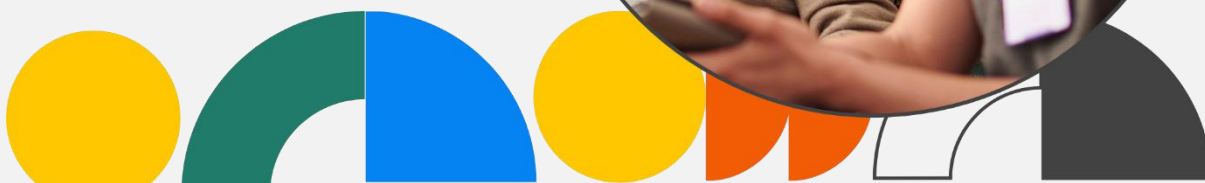
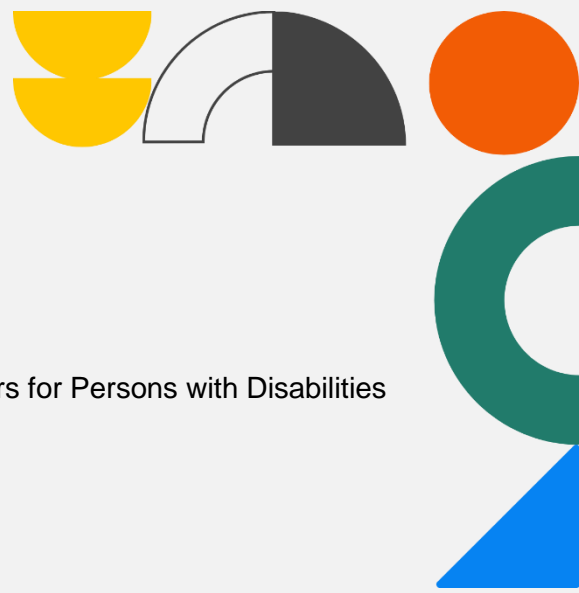


Report

Use of Artificial Intelligence in social care for persons with disabilities





Acknowledgments

This is a report of the European Association of Service providers for Persons with Disabilities (EASPD) subcontracted to Policy Impact Lab.

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The Policy Impact Lab believes that meaningful change starts with working closely with those at the heart of the issue we aim to address. This study highlights the experiences, challenges, and insights shared by different people engaged in the social service sector for persons with disabilities, including service providers, persons with disabilities, AI developers, academics, and organisations.

We are deeply grateful to everyone who made this publication possible. A special thanks to Omor Ahmed, Thomas Bignal, and Miguel Buitrago for their hard work, guidance, and commitment throughout the research process. Your contributions have been invaluable.

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List of abbreviations and acronyms

AI	Artificial Intelligence
CRPD	[UN] Convention on the Rights of Persons with Disabilities
EASPD	European Association of Service Providers for Persons with Disabilities
EDF	European Disability Forum
EPR	European Platform for Rehabilitation
EPSU	European Public Service Union
EU	European Union
GDPR	General Data Protection Regulation
ILO	International Labour Organisation
LLM	Large Language Models
NLP	Natural Language Processing
PAR	Physical Assistance Robot
STS	Scene to Speech
STT	Speech to Text
WCAG	Web Content Accessibility Guidelines

List of terms

Artificial intelligence (AI)

Field of computer science that focuses on creating systems capable of performing tasks normally requiring human intelligence, including, but not limited to, speech and image recognition, text and visual output generation, analysis, and decision-making

AI-powered systems

Practical applications of AI, often integrated with operational systems and/or broader IT infrastructure to enhance functionality

AI tools	User-facing applications designed for end-users to leverage AI capabilities for specific tasks, often requiring minimal technical knowledge
Caregivers	Individuals who provide assistance, support, and care to persons with disabilities – can be unpaid (i.e., family members) or paid (i.e., trained professionals)
Disability services	A specialised category of social services tailored explicitly for persons with disabilities to address their unique needs.
Persons with disabilities	Persons who have long-term physical, mental, intellectual, or sensory impairments that may hinder their participation in society on an equal basis with others
Service users	Individuals who receive support, care, or assistance from a social service provider.
Social care services	A subset of social services. Public organisations and private companies providing care-related support to improve daily living, independence, and well-being for persons with disabilities and long-term illnesses.
Social services	Public or private systems and organisations providing support to meet individuals' social, economic, and welfare needs, and includes a wide range of activities.
Social service providers	Organisations, entities, or individuals, responsible for delivering support services to persons with disabilities.





Executive summary

What is the study about?

This research study was commissioned by the European Association of Service Providers for Persons with Disabilities (EASPD) and conducted by the Policy Impact Lab between September and December 2024.

The study aimed to provide an analysis of the current state and challenges associated with implementing artificial intelligence (AI) tools in social care and support services for individuals with disabilities; highlight the challenges and opportunities for successful integration of AI systems into social care services; identify and explore exemplary AI practices in social care and support services for individuals with disabilities and provide recommendations for efficient and ethical implementation of AI in social care and support services for persons with disabilities.

How was the study conducted?

The research team used literature review and key informant interviews as the main research tools. The literature review encompassed a variety of documents including relevant policy documents, reports, studies conducted by international organisations and academia as well as news articles. Key informant interviews were conducted with a diverse range of stakeholders, including representatives from international organisations, academics, social service providers, regional and national organisations of persons with disabilities and AI developers and implementers.

How is the study structured?

The study is structured around three main sections focusing on the (1) current use of AI in the social care for persons with disabilities, including information on its benefits, challenges as well as the role of policy in this areas; (2) future of AI in the disability social care, including how the existing challenges can be addressed with some more specific steps described for policy makers and organisations and a potential of AI in the future.

What are the main findings of the study?

Current use of AI in social care for persons with disabilities

Benefits of using AI: As AI became more mainstream in recent years, both individual users and organisations could reap its benefits: task automation, support in decision-making, 24/7 availability, and data analysis, to name a few. Social care sector, often perceived as “old-fashioned” in terms of adopting new technology, has also been catching up with AI tools, and have witnessed some tangible benefits. Most AI tools currently used in the sector are based on Natural Language Processing (NLP) - the ability of AI to process and understand human language. For persons with disabilities, the main benefit that AI provides is increased independence. For instance, many already leverage virtual assistants to control their home

environment **using** smart light switches, thermostats, and other smart devices. Increased independence positively affects their wellbeing, makes them feel more at home in their space, and allows to rely less on caregivers. Furthermore, speech-to-text tools, such as automated captioning, real-time transcription, and speech recognition, empower users to engage more easily in social situations. Service providers and caregivers, on the other hand, tend to use NLP tools **for** administrative tasks. By freeing up from repetitive tasks – taking service notes, generating reports, setting reminders – caregivers **can** focus on a more “human” aspect of the job and foster a meaningful connection with the recipients of care. Additionally, caregivers are increasingly using AI to personalise care approach to the service users by brainstorming ideas through ChatGPT, analysing service notes, or generating tailored care plans. At an organisational level, AI typically related to workflow optimisation and is often invisible – it can be embedded in solutions that organisation is already using – HR and data analysis tools, and data management systems. In fact, the users can even be unaware that they might be using AI-powered technology daily. In some cases, more advanced AI tools are designed and used to address specific concerns of persons with disabilities. Their current application is still limited, however, there is significant promise in future application.

Challenges and barriers of using AI: While AI holds significant promise for the social care sector, its adoption also brings a range of challenges that organisations and services users should be aware of and bear in mind when deploying AI technologies. One key issue is the varying level of awareness among stakeholders regarding essential aspects of AI, such as privacy, data protection, and ethics. Additionally, there is often a pressure to adopt AI driven by a “fear of missing out” rather than a thorough evaluation of its relevance or necessity. Lack of digital skills among care workers but also service users has been identified as one of the key challenges to mainstream AI tools, often leading to reluctance and fears of replacement. Training tailored to individual needs, leadership support, and accessible training and learning resources can mitigate these gaps. Financial barriers also hinder AI adoption, with high costs for customised solutions limiting accessibility for smaller organisations. In addition, organisational challenges such as poor planning and insufficient support from management can hinder effective AI integration. Ethical considerations, such as privacy, data security, and bias in AI systems, require attention to avoid discrimination and ensure transparency. Over-reliance on assistive technology is another risk, potentially undermining user independence. Addressing these challenges involves comprehensive training, sustainable funding models, and fostering a balanced approach to AI integration, positioning it as a tool to support, not replace, human care.

