Health Innovation East

Ensuring Children and Young People's digital inclusion: A framework for healthcare professionals

Part of the Health Innovation Network
Local change, national impact

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Contents

Foreword

I am pleased to introduce this practical framework designed to ensure no child or young person is left behind as digital technology becomes central to health and care. Commissioned by NHS England East of England and delivered by Health Innovation East, it complements NHS England's Inclusive digital healthcare: a framework for NHS action on digital inclusion by translating national ambition into actionable steps for local teams working with children and young people.

Digital access now underpins how services are delivered, experienced and improved. The Ten Year Health Plan sets a clear expectation that the NHS will use digital tools at every level to support prevention, personalised care and productivity. As that shift accelerates, the ability of children, families and professionals to access and use digital services safely and confidently has become as critical as the technology itself.

The government's Digital Inclusion Action Plan: First Steps and its 2025 call for evidence recognised young people as a priority group, highlighting the need for practical solutions that improve access, skills and confidence. This framework responds directly to that need. It provides clear, actionable recommendations for commissioners, providers and system leaders to embed digital inclusion into everyday practice.

The insights are straightforward but significant: increase access to devices and connectivity; build digital skills and confidence among children, families and the workforce; design digital services that are inclusive and accessible; and establish leadership and accountability so digital inclusion is consistently prioritised.

Digital inclusion is not an add-on. It is the foundation that enables safe, effective and equitable digital care. By applying the guidance set out in this framework, systems can make immediate, measurable improvements for children and young people and strengthen the long-term shift towards a fairer, more connected health service.

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NHS England – East of England Region

Background

Digital services are a strategic priority for the NHS, as outlined in the Ten-Year Plan through the shift from analogue to digital. Key goals include expanding the use of AI, enhancing NHS apps, and improving digital access to patient data. In 2023 NHS England published a framework to support the tackling of digital exclusion, however, there is limited research on the specific challenges and barriers that Children and Young People (CYP) may face in accessing healthcare in a digital world. General practice guidance states "specific protocols should be developed for CYP under 18 years old". However, national guidance on how to develop and implement these protocols is not yet available.

In the UK, 45% of households with children fall below the minimum digital living standard [1] and 14% of young people do not have adequate access to devices [1]. These barriers have been further exacerbated by the recent cost of living crisis, with 9% of households struggling to afford mobile phone contracts and 8% struggling to afford broadband [1].

Enhanced digital inclusion enables CYP to participate meaningfully in their own health and care through a range of digital solutions – including those that promote wellness - aligning with the NHS Long Term Plan's ambition to deliver a 'left shift'.

Health Innovation East was commissioned by NHS England East of England to develop a framework for healthcare professionals working strategically, operationally and clinically to reduce digital exclusion for CYP. The work was supported by a diverse steering group consisting of Health Innovation East and NHS England East of England colleagues.

This framework has been developed based on a Rapid Evidence Review of published and grey literature (conducted by Health Innovation East and published in 2024); a further review of grey literature conducted in 2025; and 10 key informant interviews, undertaken between June and August 2025. For more information on our approach and methodology, see Appendix A.

Framework overview

This document is intended to provide practical guidance for those commissioning, planning, or delivering healthcare interventions for CYP to ensure digital inclusion is routinely and proportionally considered in planning and delivery. This framework has been developed to align with the NHS England framework for NHS action on digital inclusion and is intended to provide a specific CYP-focus alongside the broader NHS England framework. It provides both contextual information and practical recommendations across 5 thematic areas, which are aligned with the Action Domains from NHS England's Inclusive Digital Healthcare framework. These are:

- **Leadership and partnerships:** The actions that organisations should take to develop a digitally inclusive workplace culture and enable collaborative working both internally and externally.
- **Access to devices and data:** How to ensure the necessary infrastructure is in place to provide ongoing access to devices and digital solutions.
- **Skills and capability:** Steps to assess and improve the ability of CYP, parents/carers, and staff to meaningfully engage with digital solutions.
- **Accessibility and ease of using technology:** How to ensure devices, digital solutions, communication methods and guidance are available in a wide range of formats to support accessibility and ease of use.

- **Beliefs and trust**: Actions to improve trust in digital solutions, including ensuring that CYP and parents/carers are aware of potential benefits of digital developments for health and wellbeing; providing opportunities for digitally excluded voices to be heard; ensuring safeguarding when accessing digital solutions; and providing healthcare choices to CYP and their parents/carers.

Each thematic area contains an overview of the theme; including context and challenges; recommended actions for commissioning and planning to take to address digital inclusion for CYP; a flowchart for clinicians (where appropriate); and an example case study to bring the challenges and recommendations to life. All recommendations are referenced throughout. Where we have suggested a recommendation that has not been made elsewhere (based on our analysis of literature and interview data), we have marked it with as asterisk. At the end of each theme, we have highlighted a set of “Where to start” recommendations; concise, practical actions that organisations can implement early in their adoption of this framework. These provide simple starting points to support progress toward digital inclusion while longer-term improvements are developed.

For the commissioning and planning recommendations we have suggested responsible owners, these may need to be adapted to fit organisational context and processes." as we no longer have the service delivery.

We recommend providing professional learning opportunities for staff to support effective implementation of the framework. This could be delivered through online learning modules or recorded webinars.

The digital landscape is evolving rapidly, with new tools changing how CYP and families/carers engage with health services. To remain effective, services must recognise that whilst emerging technologies can create new opportunities they also may create and enhance risks, particularly for those already digitally excluded.

Framework

1. Leadership and partnerships

Jump to recommendations

Context and challenges

Sensitive and inclusive leadership can create the organisational culture needed to reduce digital exclusion – enabling collaborative working to understand and address digital needs. The components of this section are:

- **Understanding local need for digital support** and ensuring evaluation and monitoring;
- Engaging in **collaborative working** across the health and care system to meet digital support needs;
- Creating and fostering a **digitally inclusive culture.**

Understanding local need: Levels of digital inclusion vary across population groups and geographies, often overlapping with or compounded by other health inequalities. CYP also face unique personal challenges in accessing digital solutions, such as reliance on parents/carers for device access[2], limited capabilities to travel to access data[13], balancing supervision of access with privacy[4,5], or restricted access to devices due to school requirements[13]. Digital exclusion is not always evident in national datasets. Some of the indicators that could suggest individuals may be digitally excluded are socioeconomic status, geographical locations, or ethnicity – but these are only proxy measures. Effective monitoring and evaluation of meaningful digital access across services, pilots, or programmes enables more tailored and targeted interventions to be developed, helping to maximise impact and mitigate digital exclusion[46].

Collaborative working: It is important to ensure that CYP voices [1,14,21], including those who are digitally excluded, are captured and used to inform culturally sensitive [13,31,32] service development. To maximise impact of collaborative working key stakeholders involved in the care of CYP should also be engaged, such as the inclusion of SEND leads and local VCFSE [47].

Digitally inclusive culture: Building a culture that prioritises digital inclusion within an organisation is essential to ensure that no one is left behind[13]. This involves embedding inclusive practices (such as tailored support based on needs assessment) into everyday processes[13,14,20], supporting staff to develop digital confidence, and embedding processes to recognise the diverse needs of service users. By creating an environment where digital inclusion is valued and championed[22], organisations can strengthen equity, improve access, and enhance the overall impact of digital solutions.

