NHS
South Yorkshire
Integrated Care Board

ACCESS TO ELECTRONIC ASSISTIVE TECHNOLOGIES

Exploring local services and pathways to access technology for health and care in South Yorkshire

Summary

This report describes the process, results, and recommendations of a project, funded by NHS South Yorkshire Integrated Care Board, exploring the local pathways and services that support and provide electronic assistive technology for people who have health and care needs.

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1 Executive summary

In 2015 specialised services were established for Alternative and Augmentative Communication (AAC) and Environmental Control (EC), with the goal of ensuring that there is an equitable service for people requiring these electronic assistive technologies (EAT). Great work goes on in local teams to maximise the potential of those who do not meet specialist service criteria, however there are some groups of people who potentially may not get the same level of service due to the complexity of their physical and cognitive disabilities. A project, funded by the South Yorkshire Integrated Care Board (ICB), was initiated in 2022 to explore local pathways for access to EAT (including AAC and EC) across Barnsley, Sheffield, Doncaster, and Rotherham. This project considered EAT broadly and its potential impact on a person having some level of independent control.

Clinicians from health services, social workers and occupational therapists in local authorities, specialists in special schools, and the managers of day and residential services were invited to take part in an online individual- or a team- conversations. The aim of these conversations was to find out about arrangements for EAT assessment, provision, and access to support for people accessing their services who do not meet specialised services criteria.

Information was gathered from several health and local authority staff across the South Yorkshire area in early 2023. Pathways to access for EAT varied greatly across the area and were significantly different across health and social care providers. People reported challenges in levels of awareness, in access to equipment for assessment and practise, and limitations in services or pathways for people who may not be able to use EAT functionally and consistently, and in a range of situations.

It is recommended that further work is required to raise awareness about the potential benefits of EAT for people with complex disabilities and embed technology skills in the health and care workforce. Access to EAT equipment for assessment and trial periods could be supported at a regional or ICB level utilising existing infrastructure. Improved consistency

in messaging about the advantages of technology for independent control across ICB footprint may help to increase awareness and engagement with technology across services.

2 Introduction

2.1 Context

The South Yorkshire Integrated Care Board (ICB) funded this project. The ICB is a statutory NHS organisation responsible for developing a plan for meeting the health needs of the population, managing the NHS budget, and arranging for the provision of health services across South Yorkshire.

They work with the South Yorkshire Integrated Care System, representing a population of over 1.4 million, to deliver health and care services across 4 areas: Sheffield, Rotherham, Doncaster, and Barnsley. The South Yorkshire ICB includes:

- 186 GP practices
- 5 acute trusts
- 9 NHS trusts
- 4 local authorities
- 3 community/mental health trusts
- 1 ambulance trust
- Over 6000 VCSE organisations

Integrated care systems are central to implementation of the NHS Long Term Plan[1] as they bring together local organisations to redesign care, improve population health, and reduce health inequalities. They are intended to strengthen partnership working and improve collaboration across health and social care organisations to provide services that are tailored to the needs of local populations. The long-term sustainability of integrated care systems is contingent on digital transformation of health and social care[2], which includes accelerating the adoption of technologies that can improve care and reduce costs.

[1] https://www.longtermplan.nhs.uk/
[2] https://www.gov.uk/government/publications/a-plan-for-digital-health-and-social-care/a-plan-for-digital-health-and-social-care

2.2 Electronic assistive technologies

Electronic Assistive Technology (EAT) is a subset of a wider range of products and services known as Assistive Technology (AT). AT is designed to support and enable people with disabilities, either acquired or congenital, to participate in activities with greater independence and safety. With a global aging population, EAT has an important role to play in enabling and supporting those with disability and their carers[3]. Environmental controls (EC), augmentative and alternative communication (AAC) devices, telecare, and other electronic systems that provide broader access to independent control are covered by the title Electronic Assistive Technology (EAT).

Environmental control (EC) systems enable people with disabilities to have a level of independent control over many devices in their homes. EC perform functions such as changing the television channel, turning on and off lights, or calling for attention. Access can be adapted so that control systems are suitable for people with limited control of their physical movement.

AAC refer to range of strategies that support people to communicate when their speech isn't sufficient. AAC include signs, gestures, and paper-based resources such as picture books. Electronic AAC devices can be specific devices or adapted computer-based systems (such as tablets) that produce synthetic speech from messages that are entered into or stored within them.

[3] **Najafi, N. & Cowan, D. (2019) Handbook of Electronic Assistive Technology (2018). ISBN: 9780128124871**

Telecare is an equipment monitoring service that offers remote support to elderly, disabled and vulnerable people who live alone in their own homes. They usual consist of an alarm unit, and/or pendant and monitoring from a team who can access suitable support or assistance.

There are estimated to be over 14 million people with disabilities[4] who could benefit from some form of AT in the UK. Estimates suggest that 4 million could benefit from Telecare[5] and up to 300000 could benefit from AAC[6]. This demand is likely to increase with the change in demographics and more people living with multiple and complex health conditions.

2.3 Background to the project

Specialised services for EC systems and AAC were established in 2015 following restructuring of the NHS. Specialised services are defined as being for EC or AAC equipment which have low incidence and high cost. Criteria were developed for the specialised services that defined by whom assessment and provision of EC and AAC was undertaken[7]. People identified as needing EC or AAC would initially be assessed by their local health and care teams and then those requiring specialist assessment (as defined by the criteria) would be referred to their regional specialised service. There are currently 13 specialised EC/AAC services in England which are funded by NHS England specialist commissioning. The service covering the South Yorkshire ICB geography is the Barnsley Assistive Technology (BAT) Team, based in Barnsley Hospitals NHS Foundation Trust. BAT cover the whole of the Yorkshire and Humber region.

[4] https://commonslibrary.parliament.uk/research-briefings/cbp-9602/
[5] https://www.researchgate.net/publication/320042941_Who_Uses_Telecare
[6] https://onlinelibrary.wiley.com/doi/10.1111/1460-6984.12235
[7] https://www.england.nhs.uk/wp-content/uploads/2018/08/Complex-disability-equipment-alternative-and-augmentative-communication-aids-all-ages.pdf

Criteria for AAC assessment by specialised services stipulates that an individual has a severe/complex communication difficulty, a discrepancy between their level of understanding and ability to speak, understand the purpose of AAC beyond cause and effect understanding, and are able to demonstrate that non-electronic AAC is insufficient to meet their needs[7]. Exclusion criteria includes having preverbal understanding, not having cause and effect understanding, and having impaired cognitive skills that would prevent a user from retaining information about how to use equipment.

