

# The Rotherham Children and Young Peoples Diabetes Team

## CYP Equitable Provision of Diabetes Treatment Technology Fund



Funded:

1 WTE Family Support Worker

0.2 WTE Dietitian

Fixed Term April 2023 - March 2024

Project Lead: Imran Bashir (Paediatric Diabetes lead)

# Background

Unit NPDA data (2022-2023) showed 64.5% of CYP were in the 2 most deprived quintiles.

### 2.3 Patient deprivation profile

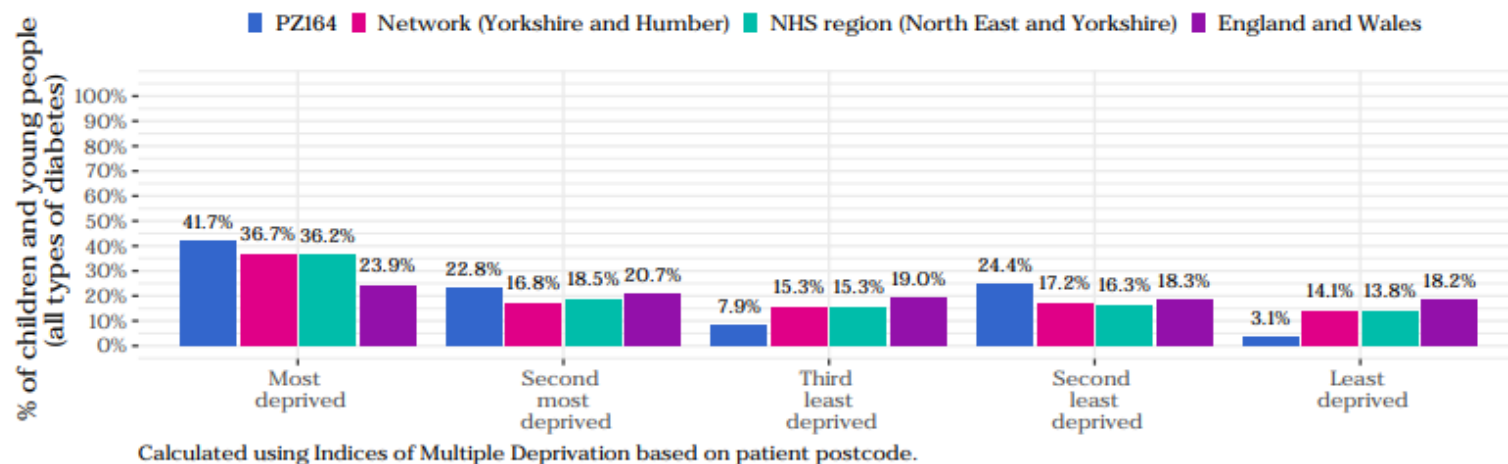


Figure 6: Percentage of children and young people within each deprivation quintile

Unit NPDA data (2022-2023) showed 10.3% of CYP were in ethnic groups.