Policy role: Policy plays a crucial role in ensuring the effective and safe use of AI, particularly in promoting accessibility and inclusivity. Without robust regulation, there is little incentive for developers to prioritise these aspects. However, the current guidance and regulation around AI are relatively recent and struggle to keep pace with the rapidly evolving field. In many countries, AI accessibility regulations are either insufficient or entirely absent. This lack of legal frameworks to hold developers accountable can adversely impact the needs of persons with disabilities. A significant regulatory milestone at the EU level was the adoption of the EU AI Act in 2024. While widely regarded as a progressive step toward regulating AI, experts highlighted concerns over its categorisation system, which overlooks how specific AI

technologies may impact groups like persons with disabilities. Critics furthermore suggest shifting broad risk categories to evaluating the specific uses of AI to better address disproportionate risks it may have on persons with disabilities. The EU AI Act, set to take effect in 2025, will impact social service providers deploying or developing AI tools, particularly those classified as high-risk, which require stricter compliance measures, including fundamental rights assessments. Organisations should proactively prepare by familiarising themselves with the Act, conducting risk assessments, implementing compliance processes, and training staff on ethical, legal, and technical aspects of AI usage. Smaller organisations may face challenges due to limited resources, but they can leverage support tools like TeachPrivacy's EU AI Act Training and the OECD AI course, alongside compliance resources such as OneTrust's EU AI Act Compliance Kit.

Future of AI in social care for persons with disabilities

Addressing the challenges: Implementing AI safely and ethically in the social care sector is a complex endeavour that demands collaboration and coordinated efforts from organisations, developers, regulatory bodies, and individuals with disabilities. Increasing digital literacy levels and raising awareness regarding ethical considerations and inclusivity is relevant for all involved stakeholders and could help resolve numerous challenges. At the same time, there are specific actions that organisations, developers, and policymakers can do to contribute. Many organisations adopt AI out of fear of missing out, which often leads to frustration and wasted resources. Instead, organisations should focus on thorough AI planning, actively engage users for whom the tool is intended, and pilot these tools before fully committing to them. Additionally, the organisations have a responsibility to provide regular training on AI concepts, ensure robust data governance practices, and avoid treating AI as a replacement for workers. Policymakers can support these efforts by involving persons with disabilities in policy development, encouraging collaboration between local, national, and international authorities. Moreover, a need for a more substantial accessibility reform has been identified, calling for the integration of multiple accessibility domains, including digital services and public infrastructure. Specific recommendations for different stakeholder groups are outlined in Recommendations.

Future of AI: Many promising AI tools are currently used in limited capacities due to their cost and technological limitations. However, in the future, as technology becomes more advanced and accessible, there is a significant potential to improve the independence and quality of life of persons with disabilities, as well as address workforce challenges within the social care sector. There is much promise in assistive technology and robotics – something that could further enhance independence of persons with disabilities. Social robots like Zora could offer companionship and cognitive assistance and alleviate loneliness, while physical assistance robots could help address motor challenges faces by persons with physical disabilities. Innovations such as smart glasses, exoskeletons, and advances communication aids all have a great transformative potential, but are hindered by infrastructure gaps, high costs, as well as ethical (and legal) uncertainty.

Recommendations

The study presents a series of recommendations aimed at enhancing the integration and use of AI in social care. The key recommendations are summarised as follows:

Organisations should promote comprehensive understanding of AI tools and empower informed decision-making: Ensure that social service providers and persons with disabilities have a thorough understanding of AI tools, their benefits and risks before their adoption to support informed decision-making. This can be achieved through tailored training and awareness-raising initiatives, avoiding assumptions about users' familiarity with AI and its implications. Furthermore, equip

Organisations, persons with disabilities as well as formal and informal carers should prioritise awareness, consent, and needs-based assessment: Introduce AI only after conducting needs-based evaluations to determine its relevance in specific contexts which can avoid the ineffective adoption of AI due to fear of missing out is crucial.

Organisations should contribute to enhanced digital literacy: Strengthen digital literacy among care workers, persons with disabilities, and carers to bridge the digital skills gap across geographic regions and age groups. This will ensure equitable access and better understanding of AI tools, risks, and trade-offs.

Organisations should position AI as a complement, not a replacement: Emphasise the role of AI as a tool that complements human care work rather than replacing it by demonstrating specific examples of how AI can support care professionals while maintaining the human factor in social care.

Organisations should encourage a balanced AI use: Promote a balanced approach to AI use to prevent over-reliance. This includes fostering skills and independence outside of technology-enabled environments, supported by regular assessments of users' needs and tailored training.

Organisations should establish sustainable funding models: Address funding barriers by developing sustainable funding frameworks. Umbrella organisations like EASPD can play a pivotal role by advocating for policy changes, raising awareness, sharing funding opportunities, and fostering public-private partnerships to support accessible AI solutions.

Policy makers should strengthen policy and regulatory frameworks: Policymakers should acknowledge the disproportionate risks that certain AI tools may pose to persons with disabilities and make related provisions in the legal and regulatory AI frameworks. Incorporating the perspectives of persons with disabilities and their representatives into policy cycles is essential for creating inclusive regulatory frameworks.

1 Introduction

The European Association of Service Providers for Persons with Disabilities (EASPD) requested Policy Impact Lab to conduct this research assignment. The research was undertaken between July and December 2024.

This introduction provides context to the study (section 1.1), presents research objectives (1.2) and describes the study methodology (1.3).

1.1 Context

The adoption of the UN Convention on the Rights of Persons with Disabilities (CRPD) in 2006 marked a pivotal shift in understanding disability, recognising it as a social construct rather than medical condition. This perspective asserts that physical and mental impairments must not be grounds for discrimination, violation of human dignity, or erosion of human rights.¹ Building on this paradigm, recent efforts have aimed to enhance the independence and quality of life for persons with disabilities through a human rights-based approach to health and social care. Artificial Intelligence (AI) has emerged as a promising tool in facilitating this transition, offering innovative solutions to promote independence, accessibility, and inclusion.

However, there is limited research on the practical use of AI tools in care and support services for persons with disabilities. Furthermore, the integration of AI into social care is accompanied by significant challenges. Studies by the European Platform for Rehabilitation (EPR)² and the European Disability Forum (EDF)³ highlight issues such as insufficient digital literacy among caregivers and persons with disabilities, ethical concerns, privacy risks, potential discrimination, and the affordability of AI tools. The European Union has taken a notable step to address these concerns through the EU AI Act⁴, introduced in 2024. This regulatory framework adopts a risk-based approach, categorising AI systems by their potential harm, ranging from unacceptable risk (e.g., tools for behavioural manipulation) to low risk (e.g., AI-powered video games). While the Act aims to mitigate risks, it falls short of addressing challenges unique to vulnerable groups, including persons with disabilities.

To ensure that AI fulfils its potential to support persons with disabilities, it is essential to address these unique challenges, while considering intersecting factors such as gender, age, and socio-economic status, which can amplify inequities in algorithmic outcomes. This underscores the need for a deeper understanding of the trends, risks, and opportunities

¹ Committee on the Rights of Persons with Disabilities, General Comment No. 6, 2018.

² European Platform for Rehabilitation. Artificial Intelligence and Service Provision for People with Disabilities – an analytical paper, <https://www.epr.eu/wp-content/uploads/Artificial-intelligence-and-service-provision-for-people-with-disabilities-Analytic-al-paper.pdf>

³ European Disability Forum (2021), Disability perspective on Regulating Artificial Intelligence – position paper on the European Commission Proposal for Regulating Artificial Intelligence (AI), <https://www.edf-feph.org/content/uploads/2021/11/EDF-Position-Paper-on-EU-Artificial-Intelligence-AI-Regulation-1.pdf>

⁴ Regulation 2024/1689 laying down harmonised rules on artificial intelligence, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32024R1689>

associated with AI in social care, paving the way for inclusive, equitable, and accountable AI solutions.

1.2 Research objectives

The rapid advancement of AI and its integration into social care present both opportunities and challenges for persons with disabilities. While AI has the potential to enhance accessibility and independence, the unique risks and barriers faced by individuals with disabilities, combined with the lack of research focusing on the practical use of AI and limitations of existing regulatory frameworks, highlight the need for targeted research.