To access EC specialised services, people will have a significant physical disability and be unable to operate standard controls in the home, are cognitively and physically able to use EC equipment consistently, and demonstrate prolonged motivation to use EC. If non-specialist solutions are appropriate or people do not have the cognitive ability or motivation to learn to use EC, they may not be suitable for specialised services[8].

For older people and for children and adults with more significant learning disabilities or cognitive impairment there is a broader consideration of technology for access to independent control which is beyond the current scope of specialised services. This could be considered a more basic form of EC such as door openers, or AAC, for example single messages. There is not a clear assessment pathway for electronic assistive technology for some people who may, for example, want to do one or a small number of things independently, for example skip through music on an iPad, and would therefore not meet specialised services criteria.

In 2016, NHS England developed guidance for commissioning of AAC services and equipment[9]. The guidance states that:

> "Most children and adults who need AAC will be supported by local AAC services […] approximately 0.5% of the population or 50 in 10,000 people […] That is, around 90% of the AAC population require local AAC services[…]" (4.2.11: p6)

[8] https://www.england.nhs.uk/wp-content/uploads/2018/08/complex-disability-equiptment-environmental-controls-all-ages.pdf
[9] https://www.england.nhs.uk/commissioning/wp-content/uploads/sites/12/2016/03/guid-comms-aac.pdf

> "Local AAC services are required to provide on-going support for individuals who have been referred to specialised AAC services – during the assessment process and following the provision of equipment, as referrals accepted by NHS England specialised AAC services are not onward referrals" (4.2.12; p6)

The guidance stipulates that local services should manage the AAC pathway, have local expertise within a multi-professional team, and access to a loan-bank of resources to support assessment and provision of range of equipment. The guidelines also recommend a joint commissioning budget across health, education, and social care. This guidance is specifically for AAC. There is currently no local commissioning guidance for environmental controls.

In 2015, NHS England produced guidance for commissioners regarding technology enabling care services (TECS), including telecare[10]. In this guidance, it is recognized that:

> "In social care, community alarms and telecare are commonplace but not necessarily integrated with health services. For TECS to be most effective, it requires an integrated approach." (p24)

> "Technology can enable better continuity and coordination of care and improve the quality of life of people with multiple long-term conditions who are at risk of institutional care." (p24)

The guidance provides extensive information about how technology enabling care can support the commissioning priorities for both health and social care services and support better personalised care. The guidance focuses on tele-services and does not include other forms of assistive technology.

2.4 Summary

The establishment of Integrated Care Boards covering a larger geographical area provides an opportunity to drive cost-efficiencies and improve equity of access. The growth of

[10] https://www.england.nhs.uk/wp-content/uploads/2014/12/TECS_FinalDraft_0901.pdf

technology-enabled care alongside greater integration of health and social care services offers a juncture from which to consider all types of electronic assistive technologies and the opportunity to look across pathways to enhance access to independent control for individuals who could benefit.

The purpose of the current project was to understand what local service pathways for EAT look like in South Yorkshire and to identify any gaps in existing pathways with a view to learning from good practice within the system and identifying mechanisms to improve access to EAT for the local population.

3 Method

A project was designed by members of the BAT in collaboration with a stakeholder group of people with an interest and/or experience of EAT outside of the South Yorkshire ICB. The aims of the project were:

1. Consider different EAT pathways;
2. Establish what EAT resources are available to teams;
3. Gather information about funding routes for EAT.

A list of services thought to be involved or potentially involved in the assessment, provision and/or implementation of EAT was collated and several semi-structured interview guides were developed by the stakeholder group for collecting information. An independent researcher with experience of leading a local AAC service and of carrying out research concerning AAC was recruited to contact services, collect, and analyse data, and prepare this report.

3.1 Involvement

Clinicians and practitioners from NHS organisations, local authorities, and education staff at special schools within the South Yorkshire ICB and known to BAT were contacted by the researcher via email and invited to be involved in the project. Those who responded to the

email and who agreed to be involved were sent further background information and a copy of the semi-structured interview guide.

Some individuals who were contacted felt that it would be beneficial for the researcher to attend local or regional meetings to speak with several colleagues at the same time rather than carry out a series of one-to-one interviews. Others recommended contacting colleagues in other services in South Yorkshire, who were then also invited be involved.

Finally, a few local services and support groups were identified through an internet search. The interviewer attended one advocacy group to gather insights from service users about their experiences of EAT.

Not all those contacted by the researcher responded to the email invitations and so not all local services providing or supporting EAT are reflected in the information gathered.

This report has been prepared maintaining the anonymity of those interviewed and excerpts from the interviews are presented without details that could identify specific regions or services.

3.2 Gathering information

Online meetings were arranged between the researcher and the people who agreed to be involved using the videoconferencing platform Microsoft® Teams. During the meetings, the semi-structured interview guide was used to inform the individual and team/service conversations, and they also shaped discussions during part of bigger, regional meetings. Notes taken by the researcher during the conversations were recorded in a Microsoft ® Word document, and stored securely.

NHS services and schools completed a table to document EAT equipment and resources that they had available to them for assessment or loan either during the information gathering meeting, prior to the meeting, or afterwards.

3.3 Analysing information

The information collected during the meetings was amalgamated into tables designed for this project. Descriptive information about the people involved in the project, the services they represented, and their access to equipment and funding was added to an Excel spreadsheet. Using Excel tools, descriptive statistics about the information were generated to provide a basic overview of current service provision and availability of EAT equipment and services in local teams.

Qualitative data collected during the online meetings was organised into tables to allow for comparison within each of the service types (e.g. schools, adult community NHS services, local authorities etc.). Data was subject to a content analysis. The researcher coded data by allocating single words or short phrases to create descriptive summaries of the information gathered in response to each question, across service types. Codes where then drawn together into overarching themes, informed by the aims of the project i.e. pathways, resources, and funding, within each service type. Quotes and cases that represent good examples of strengths and challenges, as well as those that reflected synergies across services were highlighted during the coding process and subsequent analytic phases.

A narrative summary of the similarities and differences between themes and across services was generated and examples of good practice identified. These summative statements in response to the themes – pathways, resources, and funding - were shared with the stakeholder group for their consideration. The group were encouraged to challenge the findings at this stage, which led to a discussion about the recommendations that could be drawn from the results. The summary statements also informed the discussion with the advocacy group who helped the researcher to attend to specific areas of the data that were pertinent to service users.

4 Results

In total, 34 information gathering events took place over a period of 5 months from January to May 2023. People were involved from each area within the ICB region. Thirty-one events

with service providers took place, 2 with regional professional leads (regions that extended beyond the South Yorkshire ICB geography), and 1 with an advocacy group for people with Learning Disabilities (LD) in Sheffield. Diagram 1 represents the information gathering events with service providers in each area.