Recommendations for commissioning and planning

	Recommendations	Responsible
	Strategy	
1	Develop a joined up digital inclusion strategy for CYP or include CYP in existing strategies. [13,14,20,48,49]	Senior leaders in ICBs and provider organisations
2	In the development of a strategy, ensure collaboration with a variety of stakeholders to support with planning, rollout, and communication, ensuring representation from all stakeholder groups who will be impacted. This should include those at risk of digital exclusion, those leading or supporting service delivery (including via training), and colleagues across the ICS (such as SEND leads, Social Services, and VCFSE).[1,13,14,20,21,32,48,49]	Senior leaders in ICBs and provider organisations
	Meaningful use of data	
3	Develop a core set of digital demographic indicators and metrics to understand the ongoing impacts and intersectionality of digital exclusion and monitor progress such as those found in the Digital Exclusion Risk Index Tool.[1,13,14]	Senior leaders in ICBs
4	Ensure data collection tools are available and routinely used to capture CYP and parents/carers information such as:[1,12,14,50] a. Digital access levels. b. Digital skills and literacy levels. c. Preferred modes of communication. See Appendix B for suggested templates.	Senior leaders and managers in provider organisations
5	Analyse the scale of the problem in your geography to support planning.[13,14]	Senior leaders in ICBs and provider organisations
6	Ensure robust evaluations are carried out for digital solutions and services with both quantitative and qualitative data to understand the impacts (including impacts on inequalities), barriers, and uptake.[13,14,51]	Senior leaders and managers in provider organisations
	Collaboration and partnership working	
7	Participate in relevant working groups to enable the sharing of learning, best practice and support coordinated rollout of services and solutions. [13,14,20,32,48,49]	Senior leaders in NHS England regions and ICBs
8	Where they do not exist, establish relevant working groups to enable the sharing of learning, best practice, and support coordinated rollout of services and solutions.	Senior leaders and managers in provider organisations Clinicians in provider organisations All staff delivering digital health and care services for CYP including in local authorities and charities
	Organisational processes	
9	Embed digital inclusion for CYP in existing processes from procurement to delivery, such as equality health impact assessments (EHIA) (see Appendix C for an example).[13,14]	Senior leaders and managers in provider organisations
10	Appoint and train digital inclusion champions or set up boards to establish a culture of sustainable digital inclusion, to support culture change.[13,14,22,32]	Senior leaders and managers in provider organisations
11	Ensure that all documentation and guidance is easily accessible through internal systems and shared with staff.*	Senior leaders and managers in provider organisations

Jump to next commissioning/planning theme

Jump to contents page

Leadership and partnerships in provider organisations: Where to start

1. Appoint and train digital inclusion champions or set up local boards to establish a culture of digital inclusion.
2. Ensure data collection tools are available to record digital access, digital skills, and preferred communication methods.
3. Interrogate data to understand the scale of the problem in your geography.
4. Ensure documentation and guidance is easily accessible on internal systems and communicated to staff.

Jump to next commissioning/planning theme

Jump to contents page

Example Case Study

A clinician has recently joined a Trust working with CYP and is leading a pilot to implement a new digital solution. The pilot does not currently include an evaluation component that considers digital exclusion. The clinician has attended a short webinar on digital exclusion and is keen to introduce measures to mitigate risks within their practice, but they are unsure how to begin. They have been unable to find any relevant guidance on the Trust's intranet, do not feel confident in moving forward, and there is no available data on where digital exclusion is most likely to occur. The Trust does not participate in any wider digital inclusion working groups.

Challenges

- Guidance on how to implement activities to mitigate digital exclusion is not easily accessible.
- The impact of the pilot on digitally excluded CYP will not be understood without evaluation.
- There is no available data on digital exclusion within the local geography.
- The Trust has limited awareness of similar initiatives that may already have been undertaken by other organisations.

Potential impact

- Clinicians lack access to practical activities that support digital inclusion, meaning these are unlikely to become standard practice.
- The pilot may unintentionally increase the risk of digital exclusion.
- The pilot may not be rolled out in areas where digital exclusion is most prevalent.
- There may be duplication of effort if the Trust does not draw on existing learning or data from other organisations.

Potential solutions

- Develop a joined-up Trust-wide digital exclusion strategy and make it easily accessible through the intranet.
- Provide clinicians with opportunities to join internal working groups focused on digital inclusion, creating a forum for sharing knowledge and good practice.
- Ensure the Trust participates in wider regional or national working groups, sharing insights and feeding learning back into local systems.
- Undertake local analysis to establish the scale and nature of digital exclusion, helping to target resources and refine the pilot.

2. Access to devices and data

Jump to recommendations

Context and challenges

This section covers whether CYP have the devices, connectivity, and resources they need to get online. The components of this section are:

- **Physical access** to devices (mobiles, tablets, laptops, computers) and digital software and devices (e.g. Insulin Pumps or medical phone applications).
- **Supervision of access** to digital devices and solutions by parents/carers.
- **Device capabilities and compatibilities** that allow devices to install and/or use a digital solution.
- **Data and power access** to access online digital solutions and charge devices.

Physical Access: Gaps in access to devices remain significant - 4% of 8–25-year-olds lack both a learning device and home internet[1], while 14% of young people do not have access to a suitable device[1]. Access to devices may also vary depending on age, with some CYP owning their own phones, while others rely on shared family devices[2]. The access requirements for digital solutions may be at odds with the preferences of the parents/carers. Having shared family devices or living between two homes can also impact on the availability and accessibility of devices and their applications. Where digital solutions require personal data to be stored, use of shared devices may present a barrier to uptake[3]. Access may also be restricted outside of the home in schools, with many schools running "no phone" policies. A CYP may have multiple health conditions requiring access to multiple digital solutions. These may have conflicting compatibilities, for example requiring different operating systems. The total burden of data and power requirements across multiple applications may be significant.

Supervision of access: Digital solutions require the right balance to be struck between independent digital access to allow CYP to successfully engage with the digital solution[3] (particularly when sensitive topics may be discussed) and remaining safe whilst online. However, the extent of supervision varies. For instance, an Ofcom study found that 42% of children aged 5–7 use social media and apps under supervision, while 32% access them independently[4]. Another study reported that 79% of parents of 12–15-year-olds say they supervise their child's online activity[5].

Capabilities and compatibilities: A variety of devices and operating systems exist and can result in device compatibility being a challenge, as older models or those running outdated operating systems may not support certain apps. Data from 2016 indicates that 90% of Android devices and up to 80% of Apple devices were operating on outdated systems[6]. This issue is further compounded for CYP, many of whom use hand-me-down phones—one study estimates this applies to 63% of 11-year-olds[7]. Consideration also needs to be given to CYP living between multiple households and if the digital solution can be run concurrently across multiple devices. In addition, there remains a variety of different systems in use across the NHS for example electronic patient record (EPR), booking management, video consultation and diagnostic support which can make compatibility within and between systems a challenge.

Data and Power access: Whilst CYP or their family may have access to devices, they may face challenges in accessing required infrastructure such as reliable internet or power. Whilst work has been undertaken to ensure that households have adequate internet access, 7% of UK households still do not have internet at home and 5% of those that do have access which falls under the level defined as decent by the Universal Service Obligation[8].

Challenges may also be faced in accessing power for CYP and families, with 12.1 million households struggling with the cost of their energy bills[9] and 11% of households on prepayment meters[10]. CYP may have more limited options to access alternative power supply than adults for example through workplaces or communal assets.