## 2.2 Ethnicity profile

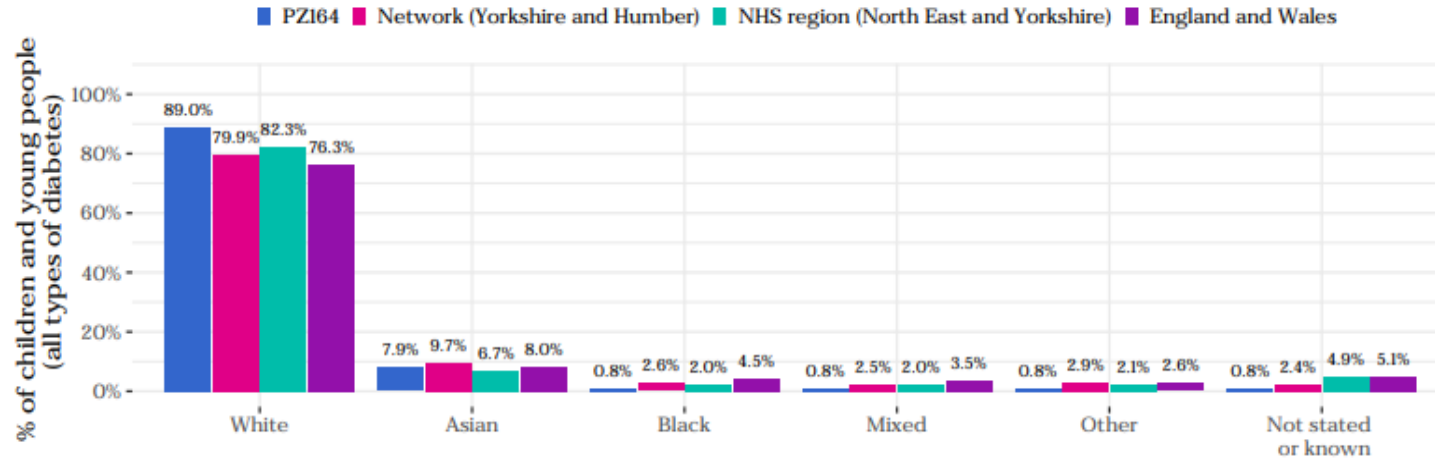
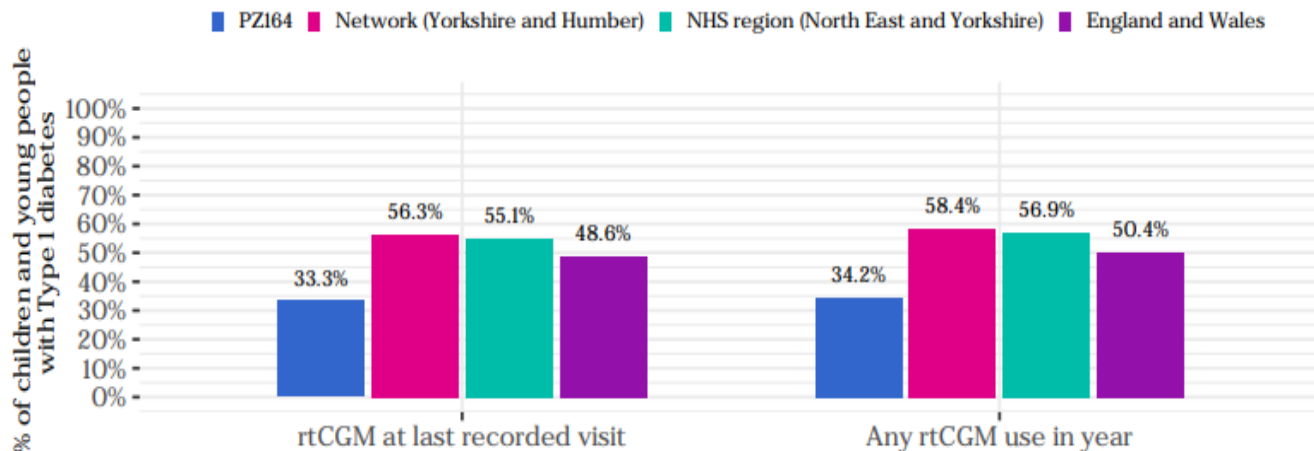


Figure 5: Percentage of children and young people within each ethnic category

# Unit NPDA data (2022-2023) showed lower rtCGMS use compared to the Network, Region and England and Wales.

## 8.2 Continuous glucose monitoring

In PZ164, 114 children and young people with Type 1 diabetes were reported as either using or not using rtCGM with alarms within the audit period. The proportion recorded as using rtCGM at last visit is reported below.



# Unit NPDA data (2022-2023) showed low HCL use compared to the Network, Yorkshire and Humber and England and Wales.

## 8.4 Closed-loop system

At Rotherham Hospital, 4.1% of all children with Type 1 diabetes were using a closed-loop system.