Against this backdrop, this study seeks to deepen an existing body of knowledge of AI's role and practical implementation in social care for persons with disabilities and to provide actionable insights for its ethical and effective use. The study focuses on the use of AI by social service providers in direct care, managerial, and administrative tasks, as well as its adoption and use by persons with disabilities themselves and their families and informal carers. The analysis explores the current state of AI implementation in social care globally, highlighting both challenges and opportunities for its integration. By identifying exemplary practices, the study provides insights and recommendations for the efficient and ethical use of AI in supporting individuals with disabilities.

Specifically, the study aims to achieve the following objectives:

- (1) provide an analysis of the current state and challenges associated with implementing artificial intelligence (AI) tools in social care and support services for individuals with disabilities across Europe and globally;
- (2) highlight the challenges and opportunities for successful integration of AI systems into social care services;
- (3) identify and explore exemplary AI practices in social care and support services for individuals with disabilities,
- (4) provide recommendations for efficient and ethical implementation of AI in social care and support services for persons with disabilities.

1.3 Methodology

The study employed a literature review and key informant interviews as its primary research methods. The literature review encompassed relevant policy documents, reports, studies conducted by international organisations and academia as well as news articles. A detailed list of the reviewed literature is provided in Annex I. Key informant interviews were conducted with a diverse range of stakeholders, including representatives from international organisations, academics, social service providers, regional and national organisations of persons with disabilities, AI developers, and implementers. These interviews were semi-structured and primarily conducted individually. In total, 19 interviews were carried out, involving 21 participants. A detailed list of interviewees is provided in Annex II.

2 Current use of AI in Social Care

In recent years, AI has seen a massive surge in popularity in personal use and workplace, particularly with rapid development of generative AI. According to reports published by Google⁵ and McKinsey⁶, the use of generative AI has doubled since 2023, with over 60% of the respondents using AI-driven tools in their daily and professional lives. AI is being leveraged in all sectors, from healthcare to agriculture, for a wide range of tasks, including summary generation, brainstorming, sentiment analysis, and workflow optimisation⁷.

Generative AI refers to deep-learning models that can generate high-quality text, images, and other content based on the data they were trained on.

A key advantage of AI-driven tools is their exceptional adaptability that can provide highly personalised support tailored to the unique needs of each user. In the social care sector, such adaptability is especially valuable for persons with disabilities and service providers, facilitating the development of personalised support plans and daily routines, as well as addressing unique care needs. As one of the interviewees put it, “*social services should be customised as if it was a suit designed by a tailor*” - and AI can be a powerful tool to achieve that. These and other benefits of AI are highlighted in more detail in section 2.1.

At the same time, there are significant challenges associated with the integration of AI in the disability sector. Algorithmic bias, privacy, risk of surveillance, lack of human interaction, and digital marginalisation of persons with disabilities are some of the most cited ethical concerns highlighted by leading inclusion-focused organisations, including European Social

⁵ Google (2024), Data and AI trends report 2024, <https://data-ai-trends.withgoogle.com/>

⁶ McKinsey (2024), The state of AI in early 2024: Gen AI adoption spikes and starts to generate value, <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai>

⁷ World Economic Forum (2023), Life after the hype: How AI is transforming industries and economies, <https://www.weforum.org/stories/2023/12/life-after-the-hype-how-ai-is-transforming-industries-and-economies/>

Network⁸, Eurocarers⁹, Inclusion Scotland¹⁰, and scholars^{11 12 13} alike. Lack of resources, poor accessibility, and reluctance of social care providers to integrate AI tools in their workflow have also been identified as significant barriers. Additionally, a regional disparity in AI implementation should be taken into consideration: low-income countries account for less than 1% of generative AI traffic¹⁴, increasing the risk of deepening the digital divide between the countries¹⁵. These and other challenges are discussed in more detail in section 2.2.

2.1 Benefits of using AI

With the advancement of AI technology in recent years, its implementation has expanded beyond niche applications, increasingly benefiting persons with disabilities and service providers. In this section, we explore AI tools already utilised within the sector based on existing literature and interviews with social care professionals, organisations, developers, and researchers. This section includes case study cards showcasing successful real-life examples of AI implementation gathered during the interview programme. Additionally, Annex III includes a list of AI tools mentioned in the report.

2.1.1 Language-Based AI: The Leading Tool in Social Care Personalisation

Most AI tools currently used in the social care sector are based on Natural Language Processing (NLP) – an AI field with the most visible advancements¹⁶. Virtual assistants (e.g., Siri, Alexa), machine translation tools (e.g., Google Translate, DeepL), autocorrection (e.g.,

⁸ European Social Network (2024), The Transformation Potential of AI on Social Services, <https://www.esn-eu.org/news/transformation-potential-ai-social-services#:~:text=AI%20algorithms%20can%20analyse%20data,individuals%20at%20risk%20of%20homelessnes>.

⁹ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks, https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

¹⁰ Inclusion Scotland (2023), Disabled people's rights in an Artificial Intelligence world - An Overview, <https://inclusionScotland.org/wp-content/uploads/2023/11/Overview-Disabled-Peoples-Rights-in-an-Artificial-Intelligence-World.pdf>

¹¹ Smith, E. (2023), Artificial intelligence and assistive technology: risks, rewards, challenges, and opportunities, <https://www.tandfonline.com/doi/full/10.1080/10400435.2023.2259247>

¹² Newmann-Griffis, D. et coll. (undated), Definition drives design: Disability models and mechanisms of bias in AI technologies, <https://arxiv.org/pdf/2206.08287>

¹³ Gadiraju, V. et coll. (2023), "I wouldn't say offensive but...": Disability-Centered Perspectives on Large Language Models, <https://dl.acm.org/doi/pdf/10.1145/3593013.3593989>

¹⁴ Qiang, Z. C.; Liu, Y.; Wang, H. (2024), Who on earth is using generative AI?, <https://blogs.worldbank.org/en/digital-development/who-on-earth-is-using-generative-ai->

¹⁵ World Economic Forum (2024), Why we must think locally when planning globally with AI, <https://www.weforum.org/stories/2024/02/ai-think-locally-globally/>

¹⁶ Gruetzemacher, R. (2022), The Power of Natural Language Processing, <https://hbr.org/2022/04/the-power-of-natural-language-processing>

Microsoft Word Autocorrect), chatbots (e.g., ChatGPT), and content recommendation (e.g., YouTube's video recommendations) all fall under the NLP branch¹⁷.

Natural language processing is a subfield of AI that enables computers to understand and communicate with human language.

The main advantage of language-based AI lies in its ability to process and understand human language, enabling users to generate insights, translate text, brainstorm ideas, gather information, and more^{18 19}. Specific examples of language-based AI applications in the social care sector are summarised below.

Large Language Models (LLMs) assist with the development of personalised care plans.

Large LLMs are widely used by both individuals with and without disabilities in their personal and professional lives for drafting emails, brainstorming ideas, and simplifying information - according to The Economic Times, ChatGPT hit a record number of 200 million weekly users in August 2024, making it by far the most popular LLM²⁰. However, the potential of this tool extends beyond general applications, offering opportunities to address unique needs of persons with disabilities, service providers, and caregivers²¹, for instance, some service providers are leveraging ChatGPT to create individualised care plans for their clients.



One organization has developed and implemented a tool that uses natural language processing (NLP) to analyse service notes, making a significant impact on how they deliver care. This tool helps service providers create summaries, develop personalized care plans, and pinpoint unmet needs for service users. By categorising and labelling the notes, it identifies key aspects of a person's life—such as significant events, interests, hobbies, and mental health concerns. Using this information, the AI model generates personalized care recommendations tailored to everyone's unique situation. The tool has proven to be beneficial for non-verbal service users, ensuring their needs are understood and addressed. Additionally, it incorporates sentiment analysis to examine the tone and narrative within service notes, allowing staff to identify critical moments in a person's life and evaluate whether their needs are truly being met.