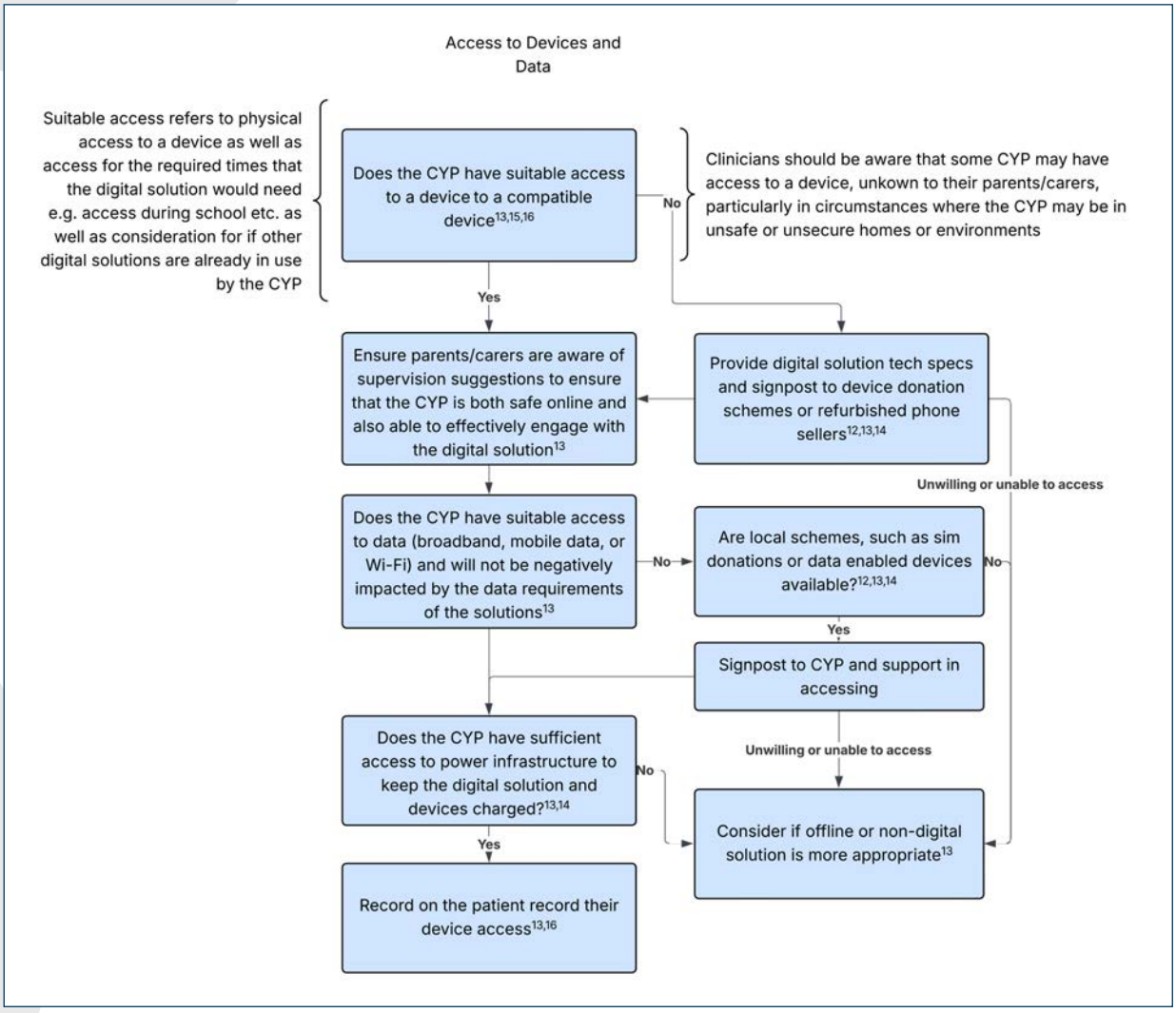
Recommendations for commissioning and planning

	Recommendations	Responsible
	Considerations when commissioning and shaping digital solutions	
1	Ensure that digital solutions are compatible with a variety of devices, including older models and varying operating systems (OS).[13,15]	Senior leaders in ICBs Senior leaders and managers in provider organisations
2	Ensure that digital solutions are as compatible as possible with relevant existing systems and digital solutions (such as EPRs) already in place in the region/locality.[13]	Senior leaders in ICBs Senior leaders and managers in provider organisations
3	Consider the data requirements of digital solutions and minimise where possible. [11,12,13,14,15] Apps that require one-off downloads rather than regular access to a website could support this.	Senior leaders in ICBs Senior leaders and managers in provider organisations
4	Work with technology providers to get apps or websites "Zero Rated".[15]	Senior leaders in ICBs Senior leaders and managers in provider organisations
5	Ensure that digital solutions will not significantly impact daily battery life of devices, e.g. by having battery saving modes or limiting background app activity (see Skills and Capabilities.[13,14]	Senior leaders in ICBs Senior leaders and managers in provider organisations
	Guidance and signposting for provider organisations	
6	Document and share guidance on device donation schemes as well as pre-paid sim donation schemes either locally or nationally.[11,12,13,14]	Senior leaders in NHS England regions, ICBs, and provider organisations
7	Provide technical specification and compatibility guidance for digital solutions suitable for healthcare professionals and CYP/parents/carers. Digital solution providers are likely to have this available to be added into internal guidance. (see Accessibility and ease of using technology). *	Senior leaders in NHS England regions, ICBs, and provider organisations
	Donation schemes	
8	If device donation schemes are not established in the locality, explore if setting one up is feasible in partnership with local services (e.g. VCSFE, local authorities, private companies).[11,13,14] Ensure appropriate guidance is available for donators, including in regard to data cleansing, and for new device users.*	Senior leaders in NHS England regions and ICBs Senior leaders and managers in provider organisations Senior leaders and managers in local authorities
9	Explore working with VCFSE or private enterprises to set up SIM or Wi-Fi dongle donation schemes.[13]	Senior leaders in NHS England regions and ICBs Senior leaders and managers in provider organisations Senior leaders and managers in local authorities

Jump to next commissioning/planning theme

Jump to contents page

Flowchart for clinicians



Jump to next Flowchart for clinicians' theme

Jump to contents page

Access to Devices and Data in provider organisations: Where to start

1. Document and maintain guidance on local device donation schemes.
2. Document and maintain guidance on public Wi-Fi options in the locality.
3. Ensure all digital solutions in your organisation have technical specification requirements documented and available.

Example Case Study

A 9-year-old child is presenting with anxiety and may benefit from a digital mental health app to support their emotional wellbeing. The child's parents are divorced and share custody, with the child alternating weekly between two households.

- **Family context:** Both parents work 9–5 jobs and are experiencing financial strain due to the cost-of-living crisis.
- **Device access:** The child does not own a personal device but has supervised access to a parent's mobile phone in each household.
- **Infrastructure:** One of the homes is located in a rural area with poor internet connectivity and limited access to reliable charging, although mobile signal strength is strong in both homes.

Challenges

Several barriers could limit the child's ability to effectively engage with a digital mental health app:

- **Access and supervision**
  - The child's use of devices is restricted to when parents make their phones available, often outside of work hours.
  - Supervised usage reduces privacy, making the child reluctant to engage openly with the app.
- **Multiple devices in use**
  - The child needs to access the app on two separate devices, potentially with different operating systems, ages, and technical specifications.
  - Licensing and login arrangements may not support seamless use across multiple devices.
- **Sensitive data**
  - Mental health apps often include sensitive personal information, which the child may not want their parents to see, creating concerns around confidentiality.
- **Infrastructure limitations**
  - In the rural home, limited internet access and restricted charging capacity create practical barriers.
  - If the app requires constant connectivity or is power-intensive, this may lead to inconsistent use.

Potential impact

If these challenges are not addressed, several negative outcomes may occur:

- **Limited engagement:** The child may not be able to access the app frequently enough to gain therapeutic benefit.
- **Privacy concerns:** Supervised use may discourage honest engagement, reducing the effectiveness of the tool.
- **Compatibility issues:** The app may not function consistently across both parents' devices, causing frustration and disengagement.
- **Infrastructure barriers:** Poor internet and charging issues could mean long periods without access, further reducing continuity of support.