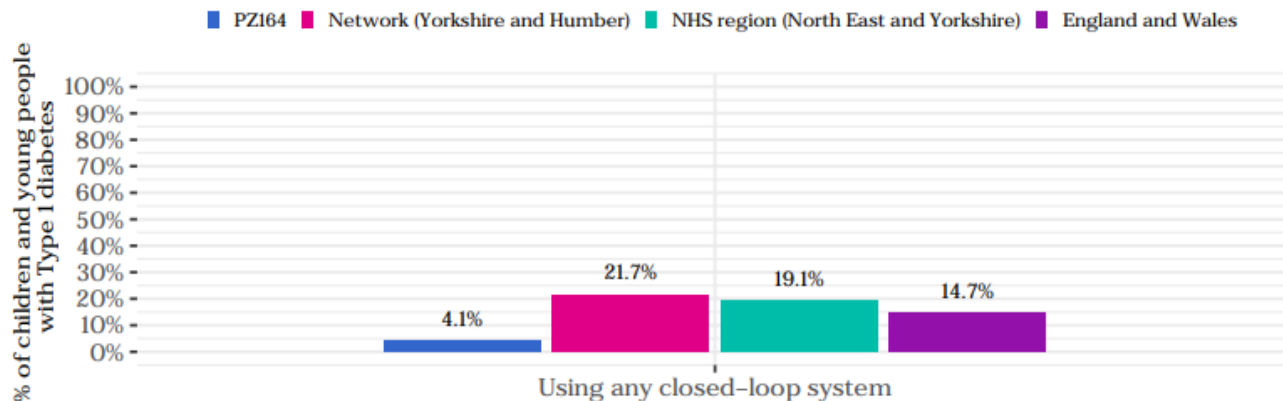


Figure 35: Percentage of children and young people using a closed-loop system

## NPDA Data 2022-2023. PZ164 Rotherham Hospital

The adjusted mean HbA1c was 58.8mmol/L, making Rotherham a positive outlier, however the % of CYP meeting the overall HbA1c targets of  $\leq 48$ mmol/L and  $\leq 53$ mmol/mol was lower in Rotherham compared to Yorkshire and Humber and England and Wales.

**The use of technologies is associated with the best HbA1c outcomes.**

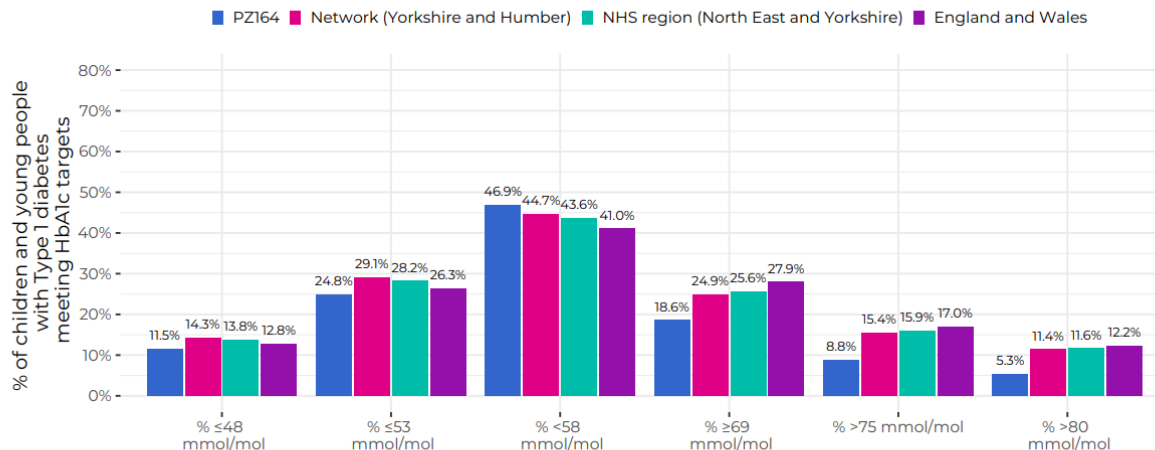


Figure 19: Percentage of children and young people with Type 1 diabetes meeting HbA1c targets

# Barriers to technology

- Many CYP and families from the most deprived and ethnic groups require more pre and post-technology support.
- Anecdotal feedback that CYP and families from the most deprived and ethnic groups are not as proactive in asking about advanced technologies.
- Language, reading and numeracy skills.
- The choice of HCL available. Many of the caseload chose to delay an HCL start until an HCL patch pump was available.
- The limitation of being 'tied in' to a warranty time.
- The commitment to long term use.
- The cost of insurance required for some pumps.
- Phone compatibility.
- Choosing to continue with current sensor choice not yet compatible with HCL

# Project Focus

- To increase diabetes technology usage in Rotherham's most deprived population through education, facilitation and ongoing support.
- To ensure that all children and young people have equitable access to appropriate diabetes technology.
- To support the use of these technologies to achieve and **maintain** improvements in care and best outcomes.

