may, after careful consideration, decide not to follow a guideline if it is deemed to be in the best interests of the child or neonate.

## 3.0 Background and Introduction

Optimal glycaemic control has been unequivocally shown to reduce the risk of microvascular complications in individuals with Type 1 Diabetes<sup>1,2</sup>. Currently ISPAD recommends a target HbA1c <7.5%<sup>3</sup> while BSPED recommend <6.5%.<sup>4</sup> With the advent of newer technologies, both in the areas of continuous glucose monitoring and insulin delivery, achieving these targets is possible. However there are still some children in whom it is difficult to achieve optimal glycaemic control. Suggested targets for Irish children are outlined in Table 1.

*Table 1 Targets for children with Type 1 Diabetes*

Target	
HbA1c	<7% (53mmol/mol)
Fasting glucose	4-7 mmol/L
Post-prandial glucose	5-8 mmol/L
Glucose checks per day	5-7

## 4.0 Legislation/Other Related Policies

Model of Care for All Children and Young People with Type 1 Diabetes

<http://www.hse.ie/eng/about/Who/clinical/natclinprog/paediatricsandneonatology/paedsmoc.pdf>

## 5.0 Glossary of Terms and Definitions

<b>T1D</b>	Type 1 Diabetes
<b>CGM</b>	Continuous Glucose Monitoring
<b>HbA1c</b>	Haemaoglobin A1c
<b>SMBG</b>	Self monitoring of blood glucose
<b>DNS</b>	Diabetes Nurse Specialist

## 6.0 Roles and Responsibilities

**6.1** This guideline should be reviewed by each acute hospital senior management team to appropriately plan implementation. This facilitates best practice and standardises the care provided to children in Ireland. This will ensure that the care of children/neonates who attend their facility is optimised irrespective of location.

## 7.0 Clinical Guideline

### 7.1 Self Care

**7.1.1** The aim of paediatric diabetes services is to incrementally empower patients and families to optimise self care. Self Care is promoted through the provision of standardised care for all children, adolescents and their families. This is facilitated through contact with the members of the diabetes multi-disciplinary team and is individualized to the child or adolescent needs.

**7.1.2** *Table 2. Standard Paediatric Diabetes Care for all children, adolescents and their families*

CONTACT	PURPOSE
Clinic Visit Frequency: Three monthly visits.	<ul style="list-style-type: none"> <li>• Offer advice, support , encouragement and counselling as required to incrementally increase self- care skills</li> <li>• Review and adjust current diabetes management aiming to adjust insulin regimen and monitoring to optimize glycaemic control</li> <li>• Measurements of HbA1c, Auxology, and assessment of injection sites.</li> <li>• Review hypoglycaemia awareness and review glycemc data (SMBG, Libre, CGM) and offer dose titration advice.</li> <li>• Annual review for complications and co-morbidity screening.</li> <li>• Ensure linked to diabetes retinal screening (age<math>\geq</math>12 years).</li> </ul>
Telephone contact or visit with DNS	<ul style="list-style-type: none"> <li>• Offer support and encouragement, answer queries that arise between visits and incrementally build on existing knowledge.</li> <li>• Enable formal education and updates on new methods of monitoring or treating diabetes.</li> <li>• Follow up any changes made from clinic.</li> </ul>
Dietician	<ul style="list-style-type: none"> <li>• Advise on healthy eating and carbohydrate counting (incrementally)</li> <li>• Advise on dose adjustment for multiple daily regimens or insulin pump therapy</li> <li>• Advise on exercise adjustments</li> <li>• Tailored advice as required (coeliac disease, high cholesterol etc)</li> </ul>
Social Worker	<ul style="list-style-type: none"> <li>• Offer support in coping with the burden of diabetes</li> <li>• Offer information on accessing support groups for parents, adolescent , child or siblings and on entitlements</li> <li>• Offer additional support where child/family are struggling with diabetes burden</li> </ul>

Psychology	<ul style="list-style-type: none"><li>• Offer emotional and behavioural support for parent, child and adolescent</li><li>• Where Psychology is unavailable to the team, each service needs to identify pathway to psychological support/mental health services locally depending on issue identified (Jigsaw (age 12-25 years), primary care, CAMHs, Tusla)</li></ul>
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## **7.2 Sub Optimal Control (Appendix 1)**

**7.2.1** The level of support offered to families' is individualised to their needs. When glycaemic control is suboptimal, additional support is required to optimize control