Potential solutions

Practical solutions could improve the child's ability to engage meaningfully with digital mental health support:

- **Access to a dedicated device**
  - The child could be referred to a local device donation scheme, run in partnership with community charities, to receive a personal device.
  - This would give the child consistent, private access to the app without needing to rely on parents' phones.
  - Explain to the parents the importance of the right balance between supervised and independent access which allows the child to feel comfortable accessing the app whilst remaining safe.
- **Connectivity solutions**
  - As mobile signal is strong in the rural home, a data-enabled device or SIM donation scheme could provide reliable access.
  - This would reduce dependency on limited broadband infrastructure.
- **Power solutions**
  - Parents could be signposted to local community hubs or centres offering charging facilities.
  - The app itself should be optimised for low power consumption, ensuring that use does not place additional strain on limited charging availability.
- **Cross-device functionality**
  - Developers should ensure the app supports multi-device logins and works across different operating systems.
  - This would allow flexibility if the child continues to use parents' phones in certain contexts.

3. Skills and Capability

Jump to recommendations

Context and challenges

Even when digital access is available and sufficient, CYP, parents/carers or health care professionals may lack the skills to effectively use or support use of technology – including:

- **Abilities** to navigate digital solutions and platforms.
- Skills in **managing online risk.**

Abilities to navigate digital solutions and platforms: It should not be assumed that CYP have the necessary digital skills and literacy to be able to effectively engage with digital solutions. The Consumer Digital Index distinguishes 7 foundational skills, such as connecting to Wi-Fi, changing passwords, or opening apps; and 5 essential skills, such as creating email accounts, the ability to use the internet for problem-solving and managing transactions online. In a 2020 review, 16% of those over 15 did not have foundational skills, and 24% did not have essential skills[17].

Younger children without access to devices at home may have limited opportunities to develop digital skills through school. This challenge can be further compounded by additional needs, such as dyslexia or learning difficulties, which may impact their ability to build digital capabilities[13,20]. Whilst many parents are able to teach CYP practical digital skills, 17% of households with children still lack the practical skills needed to effectively engage online.[18]

Skills in managing online risk: Internet access, a typical outcome of enabling digital connectivity, carries risks such as exposing CYP to harmful or inaccurate content and the potential sharing of personal or sensitive information online. It is important that robust safety measures, content filters, and parental controls are in place. 31% of secondary school children are missing the skills to understand and manage their digital risk18 and 27% of households lack a parent with these skills[1]. If a CYP is given access to a device without the skills to navigate digital devices safely they may be at greater risk of exposure to harm.

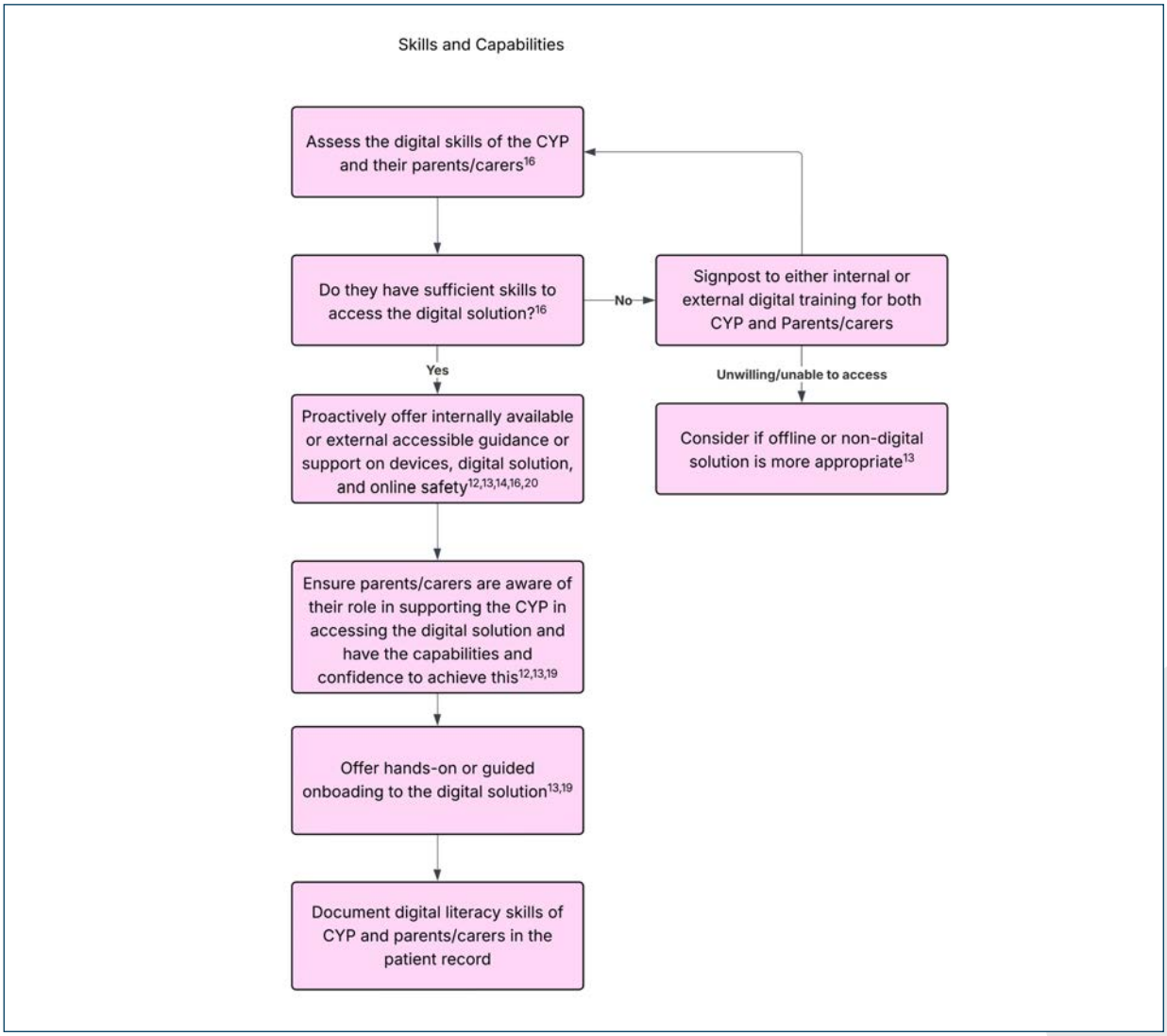
Recommendations for commissioning and planning

	Recommendations	Responsible
	Organisational processes	
1	Explore ways for CYP at risk of digital exclusion to be provided longer appointments to ensure additional support can be provided.[21]	Senior leaders and managers in provider organisations
2	Training and support – CYP and parents/carers Understand, document and communicate a variety of Digital Skills training options that CYP and parents/carers can be signposted to.[13]	Senior leaders in NHS England regions and ICBs Senior leaders and managers in provider organisations
3	Ensure accessible training is available for CYP and parents/carers to improve their digital skills through a range of partnerships (see Leadership and Partnerships, Accessibility and ease of using technology and Beliefs and Trust).	Senior leaders in NHS England regions and ICBs
4	Ensure that digital solutions have accessible user guides for both CYP and parents/carers, including; How to turn off automatic updates; enabling battery saving modes; limiting connectivity requirements (e.g. only use Wi-Fi); Adjusting accessibility settings on devices and software.[13]	Senior leaders in ICBs Senior leaders and managers in provider organisations
	Training and support – Staff	
5	Consider establishing "digital experts" within teams to provide additional support.[13]	Senior leaders and managers in provider organisations
6	Provide accessible training to ensure staff have the necessary digital skills to effectively use digital solutions and devices and support CYP, parents and carers, giving consideration to any ongoing training and support that may be required, such as through the NHS Digital Academy.[13,14]	Senior leaders in NHS England regions and ICBs Senior leaders and managers in provider organisations

Jump to next commissioning/planning theme

Jump to contents page

Flowchart for clinicians



Jump to next Flowchart for clinicians' theme

Jump to contents page

Skills and capability in provider organisations: Where to start

1. Ensure that systems are available and routinely used to record digital skill levels.
2. Ensure all relevant staff have appropriate skills to effectively use digital solutions and support CYP and parents/carers.
3. Document and maintain available training for CYP and parents/carers in your geography as well as national offers (e.g. charities providing online training).