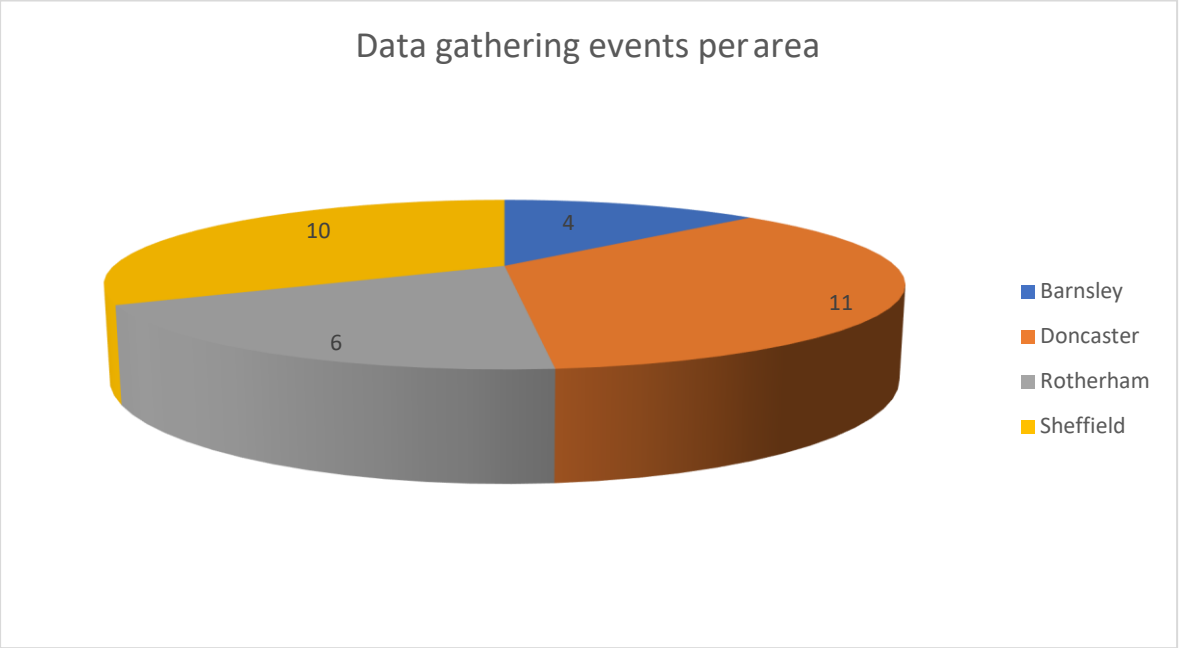

Diagram 1: a chart representing the number of data gathering events per area of the ICB

Diagrams 2 and 3 represent the job roles of people who took part in the data gathering events and the services that they represent.

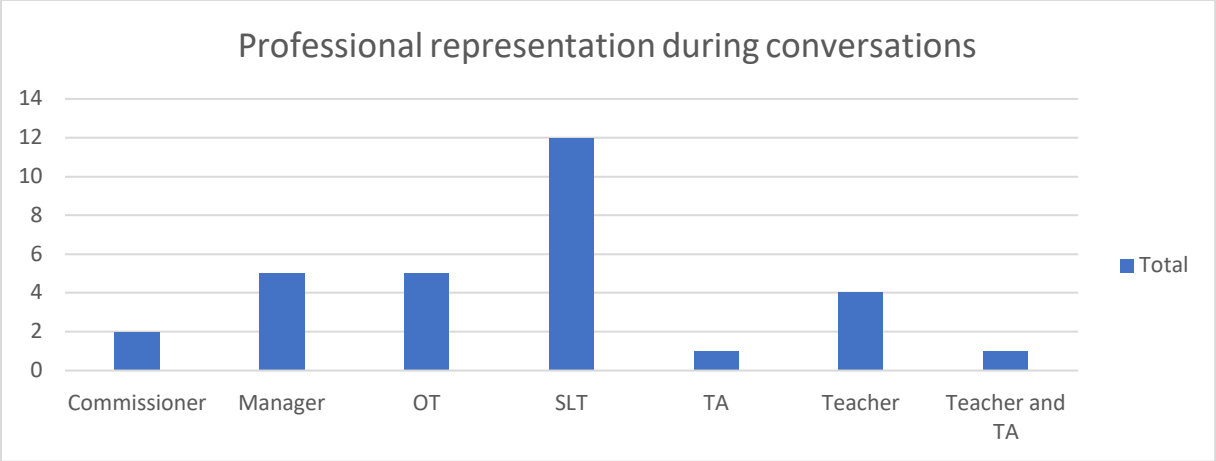

Diagram 2: Job roles of those who participated in information gathering meetings

OT = Occupational therapist

SLT = Speech and language therapist

TA = Teaching Assistant

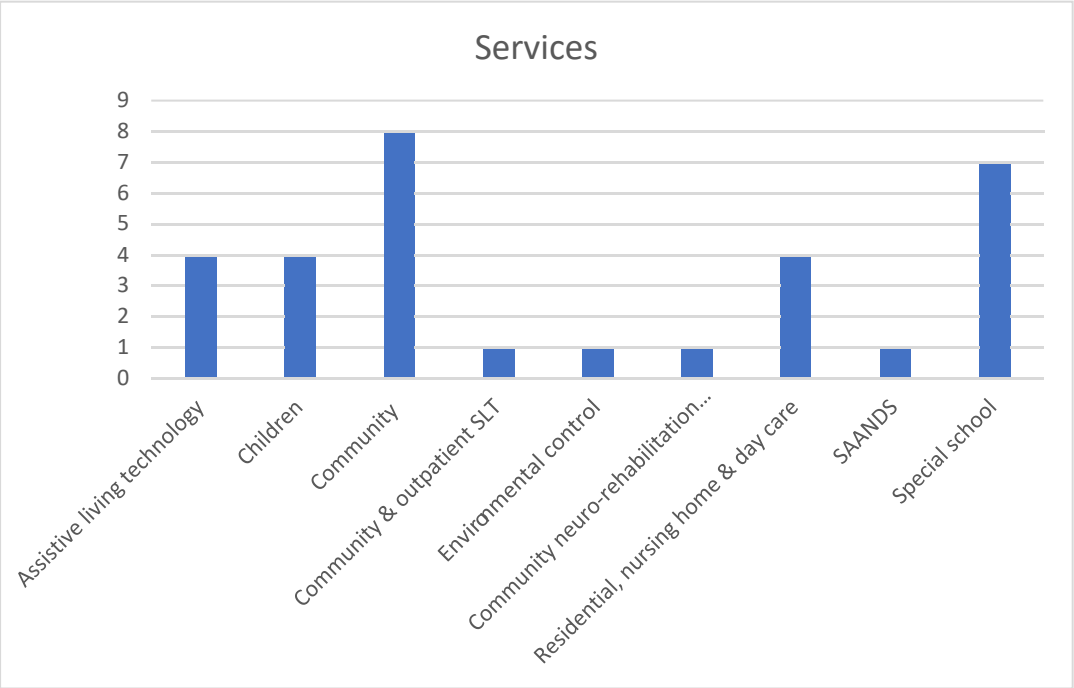

Diagram 3: The service types represented by people who participated in the information gathering meetings

SAANDS = Sheffield Adult Autism and Neurodevelopmental Service

The narrative summaries of information from each service type are presented in Table 1 in the appendix. The following paragraphs present summary statements of the qualitative information in relation to the main aims of the project.