### **7.2.2 First occasion: - HbA1c is very sub optimal >9% (75 mmol/mol)**

**7.2.2.1** Assess if any obvious cause:

- Review injection sites & technique,
- Review insulin doses & regimen (especially if missed doses suspected) and plan for support/supervision from family member/identified adult or simplified regimen
- Consider the effect of growth and puberty or any associated conditions e.g. coeliac disease
- If carbohydrate counting - review accuracy with dietician
- If not carbohydrate counting, review diet plan (fixed carbs) with dietitian
- Review psychosocial aspects of diabetes – consider referral for psychology or social work review if indicated

**7.2.2.2** Plan for weekly contact with DNS and repeat HbA1c in 6-8weeks

### **7.2.3 Visit 2 (week 6-8)**

**7.2.3.1** HbA1c improved: congratulate the child/adolescent and family, continue to support and review in routine OPD

**7.2.3.2** **If HbA1c still >9%**

**7.2.3.3** Reassess all obvious causes as highlighted above.

**7.2.3.4** Review by entire multi-disciplinary team at visit – doctor, nurse, dietician and SW/psychology.

**7.2.3.5** Consider use of CGM if reason for high HbA1c is not apparent

**7.2.3.6** Special considerations regarding insulin regimen:

1. Consider a simplified BD premixed insulin regimen if not managing more complex MDI regime
2. If lunch injections not being given, consider an insulin regimen which does not require lunch time injection
3. Pump patients –if frequent missed boluses, consider setting alarms as a reminder / consider pump holiday if need a break from the pump

**7.2.3.7** Follow-up in DNS led clinic with weekly nursing contact and HbA1c at 6 weeks

### **7.2.4 Visit 3 (week 12)**

**7.2.4.1** HbA1c improved: congratulate and continue with regular contact (1-4 weekly) to maintain and build on improvement. Review in routine OPD.

**7.2.4.2** **If HbA1c still >9%**

**7.2.4.3** MDT review again and reassess all obvious causes.

- 7.2.4.4 Psychology & social work review essential. Where Psychology is not part of the team, each service needs to identify pathway to psychological support/mental health services locally depending on issue identified (Jigsaw (age 12-25 years), primary care, CAMHs, Tusla).
- 7.2.4.5 Review basics of diabetes management (as an inpatient or outpatient).
- 7.2.4.6 Inform the family of the short term increased risk of DKA from poor glycaemic control and also the long term risk of microvascular complications.
- 7.2.4.7 Continue with weekly face to face team contact
- 7.2.4.8 Repeat HbA1c in 6 weeks.

#### **7.2.5 Visit 4 (week18)**

- 7.2.5.1 HbA1c improved - congratulate and continue with regular contact (1-4 weekly) to maintain and build on improvement. Review in routine OPD.
- 7.2.5.2 **If HbA1c still >9%**
- 7.2.5.3 Consider inpatient admission for re-education, MDT review and calculation of daily insulin requirements.
- 7.2.5.4 Where issues arise that suggest need for child protection, referral needs to be made to Tusla.

## **8.0 Implementation, Revision and Audit**

- 8.1 Distribution to the CEO of each Hospital Group for dissemination through line management in all acute hospitals within their group.
- 8.2 Implementation through Senior Management Teams of each acute hospital.
- 8.3 Distribution to other interested parties and professional bodies
- 8.4 The NCPPN Diabetes Working group has agreed that this guideline will be reviewed on a 3 yearly basis.
- 8.5 Regular audit of implementation and impact of this guideline through outcome and process measures is recommended to support continuous quality improvement. It is the responsibility of each unit providing care for children with diabetes and intercurrent illness to audit the unit practise regularly in order to ensure that care in being provided in line with guidelines and that any deviations are clinically justified. The audit process should be coordinated in each paediatric unit under local paediatric clinical governance and should be taken from a multidisciplinary perspective where appropriate. Where the audit identifies areas for practise improvement, it is the responsibility of each individual unit to implement changes and re-audit to support continuous quality improvement.

## 9.0 References

International Society for Paediatric and Adolescent Diabetes (2014) ISPAD Clinical Practice Consensus Guidelines 2014. <http://www.ispad.org/?page=ISPADClinicalPract>

Nathan D.M. et al. (1993) The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin dependant diabetes mellitus. The New England Journal of Medicine, 329(14, 977-986)