Example Case Study

A 14-year-old child with asthma may benefit from a digital solution to support medication management and adherence. The child and parents are asylum seekers with minimal experience using technology. They have been provided with a suitable mobile phone for the digital solution, to which the child has suitable access.

- The child has reasonable English language skills, although has been diagnosed with dyslexia.
- Parents are less fluent in English and find reading particularly challenging.

Challenges

- **Digital skills**
  - The child and parents do not have the digital skills necessary to access the device or the digital solution due to their minimal experiences with technology.
- **Dyslexia**
  - Dyslexia may make it more difficult for the child to use the digital solution, especially if content relies heavily on text.
- **Language barriers**
  - Parents are not fluent in English and struggle with reading, limiting their ability to engage with instructions, training materials, or the app itself.

Potential impact

- Lack of digital skills may prevent the child from using the device or the digital solution effectively.
- Parents limited digital skills may mean they cannot support the child in their care journey.
- Dyslexia may mean the CYP is unable to access the digital solution effectively as a result of being unable to read the guidance.
- Parents' lack of English fluency, particularly in reading, makes it difficult for them to engage with training or app content, as both the device and app are likely set to English by default.
- Additional time and resources will be required to train both the child and parents.

Potential solutions

- **Skills and literacy assessment**
  - Assess the digital skills and literacy of the child and parents, recording this in the care record so all staff can provide tailored support and avoid duplication.
- **Training and signposting**
  - Provide or signpost the family to training on digital skills and online safety, adapted to their language needs and learning challenges.
- **Accessible patient materials**
  - Make patient-facing materials for the digital solution available in the child's and parents' preferred language.
  - Design materials with accessibility in mind (e.g., visual aids, simplified instructions).
  - Train the family on how to change device and app language settings.
- App accessibility features
- Ensure the digital solution includes accessibility options, such as dyslexia-friendly fonts, multiple languages, and sans-serif options.

4. Accessibility and ease of using technology

Jump to recommendations

Context and challenges

It is essential that digital solutions are inclusive and accessible to the widest possible range of users, regardless of individual needs. Accessibility should be a central component of organisational assessments. In this context, accessibility and ease of use refer to:

- **Accessibility of the digital solution** for users with diverse needs.
- **Accessible guidance** in multiple formats, including understanding how CYP needs change according to age and stage of development – both in terms of appropriate digital solutions and the support they might need.
- **Evolving and varying needs** of CYP

Accessibility of the digital solution: It is important that the digital solution is accessible across a variety of needs including language, motor, or learning or visual differences. This can be achieved through actions such as; options in apps; dyslexia friends fonts; colour-blind friendly colour palettes. In England 1.7 million school aged children have special educational needs[23] and around 20% of children have English as an additional language[24]. Combined with this 1 in 6 16-65 years olds in England have very poor literacy skills[25].

Accessible guidance: Guidance must also be accessible. This may mean providing multiple formats, including video guides, and translations. Poor service accessibility can increase missed appointments or result in poor condition management[27]. See Appendix D for links to accessibility guidance.

Evolving and varying needs: CYP includes those from 0-18/25, with significant variation in abilities and capabilities. It is important to consider the impact that age may have on CYPs permission and ability to access digital solutions or services. The NHS App, for example, requires that over 13s have their own account[28]. In addition, the content and support required will vary as CYP age, as will the most effective way to provide guidance [29].

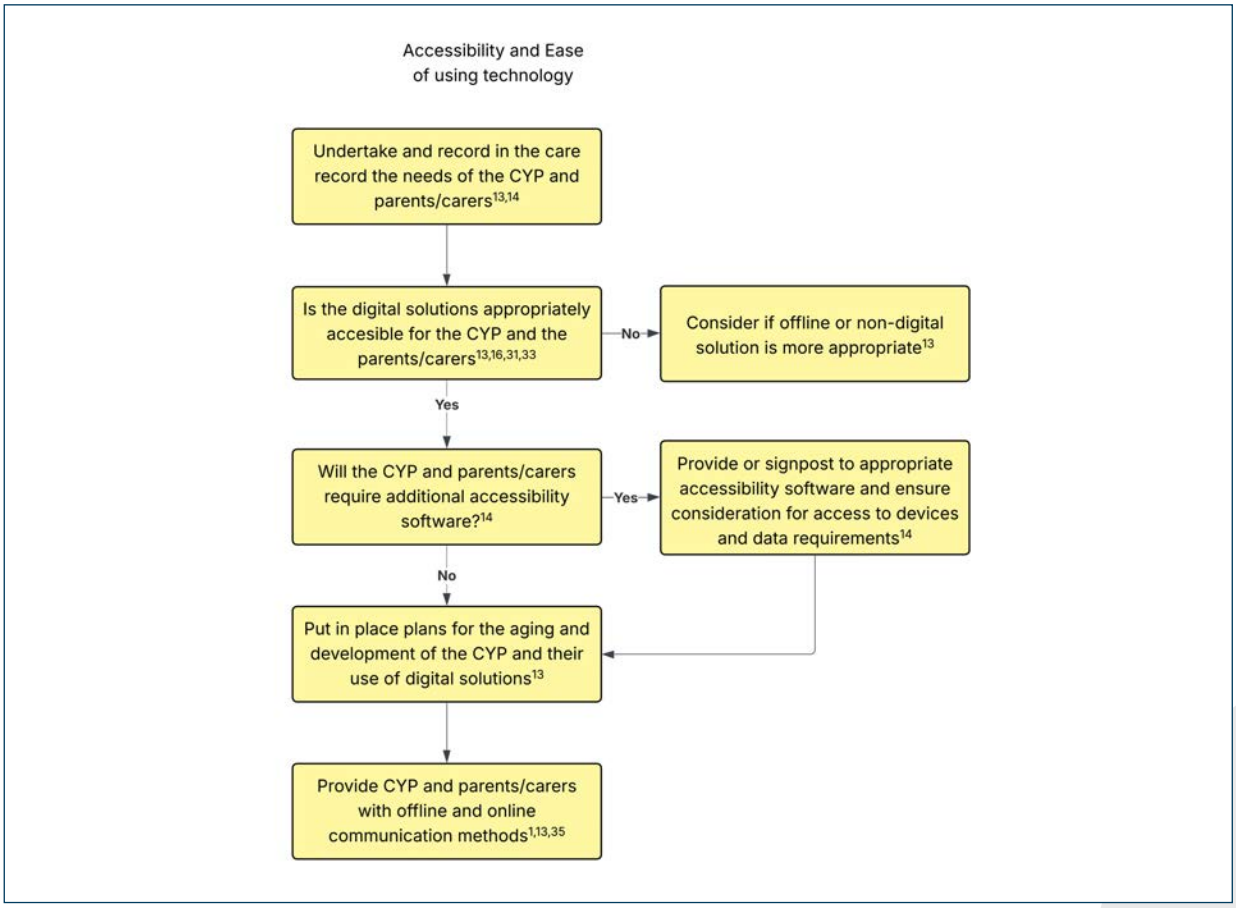
Recommendations for commissioning and planning