- example provided by one of the interviewees

¹⁷ IBM (undated), What is NLP (natural language processing)?, <https://www.ibm.com/topics/natural-language-processing>

¹⁸ Deng, J.; Lin, Y. (2022), The benefits and challenges of ChatGPT: An overview, <https://drpress.org/ojs/index.php/fcis/article/download/4465/4313>

¹⁹ ISO (undated), Unravelling the secrets of natural language processing, <https://www.iso.org/artificial-intelligence/natural-language-processing>

²⁰ Rani, S. (2024, December 3). OpenAI says ChatGPT's weekly users have grown to 200 million. *The Economic Times*. <https://economictimes.indiatimes.com/tech/artificial-intelligence/openai-says-chatgpts-weekly-users-have-grown-to-200-million/articleshow/112911565.cms>

²¹ Zoe Amar. (2024, September 13). *AI in social care: shaping the future of the sector*, <https://zoeamar.com/2024/09/13/ai-in-social-care/>

LLMs like ChatGPT can also help informal caregivers with healthcare management of their loved ones and own emotional regulation. Stress among informal caregivers, associated with managing the coordination of health and social care services for their loved ones, is a widely recognised problem, sometimes referred to as a “caregiver burden” in the literature²². AI-powered chatbots have the potential to alleviate some of that stress by providing caregivers accessible summaries of relevant resources, navigating available services, and educating them about their rights²³. While not without ethical risks, chatbots can also be used for emotional regulation, providing companionship and emotional support, when professional help is limited²⁴.



A caregiver uses ChatGPT to create monthly plans for support workers, tailored to service users. First, the caregiver creates a verbal portrait of a service user and then asks ChatGPT to generate a support plan based on the description. For instance, an input might sound something like this:

“The client is a 24-year –old woman living in London. She has a cognitive disability. She is interested in fashion design and likes designs by Vera Wang. Based on this information, generate me a personalised support plan for a month to help her follow her passion. Break it down by the week and assign appropriate hours.”

The generated plan is then reviewed and adapted by the carer. This approach allows to tailor care to everyone by leveraging a mainstream AI tool at no additional cost. Providing anonymised descriptions rather than sharing personal information that could be associated with the service user makes the process both effective and ethically sound.

- example provided by one of the interviewees

Smart home devices and virtual assistants promote independent living by minimising the need for external support. Virtual voice assistants paired with smart home appliances (e.g., Google Home and Amazon Echo) proved to positively impact independence and overall quality of life of persons with disabilities living at home or in community-based arrangements²⁵ ²⁶. By giving voice commands to virtual assistants, users can operate the lights and temperature, call their friends and family, or set reminders to take medication without

²² Liu, Z., Heffernan, C., & Tan, J. (2020). Caregiver burden: A concept analysis. *International journal of nursing sciences*, 7(4), 438-445.


²³ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks, https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

²⁴ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks, https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

²⁵ Smith, E. M. et coll. (2023), Artificial intelligence and assistive technology: risks, rewards, challenges and opportunities, <https://www.tandfonline.com/doi/full/10.1080/10400435.2023.2259247> and ENIL <https://www.tandfonline.com/doi/full/10.1080/10400435.2023.2259247> and Shah, M. (2024), Fact Sheet on Artificial Intelligence (AI) and independent living,

²⁶ techUK (2021), Better Data-Better Outcomes: The quest for Artificial Intelligence in social care, <https://www.techuk.org/resource/better-data-better-outcomes-the-quest-for-artificial-intelligence-in-social-care.html>

additional assistance from a service provider. Typically, smart home device users report feeling less reliant on their caregivers, leading to more comfortable and independent daily routines.

A study by Cleland et al.²⁷, observed the lives of eight people with acquired disabilities in Australia. One person lives in a shared house, and others live either independently, or with a relative. All users have been using home automation from one to thirty-two years. An aspect that was important for all participants was increased independence in their own homes: 

"I think because you have that control. It's your house, you're still the master of your house. I'm not dependent on more carers to help me."

The study conducted by Wingerden et al.²⁸ also supported this claim. It examined how individuals with intellectual disabilities experienced using Google Home for the first time, with no prior familiarity with home automation. As participants became more comfortable with the technology, the findings highlighted its potential to empower them to make independent choices and take initiative in completing household tasks. Moreover, it positively affected their overall well-being and increased social participation with other participants – some were eager to share new facts or jokes they learnt from Google Home, and others showed interest in the experiences of their peers.

Speech-to-text (STT) tools allow users to engage more meaningfully in social situations.

STT tools are being extensively used by persons with and without disabilities to facilitate communication tasks, particularly in occupational and educational contexts²⁹. Mainstream live captioning tools³⁰ embedded in many virtual meeting platforms, for instance, make online meetings more accessible for deaf and hard-of-hearing people, allowing them to follow the conversation and participate in the discussion.

STT also enables service providers to streamline notetaking to focus more on the conversation with the service user. Service providers can utilise one of the many mainstream (e.g., Otter.ai) or specialised (e.g., Magic Notes, Notta) note-taking tools. Apart from saving hours of work for service providers³¹, transcribing notes through an AI system also benefits the service user: it reduces human bias, increases impartiality of the recorded conversation, and shifts the power to the service users by providing them with more control over their narrative - a protection in the event of disputes or misunderstandings.

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²⁸ Wingerden, E. van et coll., Hey Google! Intelligent personal assistants and well-being in the context of disability during COVID-19, <https://onlinelibrary.wiley.com/doi/pdfdirect/10.1111/jir.13064>

²⁹ Sand, C., Svensson, I., Nilsson, S., Selenius, H., & Fålh, L. (2024). Speech-to-text intervention to support text production for students with intellectual disabilities. *Disability and Rehabilitation: Assistive Technology*, 1-8, <https://www.tandfonline.com/doi/pdf/10.1080/17483107.2024.2381785>

³⁰ ENIL <https://www.tandfonline.com/doi/full/10.1080/10400435.2023.2259247> and Shah, M. (2024), Fact Sheet on Artificial Intelligence (AI) and independent living, https://enil.eu/wp-content/uploads/2024/04/Fact-Sheet-on-AI-and-Independent-Living_FIN.docx

³¹ Magic Notes, HYPERLINK "https://magicnotes.ai/"<https://magicnotes.ai/>

One interviewee shared a compelling example of how their workplace is using AI to boost efficiency. One tool they rely on is automated note-taking during meetings. By handling the note-taking process, the tool allows participants to focus entirely on the discussion. Neurodivergent staff members have praised it as a “game changer” for improving their productivity. Another AI tool widely used in their organization is AI-generated subtitles, which have made a big difference for deaf and hard-of-hearing team members. This tool ensures they can follow along during online meetings and improves communication, especially when an interpreter isn’t available.

- example provided by one of the interviewees

2.2 Workplace automation: Management of administrative tasks among care workers

AI-powered solutions can significantly reduce the administrative tasks for social care workers. Interviews and desk research demonstrate^{32 33} that AI-powered solutions – including data management, shift scheduling, and analytical tools – are being implemented at an organisational level in the social care sector to streamline work processes, improve resource allocation, and automate routine administrative tasks. These AI solutions have the potential to significantly improve the lives of care workers by freeing up more of their time to focus on providing meaningful care – the very aspect of the profession that originally inspired them to become professional caregivers. As was highlighted by several interviewees, simplification of bureaucratic procedures might also help solve the sector's understaffing problem.

2.2.1 AI for person-centredness

The social care sector is leveraging other types of AI tools, including image recognition, multimodal systems, wearable devices, and robots. While there is evidence of positive outcomes, for instance, of using social robots in specialised education^{34 35 36}, such tools are

³² Wassal, K., Ashurst, C., Hron, J., & Zilka, M. (2024). Reimagining AI in Social Work: Practitioner Perspectives on Incorporating Technology in their Practice. arXiv preprint arXiv:2407.10244., <https://arxiv.org/abs/2407.10244>

³³ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks, https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

³⁴ Guemghar, I., Pires de Oliveira Padilha, P., Abdel-Baki, A., Jutras-Aswad, D., Paquette, J., & Pomey, M. P. (2022). Social robot interventions in mental health care and their outcomes, barriers, and facilitators: scoping review. *JMIR Mental Health*, 9(4), e36094, <https://mental.jmir.org/2022/4/e36094>

³⁵ Kouroupa, A., Laws, K. R., Irvine, K., Mengoni, S. E., Baird, A., & Sharma, S. (2022). The use of social robots with children and young people on the autism spectrum: A systematic review and meta-analysis. *Plos one*, 17(6), e0269800, <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0269800>

³⁶ Papakostas, G. A., Sidiropoulos, G. K., Papadopoulou, C. I., Vrochidou, E., Kaburlasos, V. G., Papadopoulou, M. T., ... & Dalivigkas, N. (2021). Social robots in special education: A systematic review. *Electronics*, 10(12), 1398, <https://www.mdpi.com/2079-9292/10/12/1398>

implemented at a much lower scale due to their higher complexity. In this section, we share some examples of more complex AI tools currently in use in the social care sector.