# Summary of Funded Support Worker and Dietitian roles

## FSW:

- Manages the planning and administration of the technology start pathways
- Supports families and CYP to connect technologies to data platforms and provides ongoing technology support
- Reviews 'Time in Range' (TIR) data to highlight those CYP requiring earlier intervention to maintain improvements in care and outcomes
- Provides individual support to struggling CYP and their families and those not engaging with the service
- Signposts and demonstrates technology resources and equipment and supports their use/troubleshooting
- Prepares data and information for clinic reviews

**The FSW continues to allow capacity for the PDSNs to focus on new technology starts, clinical support and reviews.**

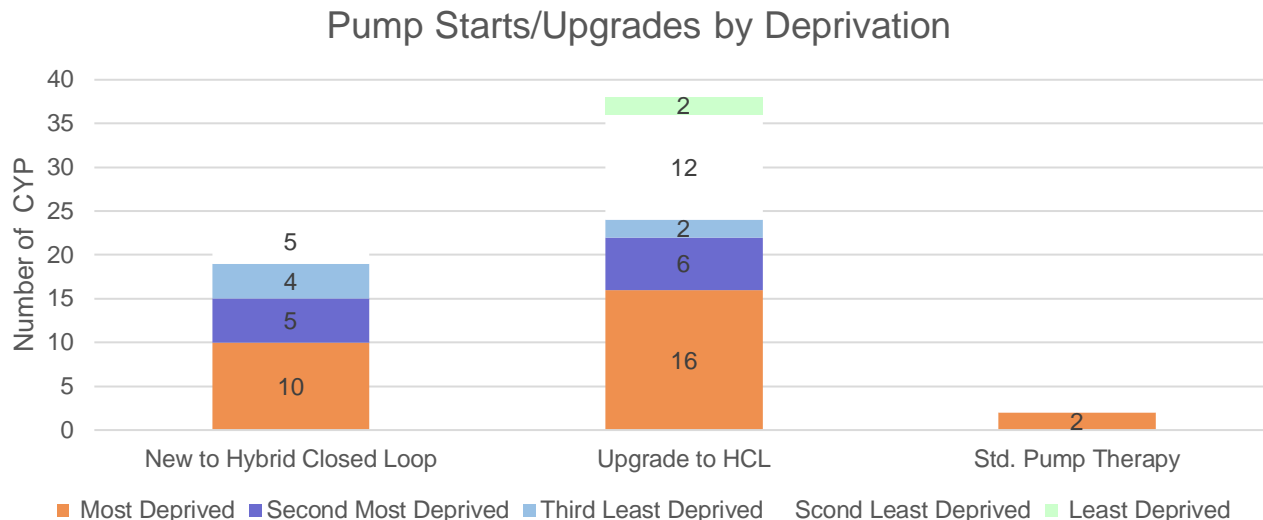
# Summary of Funded Support Worker and Dietitian roles

## Dietitian:

- Support and guidance to FSW and data collection/report updates.
- Contact with all CYP and families prior to all HCL starts.
- Produced simple leaflet to support getting the most out of the new technology.
- Targeted support and additional dietitian contacts for CYP with deteriorating TIR.
- Additional dietetic appointments for those who require it - carbohydrate counting/bolus insulin ratios/activity planning/hypo treatment/timing of insulin etc.

