

# Management of children with Type 1 diabetes during illness (sick –days). Is there a need for National consensus guideline?

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## Introduction

Adequate sick day management at home may reduce the risk of progression to diabetic ketoacidosis (DKA) and admission to hospital. The UK does not have a consensus guideline for sick day management advice to children and young people (CYP) with Type 1 Diabetes. Children's diabetes services vary in their practice of education and advice in the use of urine or blood ketone monitoring during illness. The aim of this project was to look at the variation of management of diabetes during illness.

## Methods

A survey was conducted by the Association of Children's Diabetes Clinicians (ACDC) who sent out questionnaires to all diabetes units managing children and young people with Type 1 Diabetes including: local sick day management rules, out of hours diabetes support for families and information about the local diabetes service.

## General Rules for managing Diabetes during illness

1. Never Stop or Omit Insulin. Various international recommendations based on consensus and good practice suggest increasing insulin and more frequent glucose monitoring during period of illness.<sup>1,2</sup> There are no clinical trials to suggest how to calculate these increased insulin doses.
2. Take plenty of fluids and check ketone levels when ill. There is good evidence that blood ketone testing which measures beta-hydroxybutyrate is superior to measuring urine ketones.<sup>3,4</sup>
3. Out of hours advice service provided by trained health care professionals can reduce hospital admissions with diabetic ketoacidosis.<sup>5</sup>

## Results

93/127 (73%) of the units responded to the survey. The majority of units (92%) had a sick day management guideline in place There were 14 tertiary centres and 79 secondary care providers. 68/93 (73%) had a separate protocol for the insulin pump patients. 70 /93 (75%) had the guidelines on the hospital intranet so it was easily accessible for the hospital staff. Median number of children per service was 161 (range 73-450). There was wide variation in number of diabetes specialist nurses and dieticians per service. Most of the units did not have a dedicated psychologist for diabetes service. (Table 1)

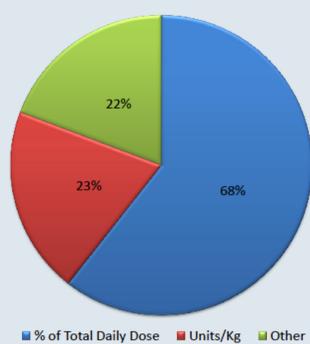
**Table1. Information on healthcare providers per service**

	Per service Median (Range)	Patients/ health care provider Median (range)
Diabetes Nurse Specialist	2.6 (0.9-6.1)	65 (37.5- 136.7)
Dietitian	1 (0.1-4)	191.6 ( 64-1100)
Psychologist	0.4 ( 0.025-1)	414 (0-2500)
Diabetes clinicians	1.2 (0.25-3)	125 (55- 618)

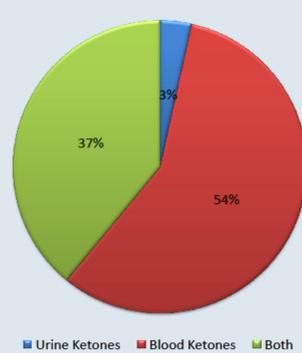
**Table 2. Information on Insulin regime**

Insulin Regimen	Median number of users( Range)
Pump	25 % ( 0-64)
MDI	67.3 % (34.4-95.6)
BD or TDS	2.4 % ( 0-59)

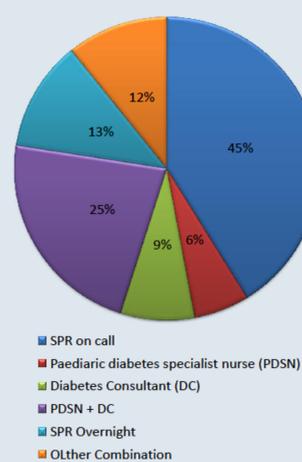
Q.1 In your guideline, when a patient is hyperglycaemic, how is the increased insulin dose calculated?



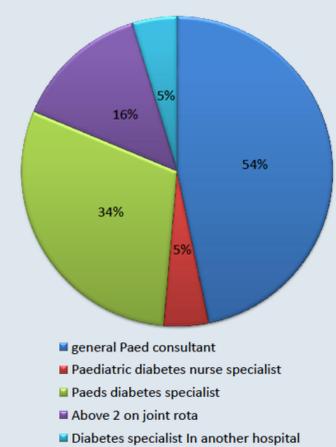
Q 2.What method of ketone testing do you advise your patients to use?



Q.3. When Children with diabetes need advice out of hours, who do they speak to?



Q4. When a General Paediatric Registrar needs advice about a diabetic patient, who do they speak to?



## Conclusion

There was a wide variation in the practice of monitoring and advice given during illness. All guidelines advised increased doses of insulin during sick days but there was no consensus on how to calculate increased doses. There were also variations in the use of ketone testing and frequency on blood glucose monitoring. Some units still use urine ketone testing routinely. There is a need for evidence based National guidance to be in place.

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