	Recommendations	Responsible
	Considerations when commissioning and shaping digital solutions	
1	Ensure all services and digital solutions are aligned with national frameworks and standards e.g. NHS Inclusive Design Framework.[14]	Senior leaders in ICBs Senior leaders and managers in provider organisations
2	Ensure that digital solutions and services are suitably accessible and designed with key stakeholders including clinicians, inequality health leads and patients (ensuring digitally excluded CYP and parents/carers are included).[13,31,32] a) Work with technology providers or organisations (e.g. Health Innovation Network), to support the development of accessible digital solutions and services with consideration for culturally sensitive design.[13,14]	Senior leaders in ICBs Senior leaders and managers in provider organisations
3	Understand what impact accessibility support, such as text to speech apps, translation software or magnifiers, may have in terms of Access to devices and data as it might require additional data or alternative devices.[14]	Senior leaders in ICBs Senior leaders and managers in provider organisations
	Training and support	
4	Ensure that documentation on available training includes accessible training options.[13]	Senior leaders and managers in provider organisations
5	Ensure a variety of formats are used for training or guidance and are accessible to a range of ages.[20,33]	Senior leaders and managers in provider organisations
6	Ensure translations of training and guidance documents reflect cultural or linguistic nuance.[13]	Senior leaders and managers in provider organisations
7	Ensure that clear signposting is available on how and where to get help, including visual aids and accessible formats.[13]	Senior leaders and managers in provider organisations
8	Ensure documentation is available on where additional accessibility software can be accessed for CYP and parents/carers.[14]	Senior leaders and managers in provider organisations
	Organisational processes	
9	Codevelop EHIA with CYP and their families/carers, clinicians and health inequality leads - with specific consideration given to digital inclusion and additional CYP needs e.g. cared for children.[13,14]	Senior leaders and managers in provider organisations

Jump to next commissioning/planning theme

Jump to contents page

Flowchart for clinicians



Jump to next Flowchart for clinicians' theme

Jump to contents page

Accessibility and ease of use in provider organisations: Where to start

1. Review existing EHIA's to ensure digital inclusion has been considered across existing solutions and pathways.
2. Ensure digital inclusion is a prompt in existing processes and document templates such as EHIAs.
3. Ensure that adequate communication avenues are available, including offline, for service users to engage with the organisation.

Example Case Study

A 12-year-old child with diabetes has been identified as suitable for a digital solution to support self-management. The solution is a closed-loop glucose monitor that requires a mobile device to be attached through adhesives to the child's skin. The child has autism and experiences challenges with literacy. They are Black British and have been provided with a device through a device donation scheme, which they are able to use confidently. However, the parents are not digitally literate, do not own a phone, and have English as an additional language, preferring to receive guidance in their first language.

Challenges

- The child's autism may require specific accessibility accommodations.
- Available adhesives in the organisation are only available in paler skin tones.
- The parents' limited English proficiency creates a barrier to understanding guidance and using the solution effectively.
- The parents' lack of access to a digital device further limits their ability to engage with digital support.

Potential impact

- The child may be unable to use the digital solution effectively without tailored accessibility support.
- The device or app could create sensory issues, discouraging the child from using it.
- A lack of inclusive adhesive options may lead to embarrassment or reduced adherence.
- Parents may struggle to understand instructions or provide support due to language barriers.
- Without a device, parents may not be able to access information or seek help digitally.

Potential solutions

- Design the digital solution and supporting materials with autism-friendly accessibility features (e.g., clear interfaces, reduced sensory triggers, visual supports).
- Ensure commissioning processes require inclusive adhesive options.
- Allow additional time and support to help the child adjust to using the digital solution.
- Provide translated and culturally nuanced guidance for parents, and demonstrate how to change the language settings within the app and device.
- Offer offline communication channels (e.g., printed resources, in-person support) to ensure parents remain involved in the child's care.

5. Beliefs and Trust

Jump to recommendations

Context and challenges

Building trust is an ongoing process that can help to tackle health inequalities and increase engagement [36]. Integrating digital inclusion activities for CYP and their parents/carer with their routine interactions with the NHS can help reinforce support. This section considers:

- **Perceived effectiveness** of digital solutions and services;
- Enabling **patient voices** to be heard and feel understood;
- **Safeguarding** in accessing digital solutions and services;
- **Providing choice** in accessing digital services;
- Increasing **confidence** in accessing digital solutions and services.

Perceived effectiveness: Ensuring that CYP and their parents/carers understand the benefits of digital solutions helps build trust, encourages engagement with healthcare pathways, and enhances the effectiveness of these services [14].

Patient voices: Ensuring that CYP and their parents/carers are provided with opportunities to co-develop and feedback, particularly those who are digitally excluded (see Accessibility and ease of using technology), is vital to ensure that services and solutions are appropriate. As outlined in the Darzi report[38] patients need to be an integral part of the design and delivery of NHS services, and this also applies to digital services.

Safeguarding: CYP who are digitally excluded, and therefore more likely to lack critical digital skills, are at a greater risk of online harms[39]. In addition, Ofcom has found that there is considerable variation in the level of supervision CYP receive from parents/carers[4] and variation in the skills of parents/carers to assess and manage this risk[20].

Providing choice: Providing choice[30] and control is an integral part of the NHS[40] and can result in better outcomes and enable patients to feel empowered[41]. It is important that options are available for digital solutions, where feasible, to allow for the CYP to have choice even if that means preferring non-digital alternatives. Choice also needs to extend to what data is used and how/if it is shared[13].

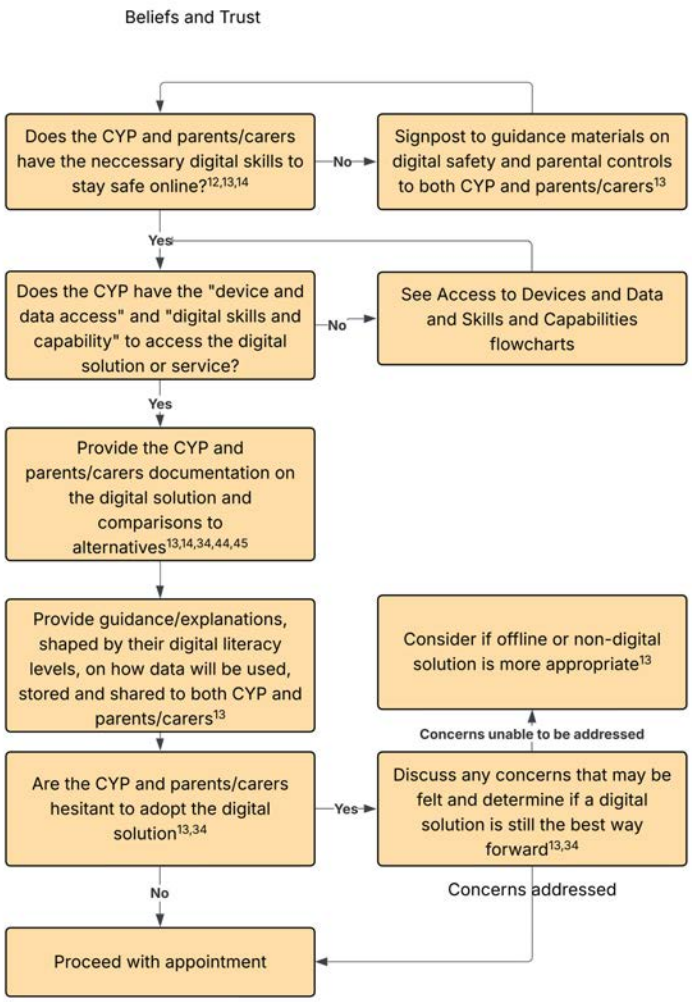
Confidence: It is important to ensure that CYP and their parents/carers have the opportunity and support to develop confidence in accessing digital solutions and services [14]. The inclusion of peers to help make digital services relatable, or using trusted messengers or communities[14], can help to build confidence. Providing opportunities for engaging digitally with healthcare in lower-risk activities, such as booking appointments online, can help to build confidence and competence in digital solutions and services[14].

