Improving access to diabetes technology for children and young people in low-income households

Over recent decades, diabetes management technology has developed rapidly. The traditional method of finger pricking to self-monitor blood glucose levels, coupled with the use of an injection pen to deliver insulin, has given way to a continuous glucose monitor that can communicate with an insulin pump that uses a control algorithm to deliver the right amount of insulin. This new technology, known as a hybrid closed-loop (HCL) system, requires much less input from the user, while providing improved clinical and quality-of-life outcomes (NICE, 2023).

Smartphones play a central role in this life-changing diabetes technology, whether by acting as hubs for data collection and storage, supporting insulin management and safety, or transmitting data to carers or healthcare professionals. It is often expected that children and young people (CYP) with diabetes and their families will already own mobile phones that can work with diabetes devices. The National Paediatric Diabetes Audit (NPDA) has, however, revealed persistent gaps in access to these diabetes technologies owing to ethnicity and deprivation. The deprivation gap in the North East and North Cumbria (NENC) has caused particular concern, owing to its high levels of deprivation; 34% of CYP in the area are living in poverty (Barnes et al, 2022).

During dedicated Poverty Proofing© Training to equip paediatric diabetes units in NENC with the skills and awareness to understand how poverty can affect access to healthcare, patients and families told the charity Children North East (CNE) that not being able to afford a compatible mobile phone and SIM card was a barrier to them accessing life-changing diabetes technology (CNE, 2023).

At the same time, pressure had been increasing on hospital Trusts to consider the environmental impact of the disposal of their unneeded IT equipment, such as laptops, tablets and mobile phones. When, in October 2022, NHS England invited funding bids for projects to help close the gaps in accessing diabetes technologies, the Children and Young People's NENC Diabetes Network (one of the 11 Networks working across England and Wales) saw an opportunity to bring these two seemingly unconnected challenges together with a simple aim:

"To refurbish unneeded NHS Trust devices to support children and young people with diabetes to access diabetes technology."

A successful bid was made to take hospital phones and laptops that had reached the end of their life in the Gateshead Health NHS Foundation Trust (GHFT), refurbish them to industry standard certifications, and offer them to families of CYP living with diabetes across the NENC to enable them to access diabetes technology and use all of its functionality.

A truly collaborative approach to the project then began, led by the CYP's NENC Diabetes Network. GHFT worked with a local IT Asset Disposal (ITAD) company to ensure all their devices were refurbished and certified before being given to Type 1 Kidz, a north east-based type 1 diabetes patient and parent support group, which was responsible for receiving referrals and delivering the required equipment to families.

Jenny Foster, Network Manager for the CYP NENC Diabetes Network said that, "From the outset, we knew we would have to call on the expertise of organisations in the region. We had an existing relationship with Type 1 Kidz, and working with them as delivery partners for the project was key to its success. Similarly, without the generosity of GHFT providing the equipment, the local ITAD company refurbishing them for us and local community interest company Town & Community providing valuable advice and guidance, this project would not have got off the ground."

After a short trial period of 4 weeks to test the new processes and pathways, the project launched

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in March 2023 and invited healthcare professionals (HCPs) working in paediatric diabetes units across NENC to refer individuals to the project. Dr Judith Reid, Clinical Lead for the project and Associate Specialist Doctor at GHFT, has pointed out that, "We offered referrals into the project without means testing; devices were offered to everyone. This meant that HCPs did not have to have difficult conversations with families about their income and ensured that referrals were made without any unconscious bias. We monitored referrals to assess deprivation score for reporting purposes and we were pleased to report that, at the end of the 12-month pilot project, 60% of those who received a device were living in index of multiple deprivation deciles 1–3 – so our no means-testing approach did work."

Before the project started, Type 1 Kidz was able to secure SIM cards through Vodafone's charities.connected scheme. These were pre-loaded with data, calls and texts, and enabled the project to offer devices with SIM cards. Emma Rogan, Delivery Manager at Investing in Children (the parent charity of the Type 1 Kidz Project) explained that, "Families living with diabetes had been telling us for years that not having a good enough mobile phone and not being able to afford data was causing them a problem with accessing diabetes technology. Being able to work with the CYP Diabetes Network on this project, providing phones and SIM cards directly to those families, was really rewarding for us and we have been able to see first-hand the positive impact it has had."

By the end of the pilot year, the project had given out over 300 devices to families across the NENC. The project team had also identified pathways that could ensure continuation of the offer to families of CYP with diabetes, while expanding the project to include an offer to young adults with diabetes is currently being explored.

The project relies completely on hospital Trusts challenging their current IT disposal processes and embracing an opportunity to change for the benefit of their healthcare community. The ethos of the project has been recognised nationally, winning the QiC Diabetes Equality, Diversity and Health Equalities Award, an HSJ Digital Equality, Diversity and Inclusion Award, and the Diabetes UK Paediatric Diabetes Poster Award.

Project resources and organisations involved with it.

Project evaluation film
https://bit.ly/3Id5Nl0

Final project report
https://bit.ly/46xTrNE

Children NE
https://children-ne.org.uk

Children and Young People's North East and North Cumbria Diabetes Network
https://www.cypdiabetesnetwork.nhs.uk/north-east-north-cumbria

charities.connected
https://www.vodafone.co.uk/mobile/everyone-connected/charities-connected

Town & Community
https://www.townandcommunity.co.uk

We have also been invited to speak at national and international conferences, including BSPED and ISPAD, ensuring that this innovative approach to tackling inequalities is shared and, hopefully, replicated elsewhere.

An evaluation film was recently launched, which includes young people talking about the positive impact that having a phone from this project has had on the management of their diabetes. A full project report had also been written that includes process maps to support replication of the project. The film, project report and other relevant links can be found here or by following the links in the box above.

Since the pilot project concluded, a business-as-usual model has been developed, and North Tees & Hartlepool NHS Foundation Trust has joined the project as an additional donation site, with a generous donation of over 200 compatible mobile phones. To the end of September 2025, the project has continued to build on the success of the pilot, with almost 400 refurbished NHS phones now being used by families to access diabetes technology. The next phase of the project is to secure enough donations to be able to expand the age range and offer phones to support young adults living with diabetes to access technology. ■

Please contact jenny.foster5@nhs.net for more information.

References

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Children North East (2023) *Common Themes: Poverty Proofing Paediatric Diabetes Care*. Available at: https://bit.ly/4867knB (accessed 29.09.25)

NICE (2023) *Hybrid closed loop systems for managing blood glucose levels in type 1 diabetes* (TA943). NICE, London. Available at: https://www.nice.org.uk/guidance/ta943 (accessed 10.09.25)