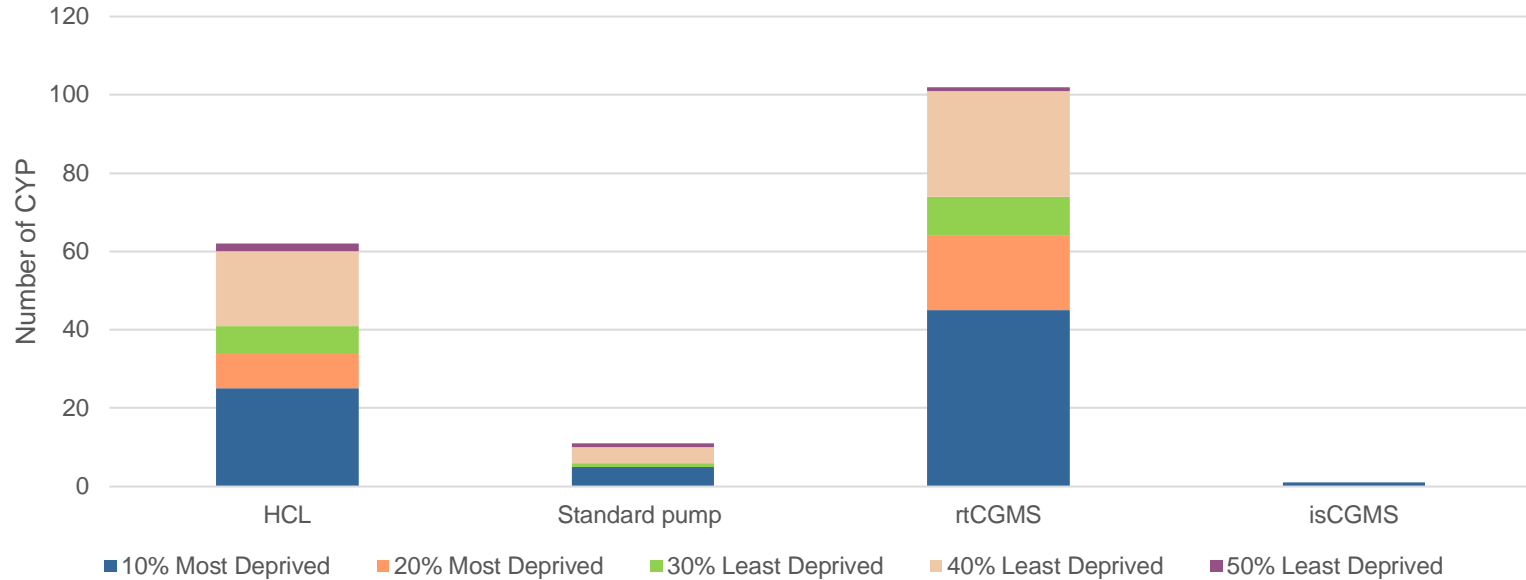
## Technology Starts by Deprivation: April 2023 - March 2024

Sixty-two children and young people with Type 1 Diabetes have started Hybrid Closed Loop Systems (HCL) from July 2023 to the end of the project year in mid-April. 60% of these were in the most deprived quintiles.



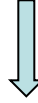
## Technology Use at the End of the Project

There are now **69** CYP using HCL (54% of the Type 1 Diabetes caseload) and **102** CYP using rtCGMS (89% of the case load).