Co-piloting tools empower persons with cognitive disabilities to navigate complex tasks and enhance their decision making. Cognitive simplification tools hold significant potential to facilitate daily tasks and enhance social interactions for individuals with intellectual disabilities, fostering greater societal inclusion and participation ³⁷. While ChatGPT can act as a cognitive aid, specialised tools developed with a particular social context in mind offer a more tailored solution for a given user. For instance, the simplification of official documents using an AI translation-like tool, like the one developed by an interviewee of this study, can help persons with cognitive impairments stay more informed about current events and enhance their decision-making capabilities.

An organisation runs a chain of second-hand bookstores, vintage clothing stores, and cafes, providing vocational training and supported employment environment for persons with psychosocial disabilities. One of the tools that they are using daily is an AI-powered inventory management system that can locate necessary books across several bookstores. Moreover, the tool simplifies the tasks by breaking them into several smaller tasks, making the process less overwhelming for the service users. This way, the service users always know the next step and can confidently complete all requirements and confidently move forward. The interface of the tool is designed in a simple and accessible way, allowing the users to customise it based on their needs. The tool not only facilitates vocational training and increases confidence levels of service users but also prepares them for transitioning to the open labour market.

- example provided by one of the interviewees

Assistive devices for persons with specific disabilities facilitate day-to-day tasks and improve communication. Designed with a primary target group with a particular disability in mind, specialised AI tools aim to address specific needs of their users. For instance, AI-powered assistive devices can provide image and environment descriptions for visually impaired persons (e.g., Microsoft's Seeing AI and Be My Eyes). Voice recognition and generation technology can provide voice for mute people (e.g., Speechify and Murf AI). There is also much promise in advanced assistive technology, such as care robots (e.g., ElliQ and Pepper), and smart wheelchairs (e.g., Whill and Meubon). However, the more advanced tools are still in the early stage of development and are explored in more detail in section 3.2 Potential of AI in the Future.

A developer we spoke to designed a tool that helps people with locked-in syndrome and amyotrophic lateral sclerosis communicate using an AI system built on voice recognition, text generation, and sentence recommendation. The tool identifies speakers around the user, processes their speech, and suggests relevant sentences or sentence parts based on the context. The software can be

³⁷ Moreno, L., Petrie, H., Martínez, P., & Alarcon, R. (2024). Designing user interfaces for content simplification aimed at people with cognitive impairments. *Universal access in the information society*, 23(1), 99-117, <https://link.springer.com/article/10.1007/s10209-023-00986-z>


personalised to the user, specifying their age, disease, family background, hobbies, current mood, and incorporates this information in conversation suggestions. The user then selects the most appropriate response or uses a part of it as a prompt. The tool is designed to support different keyboard configurations, including pictographic communication. It currently assists over 3000 users, many of whom reported reduced frustration and improved quality of life.

- *example provided by one of the interviewees*


2.3 Challenges and barriers of using AI

AI has brought significant promise to the social care sector, as outlined in the previous section, offering innovative solutions to enhance independence, accessibility, and inclusion for persons with disabilities while helping social service providers, carers and workers perform their roles more efficiently and effectively. However, its adoption also introduces complexity and raises important questions that must be carefully addressed, highlighting a range of challenges that accompany its potential benefits. In this section, we examine the obstacles associated with implementing AI in the disability social care, drawing on insights from existing literature and interviews conducted in the framework of this study.

In addition to specific challenges that are described further below, the integration of AI in social care is accompanied by two horizontal issues that cut across various aspects of its implementation. One major concern when it comes to the integration and use of AI is the varying level of awareness among stakeholders, including persons with disabilities, about key issues such as privacy, data protection and ethical considerations surrounding AI and its use. This gap in understanding can undermine informed decision-making and trust in the AI tools and solutions.


Recommendation: A comprehensive understanding of AI tools should be ensured among social service providers, informal carers and persons with disabilities prior to their integration or introduction. This includes a thorough consideration of how these tools will impact and be used by persons with disabilities. It also involves not assuming familiarity with the tools and their consequences, but actively providing training and awareness-building to support informed and effective adoption. 

The second significant issue is the pressure to adopt AI simply because of its popularity or current tendencies, rather than assessing whether it is genuinely beneficial or necessary in a given context. This "fear of missing out" can lead to the implementation of AI in areas where traditional methods may still be more effective or appropriate.

Recommendation: It is crucial to prioritise awareness-raising, informed consent, and a needs-based evaluation of AI's relevance in specific contexts, prior its introduction or integration. 

Challenges to mainstream AI tools

One of key challenges identified by interviewees when it comes to introducing and mainstreaming AI tools is low digital literacy and the lack of understanding and training related to AI tools in social care settings, which might hinder effective use of AI tools in social care and lead to reluctance to use them. The social care sector is characterised by an aging workforce, with relatively low appeal among young individuals to enter the profession. This demographic trend has implications for digital skills within the sector. Research indicates that digital proficiency tends to decrease with age. In the EU, higher digital proficiency was noted among younger age groups.³⁸ Similar results were found in a survey conducted between 2018 and 2019 targeting specifically social care workers in Northern Ireland. The survey revealed that digital skills tend to decline as the age of care workers increased, despite respondents demonstrating relatively high overall proficiency on average. A similar trend was observed in confidence levels, which also decreased as age increased.³⁹ Interview feedback furthermore acknowledged that many care workers may feel threatened by AI tools, largely due to their limited understanding of the limitations and benefits these tools present, which is closely tied to low digital literacy among staff. This can make the introduction of new technologies feel intimidating and lead to reluctance in adopting and using them. Combined with the absence of clear implementation guidelines and lack of training opportunities, it can make these tools seem overly complicated.

Recommendation: Low digital skills, insufficient understanding of AI's potential benefits and limitations and the lack of proper training remain a significant obstacle to the successful integration of AI into social care practices. To effectively and safely integrate AI tools into social care settings, it is crucial to provide comprehensive training and awareness-raising initiatives for both care workers and persons with disabilities and their carers. Promoting digital literacy can help bridge the skills gap. Care workers should furthermore receive targeted training focusing on the limitations, benefits, and ethical considerations of AI tools, along with practical guidance on how to use these technologies effectively. This could help alleviate concerns and increase confidence in using AI, ensuring that workers understand how these tools can complement their roles. 

Effectively integrating and using AI tools, such as interacting with systems like ChatGPT for tasks like report drafting or creating weekly/monthly plans, requires specific skills. It is therefore crucial to invest in digital skills development and targeted training among the social care workers. Several free resources are available to support the development of digital literacy. Looking specifically at the social care sector, the UK-based organisation *Skills for Care* offers a [Digital Skills Framework](#) as a free resource for enhancing digital skills development. This resource is aimed at both social care providers as well as their staff. Providers can use the framework to plan and structure training, while the staff can leverage it

³⁸ European Commission (2024), Skills for the digital age, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Skills_for_the_digital_age

³⁹ Synnott, J., et al. (2020), The Digital Skills, Experiences and Attitudes of the Northern Ireland Social Care Workforce Toward Technology for Learning and Development: Survey Study, JMIR Medical Education, <https://mededu.jmir.org/2020/2/e15936/PDF>

for personal development. Additionally, *Skills for Care* maintains an online database of different digital skills training courses and programmes, which is accessible through [their website](#). For those seeking specific guidance, resources like the free online course offered by *Agents of Change*, titled '[ChatGPT and AI for Social Workers](#)' can support social workers in enhancing their understanding of AI and integrating AI into their practices.

Research on the Care City test bed initiative, which piloted the introduction of several technological innovations in care several care providers in East London, found that advancing skills development within the social care workforce was an effective way to enhance the sector's appeal. Digital technologies, in particular, hold great promise for achieving this, offering significant benefits. Workforce development, supported by targeted training, has the potential to improve service outcomes, boost staff morale, and eventually enhance the quality of care. Insights from the Care City test bed initiative provide a practical example of how digital transformation in social care can succeed. The pilot programme invested significant time and resources to train staff in using monitoring technologies, with sessions combining theoretical knowledge and hands-on practice. Staff were recognised for their efforts through titles such as "expert carers" or "care champions," as well as certificates of achievement, fostering a sense of pride and accomplishment. Participants reported feeling empowered, perceiving an improvement in the quality of their care, and gaining transferable skills that could further their careers. Many staff experienced increased confidence and a strengthened desire for career progression. However, not all staff found such experiences appealing, with some content to maintain their existing roles without additional training. Support from management was critical, including developing key messaging for introducing technologies to service users and accompanying frontline workers during initial visits to demonstrate buy-in from leadership.⁴⁰ These findings highlight several key takeaways to consider when introducing new digital tools in the social care sector:

- **Tailored training:** It is essential to adapt training to individual staff needs and aspirations, rather than applying a uniform approach. This will ensure that staff who wish to grow are empowered to do so, while others are not overwhelmed or disengaged.
- **Recognition:** Acknowledging staff efforts through titles or/and certificates of achievement fosters a sense of pride and accomplishment.
- **Leadership involvement:** Support from leadership is crucial in championing digital skills development among frontline staff and in ensuring a smooth integration of new tools and technologies.
- **Comprehensive training:** Effective training should combine both theoretical and practical session to help staff become familiar and confident with the new tools.