Recommendations for commissioning and planning

	Recommendations	Responsible
	Considerations when commissioning and shaping digital solutions	
1	Consider how health data is stored and used when accessing digital solutions and services, ensuring it is safely secured in line with legislation such as GDPR.[13,42]	Senior leaders in ICBs Senior leaders and managers in provider organisations
2	Consider implications on patient privacy and data risks if technology is accessed via public Wi-Fi networks, choosing and shaping solutions with minimal risk where possible.[13]	Senior leaders in ICBs Senior leaders and managers in provider organisations
3	Ensure that digital solutions and services are easily identifiable as legitimate and do not increase the risk of accessing harmful content, for example through unmoderated chat boards or inbuilt browsers that can circumvent parental controls.	Senior leaders in ICBs Senior leaders and managers in provider organisations
4	Ensure that digital solutions are at least as good as non-digital alternatives and vice versa.[14]	Senior leaders in ICBs Senior leaders and managers in provider organisations
	Training and support	
5	Provide accessible guidance (see Accessibility and ease of using technology) for CYP and parents/carers on how their data will be used and stored and the implications of this.[13]	Senior leaders and managers in ICBs and provider organisations
6	Provide or signpost to guidance on parental controls for digital devices. Many charities and companies, such as the NSPCC or Internet Matters, have online guidance and may be able to provide printable versions if contacted.[13]	Senior leaders and managers in ICBs and provider organisations
7	Consider additional implications if CYP are accessing digital solutions from shared devices. Confirm with providers to ensure the technology is appropriate for these use-cases.[13,42]	Senior leaders and managers in ICBs and provider organisations
8	Develop or source guidance (including in accessible formats) for CYP and parents/carers in staying safe when accessing digital devices and content, including safe charging (counterfeit charging cable and fire risks), recognising fraud, and spam. *	Senior leaders and managers in ICBs and provider organisations
9	Commission peers to support with the development of training or guidance.[14]	Senior leaders and managers in ICBs and provider organisations
	Communication and evaluation	
10	Develop accessible materials for CYP and parents/carers that clearly demonstrates the benefits of new digital solutions as well as comparisons to the alternatives available.[13,34,44,45] (see Appendix E for examples).	Senior leaders and managers in provider organisations
11	Collect testimonials from service users about digital services and solutions to support engagement with digital solutions.[13]	Senior leaders and managers in provider organisations
12	Work with local trusted messengers, community/faith centres to support messaging, awareness raising, and dissemination.[13,14]	Senior leaders and managers in provider organisations
13	Ensure that all guidance, training, feedback, and communication routes are available as offline or analogue options. [13,14,34,35]	Senior leaders and managers in provider organisations
14	Consider undertaking additional research to understand how beliefs and trust affect engagement with digitally enabled pathways.[14]	Senior leaders and managers in provider organisations

	Organisational processes	
15	Ensure internal guidance documents or standard operating procedures are updated, relevant and in line with national and governmental policies, for example the Online Safety Act (2023).[43]	Senior leaders and managers in provider organisations
16	Promote the use of transactional digital touchpoints, such as platforms to book appointments online, to help build confidence and capability before promoting the use of more complex digital solutions. [13,14]	Senior leaders and managers in provider organisations

Flowchart for clinicians



Jump to contents page

Beliefs and Trust in provider organisations: Where to start

1. Develop accessible guidance for CYP and parents/carers that outlines how their health data is stored and used.
2. Ensure as part of the scheduled reviews of internal guidance documents or SOPs that they are in line with national and governmental policies such as the Online Safety Act.
3. Explore mechanisms to incorporate CYP and parents/carers' feedback into service design and commissioning (ensuring those who are digitally excluded can access these).
4. Develop guidance that demonstrates benefits of digital solutions and comparisons to alternatives (see Appendix E for examples).

Example Case Study

A 15-year-old child is attending their first appointment for support in managing depression. They are suitable for a mobile phone app designed to help manage depression at home and at school. This is their first experience of engaging with a digital healthcare solution. The child has recently received a pre-paid SIM card and is being provided with a mobile phone through a local charity device donation scheme, although the clinician is not currently aware of this. Their digital skills and literacy are limited. The parents are concerned about the use of digital solutions, including uncertainty about how their child's data will be used, the benefits compared with non-digital options, and the risk of the device being used for non-healthcare purposes.

Challenges

- The child has limited digital skills and literacy and has only recently received their first mobile phone.
- The clinician is not aware of the child's or parents' digital access levels or digital skills.
- The child has not previously engaged with digital solutions for healthcare.
- The parents are hesitant about digital solutions and may prefer non-digital alternatives.
- The child has not been involved in any digital communications regarding service redesign, limiting their exposure to how such tools might be used.
- The service re-design may not have taken into account digitally excluded voices

Potential impact

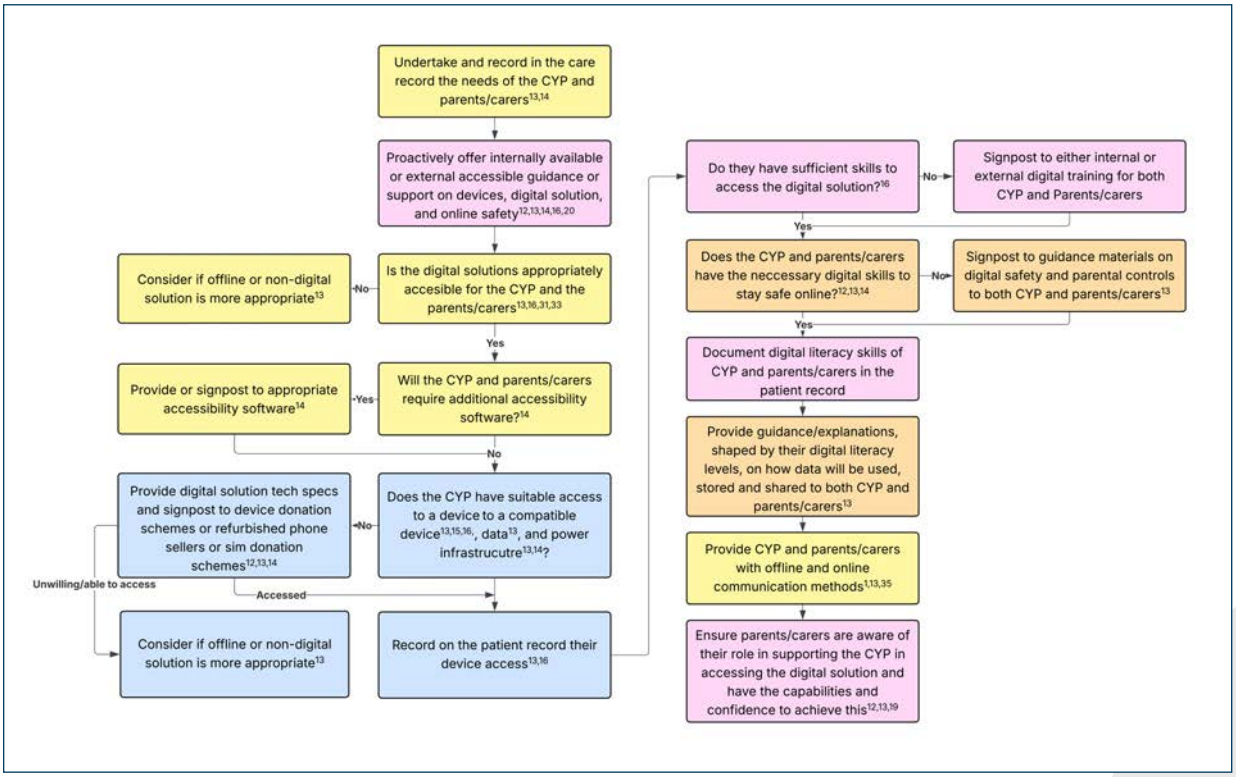
- The child may be prescribed the digital solution but struggle to engage meaningfully due to limited access and digital skills.
- Parents may be reluctant to support the use of the digital solution because of concerns about data use and privacy.
- The child may not attempt to use the digital solution if they do not believe it will benefit them.

