

## Introduction

- Type 1 Diabetes Mellitus (T1DM) is one of the most commonly diagnosed chronic childhood conditions and requires a high degree of self management. Monash Children's Hospital Department of Paediatric Endocrinology and Diabetes manages around 835 children and adolescents with T1DM.
- Flexible insulin dosing is the treatment of diabetes with multiple daily insulin(MDI) injections and involves education on carbohydrate(carb) counting, and using an individualised insulin to carb ratio(ICR) and correction factor, which enables the pre-prandial insulin dose to be matched to the carbohydrate intake. This allows for a more flexible approach to diabetes management, allowing insulin dosing to be more closely matched to carbohydrate intake and improvement in quality of life(1).
- There was an increasing demand from children, adolescents and their families with T1DM at Monash Children's Hospital for access to education on flexible insulin dosing. Due to large patient numbers and limited clinician resources an online group based education format was commenced.

## Objectives

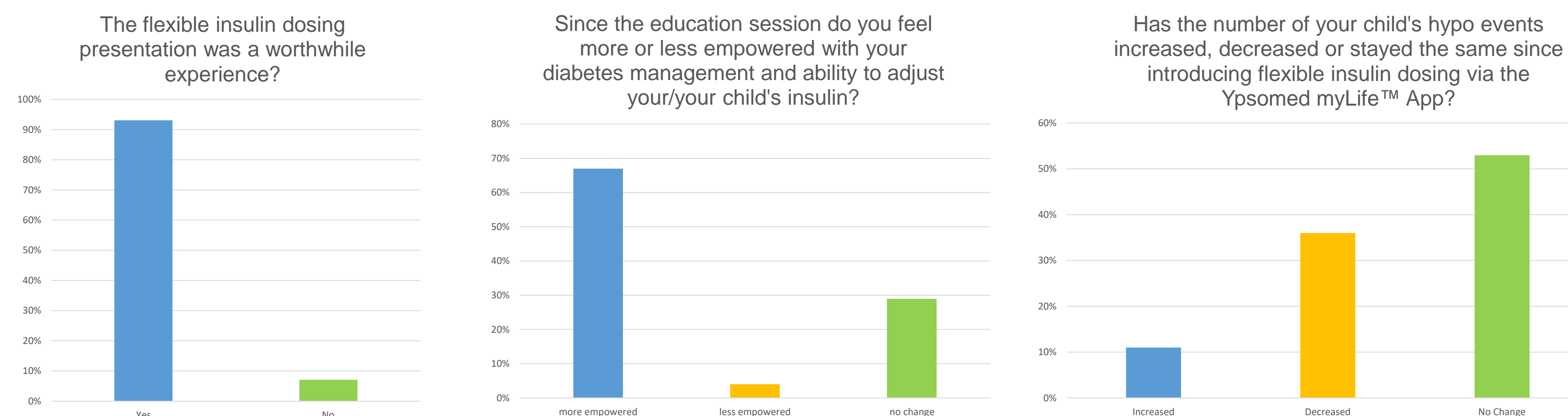
- To develop an online group based flexible insulin dosing program and to determine if this method of online group education would result in positive patient satisfaction and quality of life outcomes

## Methods

- A 2 hour online group based flexible insulin dosing education program was developed and implemented in 2022 for existing patients referred by the multidisciplinary team, on multiple daily insulin injections with T1DM.
- Education was provided via Microsoft teams. This included a session with the Dietitian which provided education on carbohydrate counting and a session with the Diabetes Nurse Educator providing education on using an individualised insulin to carb ratio(ICR) and correction factor within an automated insulin bolus calculator application, Ypsomed myLife™ App.
- Prior to the group education session patients families were provided with instructions on how to download the bolus calculator app and their individualised settings for the bolus calculator.
- A satisfaction survey was developed to assess the program and was provided to the attendees after completing the education sessions.