4.1 Pathways

Local pathways for EAT access differ considerably between NHS, local authority (LA), private care providers, and schools. NHS services tend to have pathways that are informed by specialised service criteria, often directing them towards providing services that will ultimately result in BAT referrals. NHS paediatric SLT services work with special schools to support access to EAT via the specialised service route. There are no pathways to EAT in schools for children who are unlikely to meet specialist service criteria.

Case studies from a paediatric NHS service:
"Child A was using 'more' and 'no' on 2 buttons on an iPad. PECS (Picture Exchange Communication System) hadn't worked and low-tech hadn't worked but there was no way to progress that child [with EAT] as they do not meet criteria, especially the language functions component of the criteria"

"Child B can use a low-tech QWERTY keyboard. He waits for a listener to revoice his selections on low-tech devices. He doesn't ask questions or comment about liking things so doesn't meet BAT criteria."

LA telecare services have pathways for access to telecare to support hospital discharge and promote community independence. There was limited evidence of cross-referral between the NHS and LA, although some LAs reported an awareness of BAT/other private EAT services. Residential and day services do not have pathways for accessing EAT but may refer on to other services or assume that EAT will be considered as part of referrals for more generalist support e.g. rehabilitation.

A case study from a local authority:

One hundred GPS fall detector pendants have recently been procured for facilitating discharge from hospital. They are available to elderly wards for trial and issue. This initial trial was funded by the ICB. However, there are no clear pathways through which to follow-up, or evaluate this initiative at present, nor are there any clear pathways for joint local authority/hospital funding of such devices for future use.

4.2 Resources

During analysis of the equipment and resources information provided by NHS services and schools, it was noted that few services were able to provide details concerning the number of pieces of EAT equipment available. Equipment, when available, was either described as 'one' or 'a few'. Staff resources were often described as 'available' to provide support EAT or not, and whole-time equivalent information was rarely provided. Staff resources included qualified and support staff. For the purposes of analysis, the availability of resources was coded as 1 (available) or 0 (not available). A summary of the resources available by type (rather than specific item) is presented in Diagram 4. A more detailed chart is available in the appendix (Diagram 5).

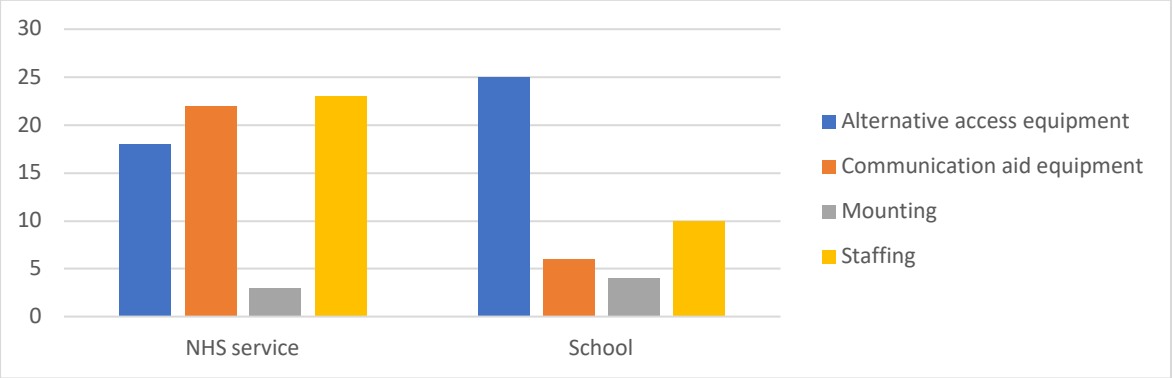

Diagram 4: Summary of types of EAT equipment and resource currently availability to NHS services and schools in South Yorkshire

The availability of resources in different services and special schools varied widely. This was particularly noteworthy in schools where some had EAT equipment available in each classroom and others had no EAT equipment available at all. The variance in availability of resources has not been presented at individual conversation-level detail to preserve the anonymity of people, services and schools who participated in the project.

There is very limited EAT equipment resource available to most local NHS services which impacts on the ability to carry out assessment, restricts access to the experience of using EAT (for staff and service users), and reduces general levels of awareness of the possibilities of EAT for greater independent control.

A case study from a community adult learning disability service:

A lady was referred to the team recently who was seen by BAT but the hi-tech [EAT] communication device trialled was too complex/over-stimulating. The Speech and Language Therapist (SLT) in the Adult Learning Disability (ALD) team has implemented partner-assisted switching, but it took 6 months to get funding sorted through the Court of Protection and deprivation of liberties safeguards (DOLS). Staff turn-over at residential home was high, so it became difficult to train staff and the limited capacity within the ALD team meant that implementation was not supported well-enough. Staff at the home were not interested in technology and so didn't always provide the service user with the AAC switches or respond to them when they were being used.

Each local authority area demonstrated strengths in either service provision, ambition, digital strategy, or awareness of EAT as well as telecare solutions. People suggested that wider AT and telecare could be more closely integrated but barriers to this included awareness of technology within LAs - "you don't know what you don't know" - and the compatibility of analogue and digital solutions.

"People don't know what they don't know": An example from a local authority:

In one area, there has been some work done on raising awareness [of EAT] so that all service users get equal opportunities to access care technologies. However, this work also highlighted that utilisation of technology depends on access to resource (specialist knowledge as well as equipment), appropriate guidance and leadership, and for technology developments to be shared across the system so that everyone is getting good information to drive technology use forward. One of the challenges with Care Tech is that there are lots of departments involved - commissioning, finance, maintenance etc – which makes implementation challenging.

Across LD community services there is a lack of specialist EAT knowledge within the team amongst SLTs and OTs to support assessment, implement pathways, or develop skills within the teams. Where specialist staff are in post (demonstrated in some in adult or paediatric SLT services), there is greater consistency of pathways for EAT, provision of EAT equipment, and skills and knowledge of staff in the wider team.