Potential solutions

- The clinician assesses the child's digital access and skills to determine the additional steps needed to support engagement.
- Accessible guidance is made available through the organisations systems and shared with the family, explaining how data is stored and used by the digital solution.
- The Trust provides an easy-read table comparing the benefits of the digital solution with non-digital approaches, helping the child and parents make an informed choice.
- The child and parents are invited to participate in a patient and public involvement group so their perspectives can inform service design and delivery.

6. High level flowchart for clinicians

Below is a condensed flowchart for clinicians to present an overview of how an appointment may proceed. This flowchart combines and condenses the key steps across all of the relevant thematic areas.



7. Emerging Technologies

Emerging technologies continue to transform the delivery of health and care, requiring organisations to regularly review internal processes, policies and pathway with a CYP focus to ensure they remain fit for purpose. As AI and other advanced systems become more widely integrated into healthcare, it is vital that innovators can demonstrate they have actively included digitally excluded CYP. As these individuals will have no or minimal digital footprint, these groups risk being deprioritised, misrepresented or invisible in datasets especially in solutions using large models. Technological progress also brings practical challenges, including increasing demands on device capabilities, faster connectivity requirements and higher data consumption which may disproportionately affect digitally excluded families.

In addition, the automation of services may limit human interaction, potentially diminishing the personal and patient/doctor relationship elements of care that are particularly important for CYP. Increased reliance on digital solutions may place the burden of care further on the CYP, who must navigate complex systems while still developing the skills and emotional resilience required to do so safely. To mitigate these risks, new tools must be designed and implemented with inclusion, accessibility, safeguarding and CYP-centred care at their core. Organisations should actively monitor emerging developments, evaluate unintended impacts and ensure support pathways remain available for those who cannot or prefer not to engage digitally.

Jump to contents page

Acknowledgements

Name	Role	Organisation
Sue Arrowsmith	Steering Group	NHS England East of England
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Mary-Anne Morris	Steering Group	NHS England East of England
Nicola Dawson	Steering Group/Interviewee	NHS England East of England
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Sophie Knight	Steering Group	Health Innovation East
Amy Miller	Steering Group	Health Innovation East
Jill Conium	Interviewee	NHS England East of England
Jaime Hawkins	Interviewee	Suffolk and North East Essex ICB
Sam Glover	Interviewee	Healthwatch Essex
Simon Puchtler	Interviewee	Bedfordshire, Luton & Milton Keynes ICB
Claire Angel	Interviewee	Mid and South Essex ICB
Marie McEntee	Interviewee	Mid and South Essex ICB
Holly Westwood	Interviewee	North West Anglia NHSFT
Miah Farrell	Interviewee	North West Anglia NHSFT
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Deborah White	Interviewee	NHS England East of England
Naomi Mason	Interviewee	Hertfordshire Community NHS Trust

Jump to contents page

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Jump to contents page

Appendix A - Methods

The development of this framework was split into four workstreams:

1. Evidence review
2. Grey literature review
3. Stakeholder interviews
4. Framework development

Evidence Review

An evidence review was previously conducted by Health Innovation East and published in February 2024. Searches for journal articles published since 2013 were carried out on the electronic database PubMed, along with a search for grey literature using Google. Search results deemed relevant to CYP's digital exclusion and CYP's health were reviewed using the abstract, and the most relevant 25 papers were thematically analysed for this review (15 journal articles and 10 reports). Findings from this review were extracted and formed the basis for further data collection and analysis, as well as recommendations where appropriate.

Grey Literature Review

A grey literature search was conducted through Google with search terms relating to Digital Inclusion/Exclusion and CYP. Relevant blogs, charity pieces, newsletters were then selected for review. The grey literature supplemented the evidence review to identify challenges and recommendations for tackling digital exclusion for CYP.

Key stakeholder interviews

To support the recommendations 10 interviews took place with key stakeholders from the region. The key stakeholders were identified from a number of diverse sources, including Health Innovation East and NHS England East of England contacts, and presented to the project's Steering Group to determine which stakeholders to approach. Challenges and recommendations were identified in these interviews and used to reinforce or add to the recommendations previously identified.

Framework Development

The final stage of the project was to collate all the recommendations and challenges for inclusion in the framework. The design of the framework was determined in collaboration with the Steering Group and the Key stakeholder interviews.

Jump to contents page

Appendix B – Template sources

Below are two potential templates that can be used to assess the Digital Access and Skills of CYP.

Assessing Digital Access
This assessment helps identify whether children, young people and families have reliable access to the devices, data and connectivity they need to benefit from digital health services. The option that we have sourced as an example is from the Digital Connectivity: The Sixth Vital Sign study, which highlights the importance of understanding access as a core determinant of wellbeing. If the referenced approach is not available or appropriate, organisations should seek alternatives that evaluate the same core factors: access to an appropriate device, sufficient data and connectivity, and a safe digital environment.

Klonoff, David & Shang, Trisha & Zhang, Jennifer & Cengiz, Eda & Mehta, Chhavi & Kerr, David. (2021). Digital Connectivity: The Sixth Vital Sign. Journal of Diabetes Science and Technology. 16. 193229682110152. 10.1177/19322968211015241. Accessed at:

https://www.researchgate.net/publication/351551428_Digital_Connectivity_The_Sixth_Vital_Sign

Assessing Digital Skills
This assessment supports understanding of a child or young person's capability to engage effectively and confidently with digital services. We propose that is available utilising the Essential Digital Skills framework, which is also published by the Department of Education, which outlines the foundational skills required to participate in everyday digital life. If this framework is no longer available or appropriate, organisations should explore alternatives cover the same key areas, including communication, managing information, problem-solving, transacting online, and staying safe and secure.

https://assets.publishing.service.gov.uk/media/5b9246d4e5274a4236952309/Essential_digital_skills_framework.pdf

Jump to contents page

Appendix C – Equality Impact Assessment Example

An example Equality Impact Assessment can be accessed from the below link. This template demonstrates how an Equality Impact Assessment could look when ensuring Digital Inclusion is considered as part of processes.

https://healthinnovationeast.co.uk/wp-content/uploads/2026/02/Equality-Impact-Assessment.docx

Jump to contents page

Appendix D – Accessibility Guidance

Below is a small selection of links to provide guidance on making services accessible, (including digital).

Government Digital service and Central Digital and Data Office
Guidance and tools for digital accessibility

Accessibility Community
Making your service accessible: an introduction

NHS Digital
NHS Digital Service Manual - Accessibility

NHS England
Accessible Information Standard – Implementation Guidance

Jump to contents page

Appendix E – Patient Facing Material example

Below is a combined example of what may be supplied to a patient:

Digital Solution Technical Specifications
Devices: Mobile phones or tablets
Operating System: Android version 14.3 or higher, Apple version 22.2 or higher
Bluetooth: Not required
Internet requirements: One off download

Accessing Devices
Local device donation schemes available at: Local Charity 1 (01234 567890), National Charity 2 (email@charity2.com)

Accessing data
Public Wi-Fi Locations: Local Library, Local Charity

Digital Skills Training
Internal Guidance Documents [add your link]
External providers: Charity 1 (01234 567890), Company 1 (01234567890)
Parental control guidance: [add your link]
Online safety guidance: [add your link]

Digital Solution
Benefits of the digital solution provide continuous at home monitoring of condition and reducing the need of appointments in the clinic.

Digital Solution 1

Pros:
Lighter
Discrete
Quicker readings
Continuous monitoring

Cons:
Increased battery usage
Increased data requirements

Digital Solution 2

Pros:
Reduced battery usage
Scheduled data uploads

Cons:
Bulkier
Infrequent monitoring

Non-Digital Solution

Pros:
No devices or data required
Discrete

Cons:
Self-administered
Regular follow up required

Jump to contents page