⁴⁰ Oung, C., Rolewicz, L., Crellin, N., Kumpunen, S. (2021), Developing the digital skills of the social care workforce. Evidence from the Care City test bed, <https://www.nuffieldtrust.org.uk/sites/default/files/2021-09/workforce-research-summary-final.pdf>

- **Resource allocation:** Adequate time and resources should be allocated for the setup of any pilot initiative involving new tools, ensuring sufficient time for the staff training and thoroughly preparation for implementation.

Another limitation for mainstreaming AI is limited financial resources that restrict the development as well as deployment of AI solutions. A lack of financial resources is a critical challenge in advancing AI solutions tailored to the needs of persons with disabilities. While many AI tools offer basic features for free, more advanced or customised functionalities often come with significant costs that individuals or organisations cannot afford. Interviewees noted that funding constraints hinder the development of personalised solutions. Additionally, maintaining and scaling these technologies can be prohibitively expensive, with costs increasing dramatically when serving large user bases simultaneously. Customisation, such as tailoring AI prompts to individual needs, further adds to the financial burden. Without additional funding, the potential of AI to provide transformative support remains limited.

Recommendation: To address the financial barriers in developing and/or purchasing AI solutions for persons with disabilities, it is crucial to plan for sustainable funding models in advance.  Umbrella organisations, such as EASPD, can play a key role in raising awareness, advocating for policy changes, sharing information, and facilitating access to funding opportunities. Funding opportunities vary depending on an organisation's goals, whether they aim to develop new AI solutions, implement existing ones or pursue other objectives. Programmes like Horizon Europe, the EU's flagship research and innovation programme, or Digital Europe, which focuses on bringing digital technology to businesses and citizens, have allocated substantial funds to support AI research, development and deployment.⁴¹ Furthermore, the European Artificial Intelligence & Society Fund supports initiatives aimed at ensuring that AI better serves society. For instance, in October 2024, it launched grants specifically targeting accountability and responsible AI practices.⁴²


Additionally, fostering collaboration between public and private sectors, along with partnerships between disability organisations, tech developers, and policymakers, can help ensure resources are directed toward creating and scaling accessible AI technologies. Advocacy efforts can further push for greater investment in inclusive solutions that meet the diverse needs of individuals with disabilities.

Organisational challenges undermine effective AI integration. A lack of proper planning at the organisational level often hampers the effective use of AI tools in social care settings. A common issue is insufficient support from management, particularly those with limited experience in ground-level operations. This disconnect can result in AI being implemented in ways that fail to address real needs or improve workflows. For instance, automating administrative tasks, such as documentation, may reflect an undervaluation of these activities within the system. Additionally, many organisations adopt AI solutions simply to keep up with the current trends, often neglecting to assess existing challenges and explore how AI could

⁴¹ European Commission (undated), European research development and deployment of AI, <https://digital-strategy.ec.europa.eu/en/policies/european-ai-research>

⁴² European Artificial Intelligence & Society Fund (2024), Call for Proposals: AI Accountability Grants, <https://europeanfund.org/newspublications/ai-accountability-grants/>

address them effectively. This rushed approach, driven by a fear of missing out on the AI boom, can lead to poorly aligned implementations that fail to deliver meaningful benefits.

Recommendation: To avoid the challenges mentioned above, organisations must prioritise comprehensive planning and align AI adoption with systemic restructuring to enhance, rather than simply substitute, essential tasks. While there are currently limited sector-specific tools and training programmes tailored for AI adoption in the disability social care sector, organisations can adapt the existing general frameworks. 

Useful resources: For instance, general AI strategy and adoption toolkits, such as those developed by [LeanIX](#) or [Catapult Digital](#), can provide guidance for a structured approach to AI integration. Furthermore, organisation can leverage the [AI4EU programme](#), funded by Horizon Europe, which offers educational resources, case studies from different sectors (with healthcare being the closest to social care), webinars, and other relevant resources. Similarly, the [AI for Good](#) initiative, established by the International Telecommunication Union, the United Nations and the Swiss government, provides capacity-building resources, hosts online and offline events, and organises an annual AI summit and various competitions to foster innovation. In addition, online platforms such as [The New Social Worker](#), a social work career magazine, and the [Innovative Social Work](#) blog also provide insights into AI applications in social work, though some content may not be regularly updated. Finally, organisations should actively engage with umbrella bodies and like-minded actors to develop sector-specific resources and collective action, as well as participate in thematic webinars and discussions like those organised by the [European AI Alliance](#). These combined efforts can help align AI adoption with the unique needs of the disability social care sector while ensuring effective integration.

2.3.1 Ethical and practical considerations

AI has the potential to transform disability social care by enhancing independence and improving service delivery. However, its responsible and effective implementation require careful consideration of various ethical and practical challenges. This section provides a brief overview of key ethical issues that organisations and service users should be aware of when deploying and implementing AI-powered tools. For further details on these ethical challenges and barriers, please refer to Annex IV.

Privacy, data security and independence

When implementing AI-based solutions, considerations should be made regarding safety, privacy, and data security. In disability social care, these issues are amplified due to the sensitivity of health-related data that might be collected. A key barrier highlighted by the interviewees is the lack of understanding about how collected data is handled, which affects not only individuals with disabilities but also caregivers, whose activities may be monitored. While AI can enhance autonomy for individuals with disabilities, it often requires personal data collection, potentially compromising privacy and creating conflicts between user needs and those they interact with. Nilsson and Hansson warn that AI monitoring systems might unintentionally restrict personal freedom, such as flagging habits like late-night walks or talking

to oneself as irregular, potentially leading to unnecessary interventions.⁴³ This highlights the need to balance safety with privacy and autonomy. Additionally, vulnerabilities such as hacking, and the complexity of international data privacy laws further emphasise the importance of carefully considering data provided to AI systems.

Recommendation: While privacy and data security issues may be beyond the control of users, increasing awareness of these risks will empower them to make informed decisions about when and how to use such technologies, balancing their desire for independence with privacy concerns. A key recommendation is to focus on enhancing digital literacy skills, for both service users and staff, so they can better understand the risks and trade-offs involved in using AI-powered technologies.



Based on the interview feedback, digital skills training and development programmes are often simplified and generalised to accommodate all participants. However, the delivery mode varies depending on the level of independence. For instance, staff typically complete training independently, while service users learn in groups guided by a staff member. To better tailor the training to individual needs, some interviewees suggested assessing digital proficiency, such as through introducing questionnaires, for both staff and service users, as digital proficiency levels can vary significantly. The NHSX Review on Adult Social Care Technology and Digital Skills corroborates this observation, highlighting a wide disparity in digital skills and confidence among the workforce, unpaid carers, and service users. The Review notes that gaps in digital skills within the social care workforces are primarily linked to basic digital skills. It recommends addressing these gaps through training and peer support to establish a baseline of transferrable skills and build confidence in using and understand digital technology. Peer support initiatives, such as one-to-one buddying or digital champion schemes, have proven particularly effective for learning and development. In contrast, the absence of such support can leave individuals feeling overwhelmed by digital technology.⁴⁴ These findings underscore the need for and importance of tailored support in developing digital skills.