An example of the impact of specialist staff on AAC pathways:

One paediatric SLT service has a specialist AAC clinician. She provides training and support to other SLTs in the service on AAC, support referrals to BAT, has access to a small bank of equipment to support assessment, and therapy assistants are available and skilled to provide blocks of therapy in schools for children who receive AAC devices.

The schools in her area both mentioned her by name in their interviews and praised their productive working relationship with her. Both schools reported working closely with the AAC specialist and both had implemented local initiatives to support AAC in their schools. One school had enlisted 'AAC champions' to support a whole-school approach to AAC. The other had developed a local 'Considering AAC' pathway to standardised what they offered to children working towards specialised service referral.

Services where there is currently a strong pathway for EAT have some challenges with longer term sustainability because of a lack of strategic resource planning.

A model service?

One area has a specialist SLT who is skilled and experienced in assessing AAC and EC for all adults. She has a bank of equipment to support assessment, provide loans, and can issue EAT devices via an equipment supply contract provided they are over the value of £50. Other professionals in her area, such as those in the adult learning disability team, are aware of this service and refer to it; she has good links with BAT. However, this service is individual dependent. There are currently no continuity plans in place to manage an event in which this individual leaves her post, undermining the sustainability of this service.

Another area has a discrete multi-person team of specialist SLTs supporting the assessment and recommendations for AAC within a wider paediatric service. They provide service-wide training and have access to a large group of professionals within which they can continue to develop specialist AAC skills. This team also has a funding route for equipment, via their host organisation (an NHS Trust). However, the team have limited access to equipment for assessment and trial periods and no access to maintenance or repair services for the small number of devices that they do have within the service. This means that some children will still 'slip through the net' and when equipment fails, funding is sought for replacement devices rather than repair.

Knowledge and awareness of EAT was identified as an issue by both commissioners and providers of residential and day care services. Some providers recognised that there is gap in the transition point between children and adult services where young people who use EAT may not receive suitable ongoing support for use of their equipment.

A case study from a day service:

A 19-year-old who attends day care has an AAC devices but some of the buttons on his device are breaking and children services are no longer able to support the technology. It is hard to work out who can support it in adult services. The same is true of electric/powered wheelchairs [access to support is challenging].

4.3 Funding

Funding varies considerably across the region and between health and LA services. Most EAT provided via health services is accessed by individual funding requests (IFR) and/or charities but both these funding routes are time-consuming to apply for which, under current resource constraints across services, has resulted in reduced availability of EAT for people who could benefit.

Case studies from adult community SLT teams:

One team received 2 recent referrals for people with Motor Neuron Disease (MND) but their voices had already deteriorated too significantly for them to explore voice banking. Earlier referrals would provide the greater opportunities to explore EAT options.

Team also reported that getting hold of AAC devices through charities or IFRs can be slow which is a significant challenge when the people who could benefit from them have deteriorating conditions such as MND.

Staff awareness of the potential benefits of EAT was identified as a significant a knowledge gap which may result in funding not being prioritised for technology. People in LAs recognise that telecare monitoring via paid subscription limits some people's ability to access this type of support because of the financial burden. This model also limits the potential for telecare to be used to its fullest capacity in health promotion and prevention.

A case study from a local authority:

Telecare responders attend to over 400 calls for the Yorkshire Ambulance Service each month thereby reducing the demand on ambulance call out and hospital admission. The current service model [of self-funded subscription] precludes some people from accessing technology for early intervention and promotion as they may not prioritise finances for a 'just in case' service.

Schools, residential and day services did not have access to any funding for EAT. Their students and service users who use EAT accessed devices and funding from elsewhere.

4.4 Sheffield Voices

Members of the advocacy group provided examples of their experiences of using technology to support them to be more independent. The technology that they used was commercially available and included smartphones, and voice recognition devices to control aspects of their environment e.g. Echo to control lights or play music. One member reported having two phones – one for photos and music, and a basic model for phone calls. They had all accessed technology either independently or with support from friends and family.

The group had experience of supporting people with LD to access technology. They ran a digital inclusion event in 2021/22 to support people to get digitally connected in the wake of the COVID19 pandemic. They reached out to people through directly contacting supported living accommodation, day services, and respite centres and hosted an event at the Workplace. They had been able to give tablet computers to people to enable them to access online support. They reported that they met with some resistance from carers and parents who were very concerned about internet safety and often reluctant to let individuals access the internet. The group had found during this project that there is a need to provide hybrid support i.e. in-person and online support, to get people to successfully connect with digital technology. The amount of support required varied from person to person.

They recommended that staff in supported living and day services need training to help people to access technology. Staff also need to support people to access information about new technologies. The group suggested that flyers in GP surgeries, churches, tourist

information centres, and libraries were all good ways for people to access information about technology services.

> The case for supporting individuals with LD to access technology:
>
> During the digital inclusion project, the group met Lorraine (pseudonym). Lorraine's parent needed a lot of convincing to let her use a tablet because of concerns about safety. Lorraine was very quiet when she started attending online groups, but her confidence grew through having the opportunity to use the tablet and connect with people online. Now she is much more talkative and wants to get involved in other initiatives run by the group.

Having access to technology had supported Lorraine's growth in confidence, which led to her ability to see new opportunities for independence. Members of the group recognised that technology can support personal development which then provides the foundation and self-belief required for people to desire access to greater independent control.

5 Discussion

The following discussion revisits some of the results in terms of the aims of the project: to understand what local service pathways for EAT look like in South Yorkshire and to identify any gaps in existing pathways, with a view to learning from good practice within the system and identifying mechanisms to improve access to EAT for the local population.

5.1 Strengths

There are examples of well-resourced services in the region – services that have access to specialist staff and EAT equipment for assessment, trial, and longer-term loans. These services usually also have established pathways for supporting the assessment, provision of EAT, or onward referral to specialised services (BAT). They have an awareness of other services (beyond their organisation) that can provide training, funding, or support for people who access EAT.

Services that were less well-resourced showed an interest in the topic of EAT and a willingness to engage in this project, and to learn how they could improve their EAT offer. Many reflected that the conversation helped them to consider gaps and opportunities in their knowledge of EAT and to discuss further with their teams how it could be more strongly represented within their service offer.

Local NHS clinicians all had a good knowledge of the specialised service for EAT and were aware how to access training and support for AAC. People working in local authorities drew on examples of how they were seeking to evolve their service, and some were actively exploring how to integrate the traditional telecare offer with other assistive technologies and digital innovations. There are strong strategic drivers locally that are working to develop pathways and skills that encompass digital and technological health and care innovations in line with the NHS Long Term Plan and the Plan for Digital Health and Social Care.