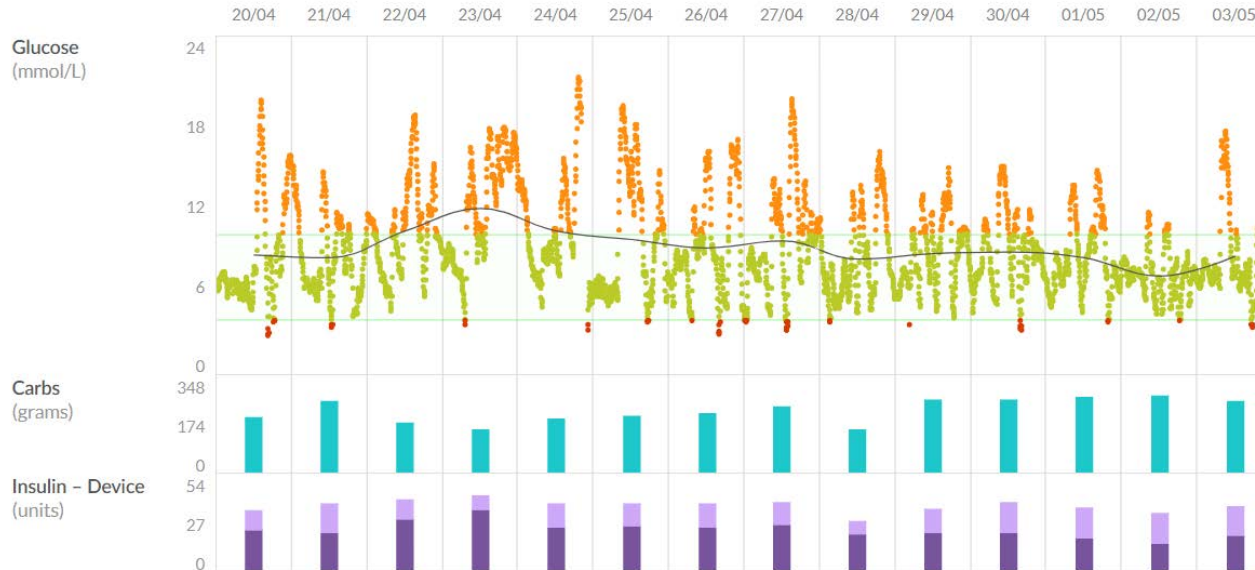


# FSW Time In Range review

TIR reduced to 62%, average 9.7mmol/L. Missing some snack boluses. PDSD tel. contact.



TIR for the following week improved to 76%, average 8.3mmol/L.



## Improvements in outcomes/HbA1c

- The pre and 3 month HbA1c data, available for 38 of the children who have started HCL therapy, shows significant improvements in glucose management.

The mean HbA1c before starting HCL was **58.4 mmol/mol** and median **58.5mmol/mol**. The mean 3-month HbA1c after starting HCL was **51.1 mmol/mol** and median **50mmol/mol**.

- Data for 51 CYP who have used the HCL for at least 8 weeks shows a pre start Glucose Management Indicator (GMI) of **61.3 mmol/mol** compared to an 8 week GMI of **53.6 mmol/mol**.

## Case examples

- Case 1: An 18yr old with poor glucose management and struggling with diabetes and mental health. In the most deprived quintile. HbA1c has improved from 80 mmol/mol to 58 mmol/mol.
- Case 2: A 4yr old in the most deprived quintile and of British Pakistani ethnicity. HbA1c before HCL was 75mmol/mol. Most recent HbA1c was 57mmol/mol and most recent GMI is 53mmol/mol.
- Case 3: An 18yr. old with Autism in the second most deprived quintile. HbA1c before HCL was 64mmol/mol. Most recent HbA1c, before transfer to the young adult service, was 50mmol/mol.
- Case 4: A 6 year old with newly diagnosed Type 1 Diabetes October 2023. Started HCL within 6 weeks of diagnosis. GMI for the 2 weeks prior to starting HCL was 66mmol/mol. 2 weeks after starting HCL the GMI was 51mmol/mol. Most recent HbA1c is 49mmol/mol.

# Feedback: Quality of Life/Reduction in Diabetes Burden

'It's amazing – it really is. Just to have my little girl back'

'It's great – I love it. It's just easier'

'The difference in her is amazing'

'I feel lighter – I used to be sluggish and droopy'

'It's a bit scary as you're not as in control - but the difference/change in her is lovely'

'A game changer – it's made life easier for us all'



Double thumbs up from one of the children with neurodiversity

# Summary

- The FSW and dietitian roles have played a vital role in supporting the improvement in technologies uptake, ongoing support and the quality of diabetes care
- Increased MDT capacity allows more focussed support for those in deprived and ethnic groups to achieve and maintain improvements in care and best outcomes

NHSE acknowledgment that our data is powerful and positive outcomes have been achieved by this funding resource

Management and ICB level support has secured a further 10 months of fixed term funding with a view to making the 1 WTE FSW and 0.2 WTE Dietitian hours permanent.

# Forward View

- At least 75% of CYP, with Type 1 Diabetes, using HCL within the next 3-6 months.
- Focus on the challenges of engaging and supporting those who have not yet chosen advanced technology use.
- Ensure that technology discussions are a routine part of clinic appointments
- Involvement of the FSW in the Seamless Transition Programme to support those on technologies moving to young adult services
- To start a dietitian led monthly peer support group for CYP with Type 2 Diabetes with consideration of technology use from diagnosis.