Ensuring a baseline level of digital proficiency among staff and service users is an essential prerequisite for implementing new technologies, including AI-based tools and systems. Beyond increasing digital, organisations must also foster confident leadership to drive digital transformation. The Review suggests creating roles dedicated to digital innovation and embedding such initiatives within organisational structures.⁴⁵ When implementing specific AI tools, interviewees emphasised the importance of ensuring that both staff and service users

⁴³ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks, https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

⁴⁴ Blake, M., Richardson, F., Buddery D. et al (2021), NHSX Adult Social Care Technology and Digital Skills Review, https://www.ipsos.com/sites/default/files/ct/publication/documents/2021-12/NHSX_Technology_and_Digital_Skills_Review_Main_Report_November_2021.pdf

⁴⁵ Blake, M., Richardson, F., Buddery D. et al (2021), NHSX Adult Social Care Technology and Digital Skills Review, https://www.ipsos.com/sites/default/files/ct/publication/documents/2021-12/NHSX_Technology_and_Digital_Skills_Review_Main_Report_November_2021.pdf

understand the tool, its purpose, and its potential advantages and limitations. Clear, non-technical language should be used to explain these aspects effectively. Following this, practical training sessions and a pilot implementation with at least one individual are recommended. Piloting not only allows to test the tool but also demonstrates the tool's practical benefits and provides concrete examples to build confidence and trust in its use.

Bias and fairness in AI systems

When implementing AI tools and systems, organisations must be aware and take into consideration potential biases within AI systems. Machine learning algorithms used in AI can perpetuate discrimination from unrepresentative data or lack of diversity in development teams. These biases may result in skewed assessments based on race, ethnicity, gender, or other protected characteristics.⁴⁶ Interview feedback indicates that such biases can both overgeneralise and unnecessarily restrict options. For example, AI tools may suggest a broad range of activities when disability is not specified but offer limited recommendations when it is, overlooking accessible adaptations like inclusive theatre productions.

Recommendation: Biases within AI systems represent an important ethical concern. This underscores the need to mitigate biases in AI system by acknowledging the existence of technical limitations and unwanted biases in AI-tools and understanding their potential impact. Interview feedback also suggests that organisations and users using tools like ChatGPT can mitigate biases by using carefully designed prompts. Training staff to craft and use specific prompts can help minimise biases and enhance the tool's effectiveness.




Role of AI vs human care

Another consideration when it comes to AI is the risk of AI-driven tools' ability to distort care quality and diminish the human factor, which was highlighted as a fear that many frontline workers feel towards AI. Nilsson and Hansson, in a Eurocarers report, warn that AI could shift responsibilities from professional to informal carers, rationalising reductions in formal support.⁴⁷ Interviewees echoed these concerns, noting care workers' fears of being replaced by AI, raising job security issues. A 2023 study on carebots notes that care workers' attitudes towards AI-powered robots largely depend on their functionality. Attitudes tend to be positive when the robots are used as assistive technologies but turn negative when they perform physical functions within care services, such as nursing or physiotherapy. The report also notes that despite the promises of increased efficiency and cost reduction, introduction of care

⁴⁶ Lara-Montero, A. (2024), The Transformation Potential of AI on Social Services, <https://www.esn-eu.org/news/transformation-potential-ai-social-services#:~:text=AI%20algorithms%20can%20analyse%20data,individuals%20at%20risk%20of%20homelessnes>


⁴⁷ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks, https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

robots often leads to increase staffing needs in organisations.⁴⁸ Interview feedback further acknowledges that some AI, such as robotics, might be often inefficient in the disability social care settings, increasing workloads and fostering negative perceptions among care workers.

Recommendation: A clear distinction between AI tools that support independence and complement the work of care workers and those aimed at replacing human care labour is crucial to understanding the potential and limitations of AI in social care. It is therefore important to clearly communicate the role and limitations of AI in care work. AI should be framed as a tool that complements, rather than replaces, the work of care professionals. This can be achieved by providing specific examples that demonstrate how AI can enhance care workers' tasks and support them in their daily responsibilities, rather than taking over their roles. 

Balancing benefits and over-reliance

Another potential risk to bear in mind when deploying AI is that AI and assistive technologies risk fostering over-reliance of users on these tools. For instance, Cleland et al. (2024) found that home automation could limit individuals' independence, with participants reporting difficulty performing basic tasks, like using light switches or opening doors, outside tech-enabled environments. Travel and holidays became more challenging, often leading to feelings of burdening family members for extra support. Drawing from the report, one participant with a progressive condition noted how reliance on home automation masked the true extent of their disability.⁴⁹ This highlights the potential undesirable effects assistive technology might have on end-users.

Recommendation: It is crucial to recognise the potential of AI tools to unintentionally influence behaviours and the need to strike a balance between enhancing care and independence while preserving dignity, personal freedoms and autonomy. To mitigate the risk of over-reliance on AI technologies, it is crucial to promote a balanced approach that encourages users, both social carers and persons with disabilities, to maintain and develop their skills and independence also outside of the technology-enabled environment. This can be achieved through regular assessments of users' needs and abilities, alongside training and support systems that help individuals adapt in various settings. Additionally, fostering awareness about the potential downsides of over-dependence on technology can help users make informed decisions and reduce the risk of becoming overly reliant. 

2.4 Policy role

A wide range of ethical concerns as well as accessibility issues pose challenges to the use of AI in the disability social care. Addressing them requires robust policies to establish clear regulations, encourage inclusive design and uphold the rights and dignity of individuals,

⁴⁸ Florek, K. (2023), 'Carebots' and the care crisis, commissioned by EPSU, https://www.epsu.org/sites/default/files/article/files/Carebots%20and%20the%20Care%20Crisis_EN.pdf

⁴⁹ Cleland et al. (2024), The experience of using home automation by individuals with disability, <https://www.tandfonline.com/doi/full/10.1080/17483107.2023.2288391>

particularly those with disabilities. While the use of AI is not entirely unregulated, existing guidance and regulations are still relatively recent and often lag behind technological advancements. Additionally, limited empirical evidence on AI's rights implications and the effectiveness of existing safeguards hampers progress.⁵⁰

A lack of robust regulation remains a barrier to advancing accessibility in AI. Without enforceable legal requirements, companies often deprioritise accessibility and inclusivity. Interviewees highlighted gaps in AI accessibility-related regulations, noting insufficient or non-existent mandates and legal systems, allowing companies to bypass these considerations and failing to hold developers accountable. As a result, progress in ensuring that AI technologies meet the needs of persons with disabilities often stalls unless mandated by law, thus leaving a crucial area of social equity unaddressed.

Regulatory efforts such as the European Web Accessibility Directive⁵¹ and the complementing European Accessibility Act⁵² promote digital accessibility for persons with disabilities but face criticism for limited scope, exemptions and weak enforcement. Furthermore, the interview feedback notes that the EU Accessibility Act is still in its early stages, with enforcement set to begin in 2025, and its coverage of AI technologies is very limited.

The EU AI Act⁵³, adopted in July 2024, classifies AI application into four risk-based categories: unacceptable risk, high, limited and low risk applications. Each category is subject to tailored regulatory measures. While it represents a significant step forward, concerns persist regarding its framework. Drawing on feedback from the interviews, the key issue seems to be the categorisation of AI applications. Furthermore, the Act's risk assessment framework has been criticised for its inability to account for the wide range of ways a particular technology could be used. For instance, biometric identification technologies are not among the list of prohibited uses under the Act, yet they can significantly impact persons with disabilities and their privacy as they can reveal sensitive health data about the individuals.⁵⁴⁵⁵ Experts argued that AI risks should be assessed by its specific use rather than technology type. For example, tools like ChatGPT become high-risk when used in hiring decisions due to bias potential. Similarly, emotional manipulation or exploiting vulnerabilities should be classified as unacceptable risk. For instance, while an AI like Amazon Alexa might provide valuable assistance in controlling a home (medium risk), if it uses personal data to manipulate purchases, e.g. making people buy more expensive products, it crosses into high-risk behaviour, especially if it exploits a

⁵⁰ Inclusion Scotland (undated), Disabled people's rights in an Artificial Intelligence world - An Overview, <https://inclusionScotland.org/wp-content/uploads/2023/11/Overview-Disabled-Peoples-Rights-in-an-Artificial-Intelligence-World.pdf>

⁵¹ Directive (EU) 2016/2102 on the Accessibility of the websites and mobile applications of public sector bodies, <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016L2102&from=EN>

⁵² Directive (EU) 2019/882 on the accessibility requirements for products and services, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L0882>

⁵³ Regulation 2024/1689 laying down harmonised rules on artificial intelligence, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32024R1689>

disability. The European AI Office ⁵⁶, recently established to oversee the Act's implementation, must engage with disability representatives, by for instance establishing an expert group focused on the disability sector, to integrate accessibility into its functions, ensuring that AI solutions meet the diverse needs of all individuals.