5.2 Challenges

Pathways for EAT, where they do exist, are largely informed by the current service specification for specialised services. This results in the phenomenon whereby professionals 'work towards criteria' rather than judging individuals on their own abilities and potential to engage with EAT.

The relative strength of EAT representation in services is often dependent on the specialist skill and interest in EAT of an individual/s within that service team. Specialist staff were usually part of large clinical teams, althought there were very few examples of where EAT specialism was supported within smaller teams. Where EAT specialist staff were in post, the wider team were able to develop a more holistic, 'service-wide' approach to embedding EAT within wider service structures. In services that had no EAT specialist staff and no legacy of EAT specialism within the service, it was difficult for professionals to develop skills to deliver EAT effectively due to the resource demands associated with EAT interventions (e.g. securing funding, programming equipment, training, establishing review protocols etc.). In teams that did have access to specialist professionals, there was rarely also access to equipment management support, especially maintenance and repair of existing stock or items procured for individuals.

Different funding routes for EAT were described across local authority and NHS services. The availability of funding often dictated the service structures. A lack of awareness of the potential for EAT to enhance health and care and to promote independent control has made it difficult to justify funding in this area.

5.3 Implications

Current gaps in pathways, awareness, and therefore opportunities to access EAT may be exacerbating health inequalities for marginalized groups in the community, such as those with learning disability. Where services are supporting people to 'work towards' specialised service criteria, individuals who do not or will not meet criteria rarely get opportunities to experience using EAT. Service constraints and restrictive definitions of what functional or successful technology use looks like also shape practice, which can result in limiting opportunities and therefore the horizons of some individuals who could benefit from EAT. Accessing EAT for assessment and/or trial periods is time-consuming, and therefore costly, so if there is little perceived functional benefit, professionals, families, or carers may not pursue funding. There is also a lack of knowledge and information about how technology can support independent control, what types of technology are available, and limited awareness by care providers of how technology can be accessed.

A recent report by the cross-party thinktank Policy Connect found that the barriers to the use of EAT can be grouped into three main categories: awareness, availability, and support. That is: being aware of the tech that can help, having the right tech available, and having the support to use it.

> "As many have remarked with regard to AT: people don't know what they don't know. We need to build broad-based awareness of AT in part so we can discover the true scale of need."[11] (p7)

The finding of the current study echo the main themes in the Policy Connect report.

[11] https://www.policyconnect.org.uk/research/frontline-accessibility-building-atech-awareness-and-confidence-among-public-service

Health services have limited or no access to equipment maintenance or repair services, with the result that where equipment is provided, it can only be replaced if it is broken. LA telecare services have effective review and repair systems, but less availability of staff that can provide support to adapt equipment to meet specific access needs of individuals or implement therapeutic interventions to promote ongoing equipment use. Gaps in access to maintenance services in healthcare organisations, and to staff to provide therapeutic support in local authorities, leads to challenges in long-term use of EAT through increased risk of device failure, disillusionment, and ultimately non-use and abandonment. This may have significant cost-implications to the system.

A recent report by the NIHR School for Social Care Research[12] found that focusing on the role of telecare to enable people to live independently may only exploit a fraction of the potential of EAT. Sheffield Voices shared how greater digital connectedness increased access to online services and improved wellbeing for people who accessed their digital inclusion project. More holistic assessment of the role of EAT, including better matching of the technology to the priorities of the individual may improve usefulness. Closer collaboration between LAs and the NHS, and the creation of EAT pathways that span organisations, will also make it easier to demonstrate cost-effectiveness across the system e.g. by preventing hospital admissions or moves into care, or by reducing loneliness and dependence on services.

There are services in the region that have the infrastructure and equipment management processes to support long term repair and recycling of EAT equipment e.g. BAT, LA telecare services, Medequip. These models of equipment provision and service delivery can be harnessed to improve the timeliness of interventions so that the right technology is provided to the person in the right place at the right time. Closer collaboration across LA and health services can also lead to professionals with suitable skills and experiences providing the right support to promote ongoing EAT use for greater independent control.

[12] https://www.sscr.nihr.ac.uk/wp-content/uploads/SSCR-research-findings_RF089.pdf

6 Recommendations

1) ***Workforce development*** – building on existing skill and expertise of EAT in the system, and the universal recognition across services that technology skills are necessary and relevant, there is an opportunity to develop and establish a technology-enabled workforce. **Embedding technical leads at all levels in each organisation or service-level provider will help establish the skills and knowledge of independence enhancing technologies that are required to support more equitable access to EAT.** Greater prevalence of technology awareness and skills will also create a culture of technology enabled care to embed longer-term sustainability in the workforce.

   Within professional groups, competing clinical pressures often result in EAT being overlooked. For example, SLTs prioritise eating and drinking assessments over AAC and OTs tend not to develop EC skills in local health services. Access to technology-informed technicians, assistants, and care staff would support professionals to apply their generalist knowledge of communication and/or human occupation through available technology and in conjunction with a workforce that could support, maintain, and sustain implementation and long-term use.

   This recommendation aligns with the recent NHS workforce plan[13] and with the support of existing workforce training recommendations[14] and initiatives[15].

2) ***A regional equipment supply service*** - access to EAT equipment can be improved and made more equitable by building on existing infrastructure. There are services within the region that have the requisite skills, systems, and processes for EAT procurement, provision, review, and maintenance. **Mobilising and extending these existing resources across the region would support local services to be able to improve the specificity of their assessment and provide opportunities to people to experience EAT equipment that is currently unavailable, and**

[13] https://www.england.nhs.uk/wp-content/uploads/2023/06/nhs-long-term-workforce-plan-v1.2.pdf
[14] https://www.policyconnect.org.uk/research/frontline-accessibility-building-atech-awareness-and-confidence-among-public-service
[15] https://www.skillsforcare.org.uk/resources/documents/Support-for-leaders-and-managers/Managing-a-service/Digital/Core-digital-skills-in-social-care.pdf

therefore 'unknown'. Improving access and availability of EAT for assessment, trial, and longer terms loan periods will enable local professionals and care teams to support people who will not meet specialised services criteria to access technologies for greater independent control. It will also provide the opportunities to reduce costs by increasing effective use of EAT and reducing current waste incurred through the lack of access to repair and reuse services.

There is a risk that providing access to equipment from a centralised source detaches financial and governance responsibility from the service recommending the EAT. Further work is necessary to establish how additional responsibilities for EAT such as training, embedding devices within an individual's milieu, and review of use, safety and suitability are adequately managed at local service level. It is recommended that an equipment provision/loan system is co-produced with services to ensure appropriate individual support is provided alongside equipment.

