

Using data to evaluate effectiveness- an impact of training in QI methodology

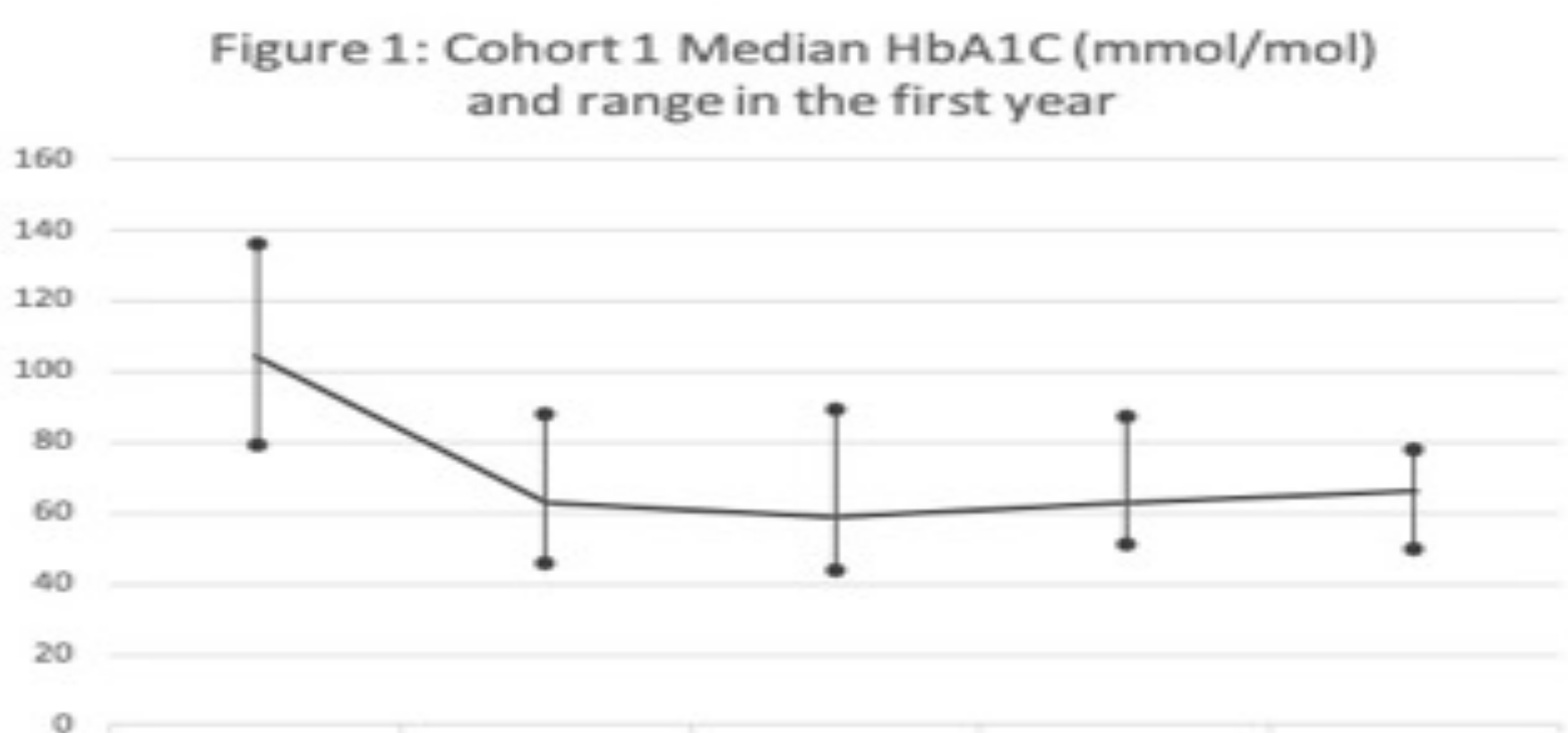
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Objectives

In 2020-21, the children's diabetes team at our NHS Trust participated in training in Quality Improvement (QI) methodology, as part of the National Diabetes Quality Programme(1). The team applied this learning to identify ways to improve patient outcomes in the first year of diagnosis, with aim to increase the number of patients achieving glycated haemoglobin (HbA1C) of less than 53mmol/mol. HbA1C data was tracked using run charts before and after trial of a targeted intervention and effectiveness was evaluated.

Methods

All patients with a new diagnosis of type 1 diabetes in the second quarter of 2021 had 3 monthly HbA1c measurements charted and plotted on a run chart. Evaluation of this data showed an increase in median HbA1c for this cohort of 9 patients between 6 and 9 months post diagnosis (Figure1).



We noticed however that 50% of patients in this cohort showed an upward trend in HbA1c between 3 and 6 months post diagnosis.