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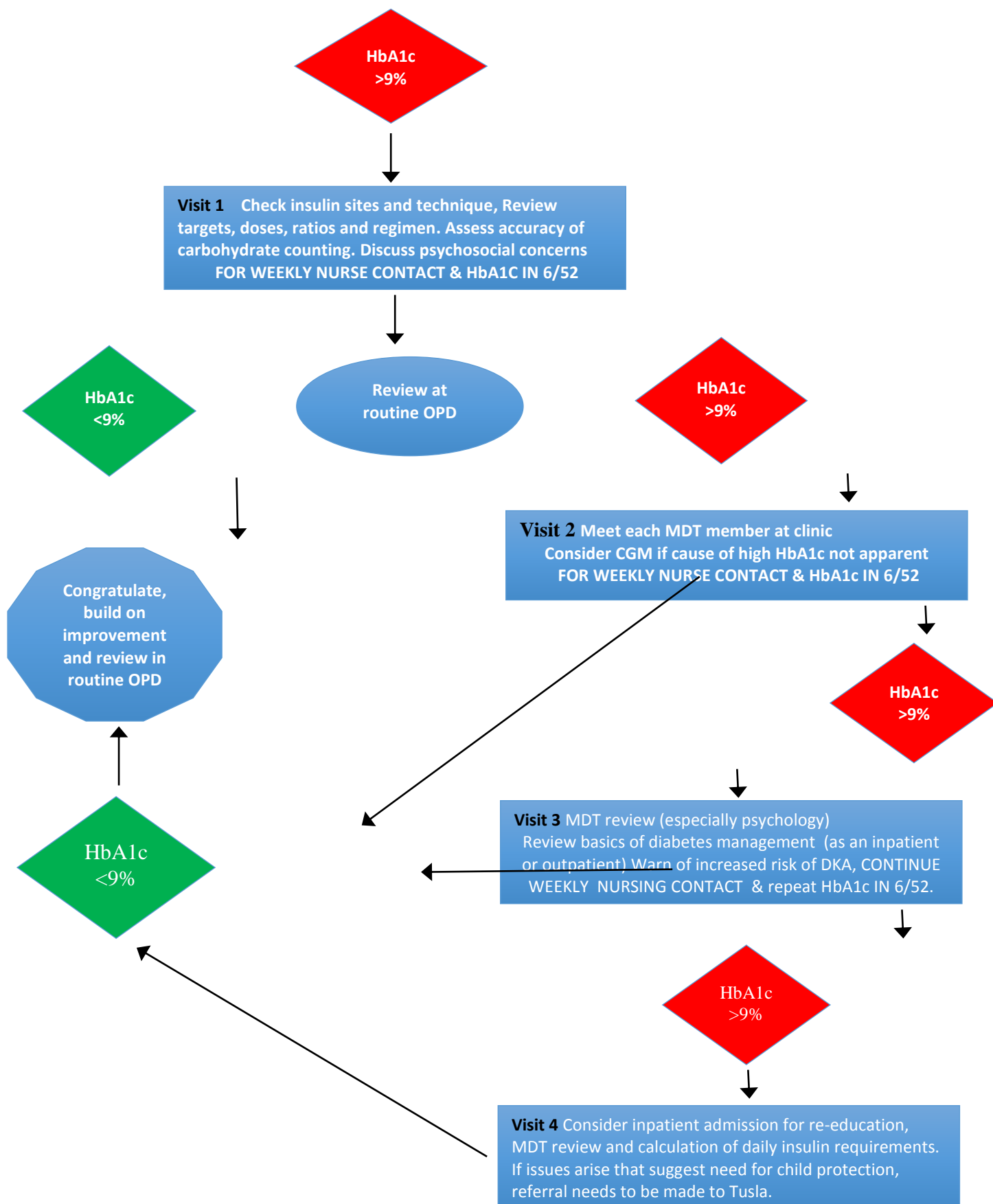
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## 10.0 Qualifying Statement

- 10.1** These guidelines have been prepared to promote and facilitate standardisation and consistency of practice.
- 10.2** Clinical material offered in this guideline does not replace or remove clinical judgement or the professional care and duty necessary for each child.
- 10.3** Clinical care carried out in accordance with this guideline should be provided within the context of locally available resources and expertise.
- 10.4** This Guideline does not address all elements of standard practice and assumes that individual clinicians are responsible for:
  - Discussing care with the child, parents/guardians and in an environment that is appropriate and which enables respectful confidential discussion.
  - Advising children, parents/guardians of their choices and ensure informed consent is obtained.
  - Meeting all legislative requirements and maintaining standards of professional conduct.

## 11.0 Appendices

### 11.1 Sub Optimal Control (HbA1c>9%) Algorithm





### 11.3 Appendix 2

#### Acknowledgements

This guideline has been developed by the National Clinical Programme for Paediatrics and Neonatology Diabetes Working Group. The members of this group include medical, nursing and dietetic representatives from paediatric diabetes services. The Diabetes Working Group also wish to thank those who provided input and feedback on draft versions of this guideline throughout development, and those who provided valuable input during the consultation process.

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### 11.2 Appendix 2

#### Sign Off

Sign off by Paediatric Diabetes Working Group	December 2018
Sign off by Paediatric Clinical Advisory Group	December 2018
Sign off by HSE CSPD Senior Management Team	February 2019