This recommendation aligns with national strategies to improve the availability and use of technology in health and social care provision[16],[17].

3) ***System-wide messaging about technology for independent control*** – good practice, available technology, and regional strategic initiatives for digital and technology innovation and implementation in health and care would all benefit from central, consistent, and coherent communication. All the people involved in this project were positive and supportive of EAT but many used the phrase: "we don't know what we don't know" in relation to their, and their colleagues, knowledge and understanding of available technology. **People working across the system will benefit from regular and contemporary messaging about the technology to enhance independent control that is available in the region, and how it can be accessed.** Increasing awareness about EAT can increase people's willingness to engage with it and to recommend it as part of regular care.

Many colleagues identified that a significant challenge of technology is that knowledge becomes out of date very quickly as new innovations are brought into the

[16] https://www.longtermplan.nhs.uk/
[17] https://www.gov.uk/government/publications/a-plan-for-digital-health-and-social-care/a-plan-for-digital-health-and-social-care

market. Maintaining a useful level of awareness requires ongoing engagement with the subject as well as regular opportunities to see and try new equipment. Colleagues from other regions reported using show-homes to demonstrate care-technologies in the past, but that obsolescence of equipment became a significant problem resulting in the home being unsustainable in the longer term. Where technology causes problems, often technology can also provide a solution. Other regions are exploring virtual platforms as possible means to share information about care technologies.

There is an opportunity to elevate awareness raising from system to regional-level and invest in innovations that will support information and awareness raising about EAT sharing across NHS North-East and Yorkshire.

7 Limitations

The current project had time and parameter limitations, which provided necessary constraints on the scope of the project. Other limitations encountered while carrying out the project are also presented here for transparency.

There was a lack of engagement in this project by some stakeholders who were invited to be involved, but who were ultimately unresponsive or uncontactable. This could indicate several different challenges; limitations in individual's capacity to join the conversations, limitations in awareness about the potential to elicit change from this type of project, or a lack of understanding as to whether EAT is part of their responsibility or not. The difficulty in engaging some stakeholders presented a challenge in running a project that aimed to gather the opinions of as wide a representation across the ICB as possible.

There were two meetings that the researcher attended but where information gathered was not included in the analysis. This decision was made because several meeting attendees represented services from areas outside of the South Yorkshire ICB. Instead, information provided helpful background and context to the project and helped inform the analytic process and shaped the final recommendations.

	Pathways	*Resources*	*Funding*
Adult community SLT (NHS)	The range of pathways with significant variability across services in terms of whether they are clearly defined or not. Pathways, formal and informal, are usually defined in relation to specialist EAT service. EAT is considered as part of a general assessment but is not routinely considered for all referrals. All generalist staff would assess for EAT, few services have an AAC specialist (excl Sheffield). All services are aware of BAT and will refer onwards where appropriate. People can be re-referred for EAT at any time, and this will usually occur following a change in circumstance or ability that will trigger a re-referral.	Some equipment is available for assessment in some services. Training can be provided to support EAT implementation; blocks of therapy are less consistently available due largely to capacity issues. Clinicians will signpost people to charities - Communication Matters, ACE Centre or condition specific charities - for further support and advice. If people have problems with equipment, a replacement will be sought. There is no access to maintenance or repair services.	Funding is available for staff training but not for equipment provision (excluding Sheffield). Individual funding requests (IFRs) and charities, such as the MNDA and Sequal Trust are the only sources of funding for EAT.
Paediatric SLT (NHS)	AAC is considered part of the role for all SLTs working in non-specialist paediatric services (excluding SAANDS). Formal pathways are in place for AAC assessment, provision and onward referral. The scope of the local service is defined in terms of the specialist criteria and there are specialist, generalist and consultative models of clinical service delivery in teams. AAC may be identified from referral or generalist communication assessment and AAC is considered as part of general clinical decision-making practices following assessment. All teams were aware of BAT and how to refer onwards if necessary. People can access the service for review, re-assessment or if there are problems with equipment via a re-referral ('revolving door').	Local therapists will receive support from specialist therapists. Most teams have access to some equipment for assessment but there is no consistency regarding types of equipment available. The variety of types of equipment and maintenance/updating equipment is problematic. Teams can access and provide training on AAC. Training available via BAT and providers is favoured. Clinicians will signpost parents and young people to charities, BAT, webinars, apps and providers for further advice and support. There is no access to maintenance services for any equipment that can be provided so any faults or problems with equipment are managed by replacement rather than repair.	Funding is available for staff training but not for equipment provision (excl Rotherham). Individual funding requests and charities are the main other sources of funding for EAT. Some teams mentioned EHCPs and small item funding via schools.

Learning disability (NHS)	SLTs see AAC as part of their role. OT's do not consistently see EC as part of their roles. There are no formal EAT pathways and very few staff with specialist EAT skills in community LD teams. AAC would be considered as part of a general SLT assessment on a case-by-case basis. People are encouraged to re-refer to services should needs change and EAT needs to be reviewed or reconsidered.	Some basic switches are available to some teams to support assessment. No teams have access to equipment for loans. Teams will usually provide training to support the implementation of EAT but there is limited capacity to offer therapy to support EAT. Clinicians will signpost people to charities - Communication Matters, ACE Centre, condition-specific, local networks - for support and/or information. Staff do not access specific training on EAT but training is supported by organisations in general and funding can be accessed if a training need is identified.	EAT is self-funded or accessed via IFRs or charities. Rotherham have a special equipment panel and Sheffield residents can access equipment through the neuro-enablement service.
Local authority	Local authorities consider EAT predominantly in terms of telecare. Telecare solutions are considered distinctly, and referrals are made specifically to telecare services, or as part of an equipment and adaptations or specialist assessment. Referrals may be made to facilitate discharge from hospital or as community referrals, and pathways can intersect e.g. with falls pathway, but are more often considered as distinct from health pathways. There are systemwide drivers to integrated telecare with wider assistive technology provision, but funding sources and general awareness are a barrier to this. Referrals are made from external stakeholders (GPs, fire service) or internally (Social Worker, OT). Staff tend to be technical and will provide demonstration of equipment and basic training but limited ongoing support or integration of telecare with other systems.	Equipment is available for provision (when self-funded), but less so for demonstration. Training on specific equipment is provided to staff and then from staff to service-users but limited extra training is available to either group. There is ambition for workforce transformation and a 'tech-first' approach to care needs assessments, but there is no evidence that this strategy is trickling down to frontline services yet.	No sustained funding for technology in local authorities. Direct payments, IFRs and privately funded subscriptions are common models for funding telecare. Financial assessments and referrals to charities may also be considered.