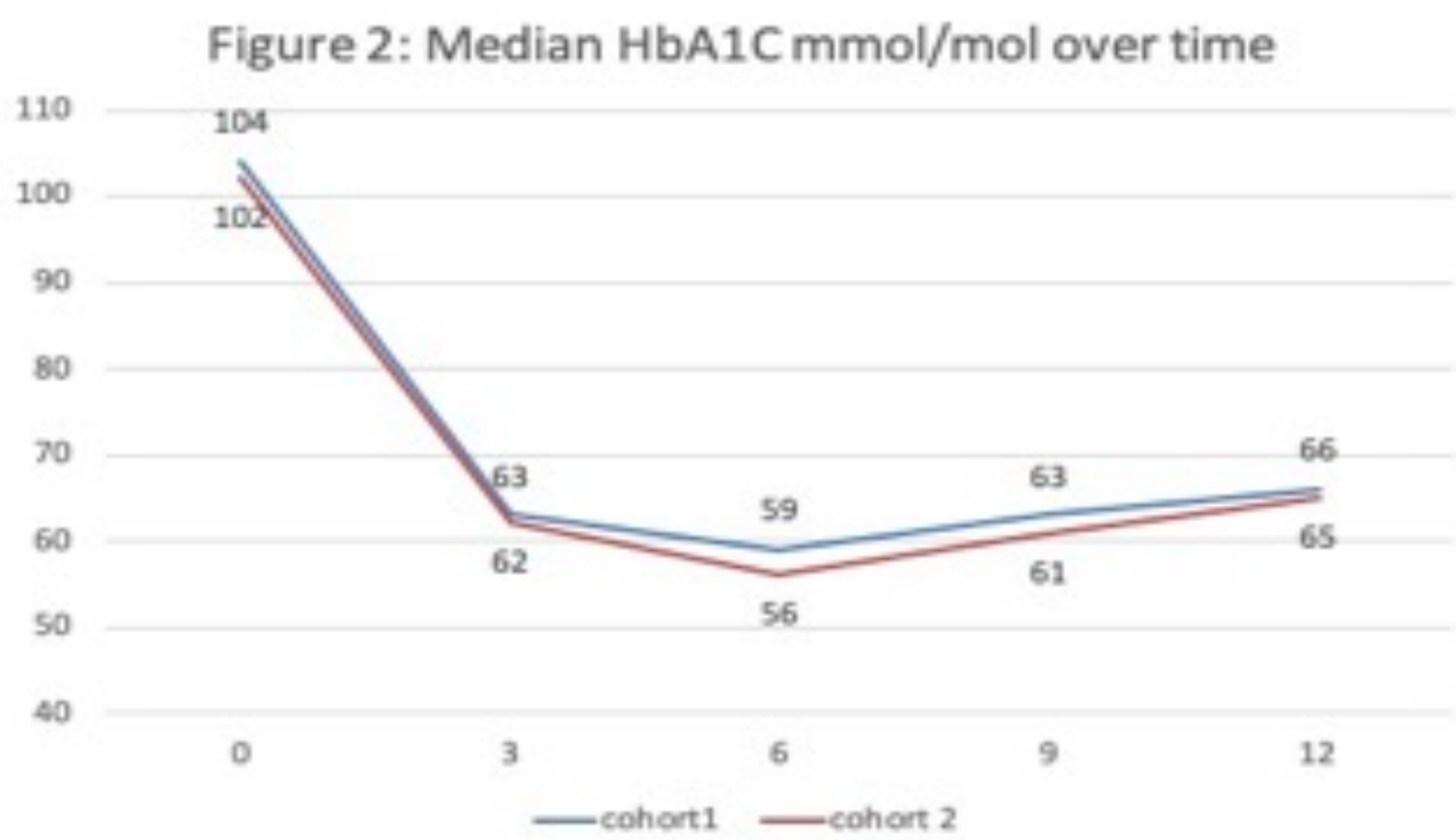
A targeted intervention to address this was introduced in the form of a Paediatric Diabetes Specialist Nurse (PDSN) led education session at 3 months post diagnosis. The focus of these sessions was reinforcement of education given at diagnosis, emphasis on importance of maintaining good glycaemic control and information on ways to achieve this.

HbA1C data for the cohort of patients that received this intervention between April and September 2022 was then tracked to evaluate effectiveness.

Results

There were 11 patients with a new diagnosis of type 1 diabetes between April and September 2022, who continued to receive care from our team at 12 months post diagnosis. All patients were offered and attended the 3 month PDSN led education session. Patients and staff reported 100% satisfaction with these sessions when verbal feedback was obtained.

The median HbA1C trend for this cohort of patients was very similar to the previous cohort in 2021 (figure2).



The number of patients showing an increase in HbA1c between 3 and 6 months after diagnosis fell from 50% to 27%.

Our primary aim in introducing this intervention was however to increase the number of patients achieving a HbA1C of less than 53mmol/mol at 12 months post diagnosis. 45% of patients that received the intervention achieved a HbA1C of less than 53mmol/mol as compared to 33% in the previous cohort.

Conclusions

Our training in QI methodology gave us the confidence to use small amounts of data, followed over time, to trial an intervention. It taught us to focus on one key outcome measure that is meaningful to our patients, without worrying about all the confounders. When evaluating the effectiveness of our intervention, our training enabled us to ask if we were measuring the right things to tell us if there was an improvement. Without this, we risked misinterpreting the impact of our intervention. We were also able to recognise that the small improvement demonstrated may not be efficacious use of limited workforce if more impactful interventions are identified in the future.

References

.1. <https://www.rcpch.ac.uk/work-we-do/QI-patient-safety/diabetes-quality-programme/qi-collaborative>