## Results

- 187 patients were offered an appointment with 119 patients attending the program, a 63% uptake of the program. Over 26 online groups with around 5 families in each group were conducted between March 2022- March 2023.
- 63% of the patients parents completed the satisfaction survey.
- Satisfaction survey results indicated high overall patient satisfaction. 93% of respondents felt the online education was a worthwhile experience. 67% felt more empowered with diabetes management and their ability to adjust their child's insulin. 36% reported that their child's hypoglycemic events decreased and 53% reported that they stayed the same.
- Families reported significant improvements in mealtime flexibility, improved food relationships and greater empowerment with overall diabetes management.



## Common Themes From Satisfaction Survey

*“My daughter has a much better relationship to food”*

*“The ability to allow our child to eat less carbs. Not having to keep feeding them, especially when they're not hungry or already full. She is a lot happier at meal times and reduces stress around eating. It's allowed us so much more flexibility around our meal times”*

*“Switching to flexible dosing has been completely amazing. My only regret is that we didn't do it earlier!” Thank you Team! “*

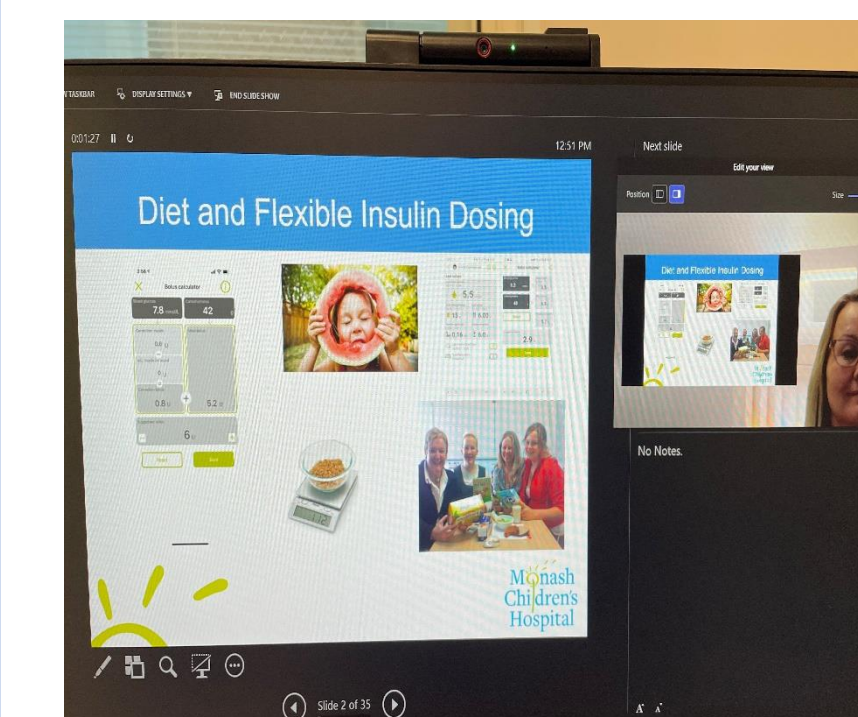
*“More conscientious about calculating carbohydrates”*

*“So much easier to work with differences in appetite and habit! I feel like I have more control over my diabetes”*

*“Positive outcome is that we now count carbs more accurately”*

## Conclusions

- An online group based education program for introducing flexible insulin dosing to families on MDI therapy is an effective method of educating large numbers of patients when resources are limited within a Diabetes Service.
- Qualitative feedback from families indicated that the group based online sessions resulted in positive outcomes in their diabetes management, greater empowerment and flexibility with meals.
- Evaluation of the programs long-term viability, by assessing participants' adherence to flexible insulin dosing six months post completion of the program would have been beneficial.
- Program will be further developed into online learning modules for patients and their families to provide a more flexible learning option that can be completed at the families convenience.



## References

- 1) Annan SF, Higgins LA, Jelleryd E, Hannon T, Rose S, Salis S, Baptista J, Chinchilla P, Marcovecchio ML. ISPAD Clinical Practice Consensus Guidelines 2022: Nutritional management in children and adolescents with diabetes. *Pediatr Diabetes*. 2022 Dec;23(8):1297-1321. doi: 10.1111/peidi.13429. Epub 2022 Dec 5. PMID: 36468223