Residential homes	All interviewees could provide examples of people who used EAT who accessed their services. All EAT was provided outside of the home/day service, by health, social care or commissioning organisations. There was some, but limited, awareness of pathways for accessing EAT assessment and equipment. EAT was not considered to be part of the role of these services, aside from some specific environments such as LD day services.	Staff knowledge and awareness of EAT was generally considered low with people working in day services considered to be more skilled in EAT compared to those in residential care. Staff skills and experience of EAT correlated i.e. those who worked with people who use EAT were generally more skilled and interested but no one had EAT as part of their job roles. Some specific training may be accessed for staff working with people who use EAT. A general need for training was identified concerning what technologies are available and what are the benefits. Few services had access to equipment, so staff had limited opportunity to engage with EAT. There was a willingness of providers to engage with EAT but a lack of awareness about how to find out more information.	EAT is provided by health, social care, commissioning organisations or through other routes. Generally funding is not available from residential homes; days services can fund some equipment for use within their service, not for issue to attendees.
Schools	All schools have students on their roll who use EAT. School work closely with local SLTs and BAT and often identify children with whom they can work with so that the children meet specialist service criteria. There is no clear pathway for children who will not meet criteria to access EAT experiences and develop skills in school.	Staff who work with children who have EAT will access training but whole school training on EAT was rare. Some schools have limited access to EAT equipment but where they do, this is often old and broken and/or obsolete. Schools access training from BAT and online resources, such as provider webinars, but would all like to receive more training on EAT. There is limited funding for training unless it is identified as a whole school need.	There is no funding to provide EAT equipment for individual students. All EAT is funded by BAT, local SLT services or by private (sometimes insurance pay-out/compensation) routes.

Table 1: The narrative summaries of qualitative results in relation to the service type

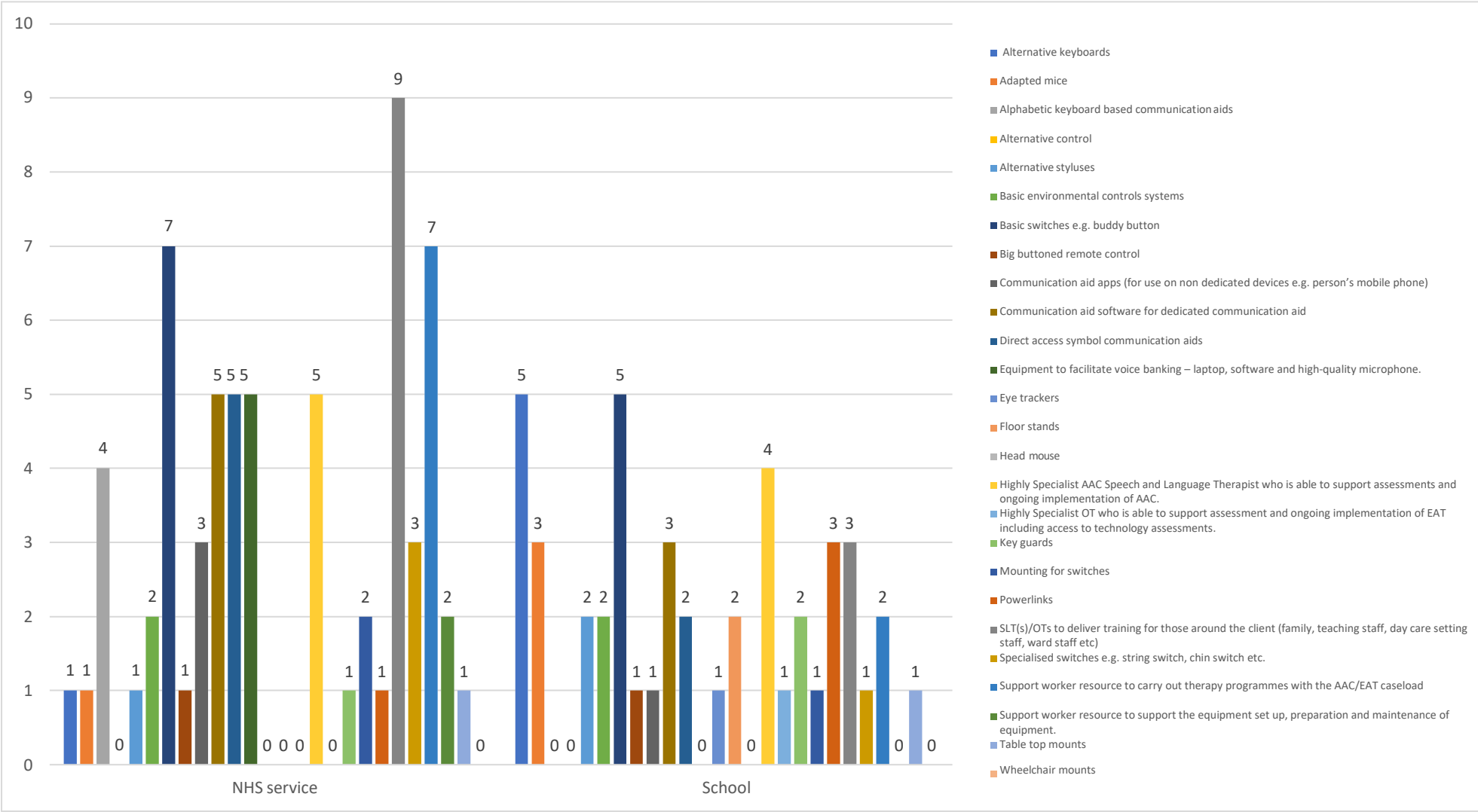

Diagram 5: A graph to summarise the types of EAT equipment available to NHS services and specialist schools

Acknowledgements

Zoë Clarke was project manager for this project. Zoë wrote the project brief, secured funding, and managed the conduct of the project, liaising regularly with commissioners and other key stakeholders. Zoë Clarke is Environmental Controls Lead with Barnsley Assistive Technology Team and Trust Lead Healthcare Scientist, Barnsley Hospitals NHS Foundation Trust. She is also National Environmental Controls representative on the Disability and Rehabilitation Clinical Reference Group.

Katherine Broomfield carried out the data collection and analysis for the project and prepared this report. Katherine is a speech and language therapist and previously led a local AAC service in the Southwest. Katherine has completed a PhD about the experiences of people who use AAC and holds clinical research positions within NHS and higher education organisations. Katherine has experience of working with people who can benefit from EAT, their families and carers, as well as working alongside a range of organisations and professionals who support EAT in the community.

The project steering group consisted of colleagues who work with EAT, academics in field of learning disability, and a parent of a young person who uses AAC. We are grateful for their insight and oversight of this project.

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