

Establishing a 'Pump School' in a large children's hospital



**Authors: Lesley Drummond, Lead Diabetes CNS
 Dr Ruth Krone, Consultant Endocrinologist**

BACKGROUND

The Diabetes Team at Birmingham children's Hospital (BCH) traditionally started insulin pump therapy on an individual patient basis, with no structured curriculum. Following a review of available pump education packages and amendments, then, having been made to fit with BCH guidelines, the Team commenced 'Pump School' in 2013 for all children and young people (CYP) transitioning from multiple daily injections to insulin pump therapy (CSII) using Medtronic, Accu-chek, Animas and Omnipod pumps.

PROJECT AIM

To provide CYP and their parents/carers with structured education to improve their outcomes including glycaemic control, hypoglycaemic episodes and quality of life (QOL).

METHODOLOGY

'Pump School' provides structured, pump specific education comprising of six, 3-hour sessions over a period of 3 months. Education is in small groups, matched only by the insulin pump to be initiated. Sessions are delivered by diabetes nurses supported by pump company educators/representatives. CYP and their parents undertake a mandatory CSII awareness session and an assessment process prior to the programme, exploring expectations of CSII, knowledge of diabetes management and carbohydrate counting competency. Generic presentations on daily management were developed with specific CSII operational tools and advanced functioning for the individual pumps included in week 1 and 3 respectively. Education of the CYP's school support staff is an integral part of week 2.

DATA COLLECTION

HbA1c measurements using the DCA Vantage analyser and QOL questionnaires (Problem Areas in Diabetes [PAID] and Fear of Hypo) are taken at baseline and at 3 months, by each family, to evaluate the effectiveness of the programme.

RESULTS

At the point of audit, 35 CYP had been enrolled, 14 on Medtronic, 11 Accu-chek, 8 Omnipod, 2 Animas and 31 had 'graduated' with 1 individual dropping out after session 1 due to problems with committing to the education programme. 100% of the CYP's schools have attended week 2. Approximately 40hrs of nursing time per 5 patients educated, has been saved using this model.

CONCLUSION

Improvements were seen mainly in QOL scores with minimal changes in HbA1c. Plans are to audit whether improvements are sustained at 12 months and to evaluate the curriculum, involving other professionals from within the team, such as dietitians to utilize their expert knowledge in the hope of further improving outcomes. Additional plans are to audit glycaemic control at baseline, 3, 6 and 12 months in matched pump school and pre pump school groups in order to further assess the efficacy of structured education in insulin pump therapy.

Mean value	HbA1c	Total Dose (TDD)	Daily (7-95ui)	PAID (max. score 80)	Fear of Hypo (max. score 52)	No. weekly hypos
Baseline (n= 34)	67mmol/l (8.3%)	32.5ui (7-95ui)		15.8 (0-46)	8.2 (0-26)	3.1 (0-11)
3 months (n= 31)	64mmol/l (8.0%)	34.6ui (8-90ui)		11.6 (0-58)	5.1 (0-19)	2.6 (0-7)

CONTACT : lesley.drummond@bch.nhs.uk