The enforcement of the EU AI Act begins in 2025, introducing a phased implementation schedule for its different provisions. It will therefore have implications on organisations and social service providers deploying or/and developing AI-based tools. While each risk category has its own requirements, most of them will apply for those AI tools classified as high-risk, e.g. there is a specific requirement to conduct a fundamental rights assessment by deployers and operators of AI tools classified as high-risk.⁵⁷ While requirements for deployers are relatively limited, organisations developing their own AI-based tools, e.g. trained on their clients' data, will face stricter obligations aligned with developer-specific rules in the Act. Like other sectors with unique demands, such as health care, disability social care has distinct needs and requirements. Given the specific implications of AI for persons with disabilities, there might be a need for specialised guidance or a sector-specific code of conduct. This mirrors trends in other fields, like healthcare, where the demand for tailored frameworks is emerging to address sector-specific needs and AI usage.⁵⁸

Social service providers deploying or/and developing AI-based solutions should therefore proactively prepare to avoid non-compliance and ensure smooth deployment/development of AI tools. The preparation might include:

- familiarising with the EU AI Act and its requirements;
- conducting risk-assessments of the AI tools they wish to develop or deploy to determine the risk category;
- setting up the necessary compliance measures and processes such as risk management, data management, documentation and oversight, and
- preparing their staff through training on ethical, legal and technical requirements and implications of AI usage.

Such preparation might be particularly difficult for small organisations with limited human and financial resources, technical knowledge and budgets.

To learn more about the EU AI Act, social service providers can leverage resources such as [TeachPrivacy's EU AI Act Training](#) and [OECD AI course on understanding the impact of the EU AI Act](#). Tools like the [EU AI Act Compliance Resource Kit](#) by OneTrust might be help organisations understand and navigate the requirements of the EU AI Act. For resources related to the European Accessibility Act, organisations can benefit from toolkits designed to

⁵⁶ European Commission (undated), European AI Office, <https://digital-strategy.ec.europa.eu/en/policies/ai-office>

⁵⁷ Waem, H., Dazier, J., Demircan, M. (2024), Fundamental Rights Assessments under the EU AI Act: Who, what and how?, in Technology Legal Edge, <https://www.technologysleage.com/2024/03/fundamental-rights-impact-assessments-under-the-eu-ai-act-who-what-and-how/>

⁵⁸ van Kolfschooten, H. and van Oirschot, J. (2024), The EU Artificial Intelligence Act (2024): Implications for healthcare, in Health Reform Monitor, Health Policy 149 (2024) 105152, https://www.sciencedirect.com/science/article/pii/S0168851024001623?ref=cra_js_challenge&fr=RR-1

support transposition, such as the one developed by the [European Union of the Deaf](#). Finally, compliance guides such as the one from [AudioEye](#) and [AccessibilityChecker.org](#) provide actionable steps to meet regulatory standards.

3 Future of AI in social care

AI is a rapidly evolving field, with advancements occurring at a swift pace and constantly reshaping the landscape of various industries. An article by IBM, for example, expects to see a number of promising advancements in the next ten years, including multimodal input (text, image, voice, facial expressions, etc.) as status quo; hallucination insurance; fortification of regulations and AI ethics⁵⁹.

AI hallucinations refer to instances where an AI model generates responses or outputs that are inaccurate, fabricated, or nonsensical, even though they appear coherent or plausible.

A recent study by Gartner⁶⁰ predicts that by 2027, over a half of generative AI models will be domain-specific, tailored to the needs of a specific industry or organisation – a sharp increase from only 1% in 2023.

3.1 Addressing challenges and barriers

Given the complexity and interconnectedness of the challenges highlighted in 2.2, interventions to address them should be carried out holistically, at three principal levels — organisational, developmental, and regulatory. While section 2.2 includes more general recommendations, this section provides more specific suggestions tailored to organisations, and policymakers.

3.1.1 What can organisations do?

Integrating AI into organisational workflows in a safe and responsible manner poses similar challenges for organisations across various industries. As highlighted in reports by Microsoft⁶¹ and IBM⁶², some of the common pain points include insufficient digital skills within the

⁵⁹ Mucci, T. (2024, October 11). The future of artificial intelligence: Trends shaping the next 10 years. *IBM*. <https://www.ibm.com/think/insights/artificial-intelligence-future>

⁶⁰ Chandrasekaran, A. (2024, April 12). 3 bold and actionable predictions for the future of GenAI. *Gartner*. <https://www.gartner.com/en/articles/3-bold-and-actionable-predictions-for-the-future-of-genai>

⁶¹ Santos, R. (2024). *Five key principles for implementing an AI strategy across your organization*. Microsoft. <https://www.microsoft.com/en-us/worklab/5-key-principles-for-implementing-an-ai-strategy-across-your-organization>

⁶² Finio, M. (2023, December 20). *How to build a successful AI strategy*. IBM. <https://www.ibm.com/think/insights/artificial-intelligence-strategy>

workforce, disregard of role-specific challenges when introducing AI tools, and lack of overall AI planning at an organisational level. Core attributes of social work add an additional layer of complexity when introducing AI in disability care organisations. Unethical use of AI (often unintentional), for instance, can lead to disproportionately negative consequences when applied to persons with disabilities^{63 64}. Below follows a list of actionable insights on what organisations can do to plan for and implement introduction of AI.

1. **Evaluate and implement AI solutions that enhance person-centred approaches, improving the quality of services and outcomes for people with disabilities.** A rushed adoption of AI due to the fear of missing out – an issue already covered in section 2.2. - can lead to wasted resources, increased workload, and resentment among the workers, as evidenced by the interview feedback and desk research⁶⁵. One of the key benefits of AI, as covered in section 2.1, lies in its ability to deliver a high level of personalisation. Yet, many organisations are attempting to implement one-size-fits-all solutions across their entire workforce, overlooking the fact that AI can be customised to address the specific challenges faced by different teams, which, among other downsides, can increase the workload rather than reduce it. One approach to successful integration of AI into organisational workflows is to begin by identifying the challenges staff members encounter in their routine work. Earlier, we mentioned guides compiled by [LeanIX](#) and [Catapult Digital](#) that aim to help organisations evaluate their needs and plan AI integration. Another helpful framework, as suggested by Kerzel (2021) ⁶⁶ -- is provided in the table below.

Enterprise AI Canvas – Part 1: Organisation View		
Decision & optimisation	Value	Success
How are decisions made? By whom?	How does the use-case generate value? What can be offered? Which problem can be solved?	How is success (metrics, KPI) defined? What makes the use-case “good” or “bad”? Who decides this?
Organisation		Domains

⁶³ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks. Available at: https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

⁶⁴ Smith, E. M., Graham, D., Morgan, C., & MacLachlan, M. (2023). Artificial intelligence and assistive technology: risks, rewards, challenges, and opportunities. *Assistive Technology*, 35(5), 375-377, <https://www.tandfonline.com/doi/full/10.1080/10400435.2023.2259247>

⁶⁵ Verdin, D. (2023, October 19). AI can transform customer service—But rushed implementation could be costly. *Forbes Technology Council*. <https://www.forbes.com/sites/forbestechcouncil/2023/10/19/ai-can-transform-customer-service-but-rushed-implementation-could-be-costly/>

How are decisions and actions currently formed? How will this change with the use-case?		Which domain expertise is needed? Which units are involved?
Sponsor: Which senior manager is responsible?		

Enterprise AI Canvas – Part 2: Model and Data View		
Domains and Data Quality Which domain expertise is needed? How and who can decide whether the data are “good” or “bad”? How to measure data quality?	Prediction and Action What should be predicted? How are predictions transformed into actions?	Features Which features are likely important?
Data Sources and Processing Which data sources are required, which are already available? Which types of data are needed? Which systems are required and already available to handle the data?		Constraints What is the typical time-frame for a prediction? Which granularity is required? How often does the model need to be re-trained? How are the models served? Edge, on-premise, Cloud?
Evaluations and Monitoring: Which metrics are used? How will the project be monitored? What happens in case of incidents?		

Adapted from “Enterprise AI Canvas -- Integrating Artificial Intelligence into Business”, Kerzel (2021).

To ensure that the solution effectively supports personnel in their roles, it is essential to conduct thorough testing, gather feedback, and tailor the tools to the specific needs of the team. The effectiveness of the tool should then be carefully evaluated before it is

scaled for broader implementation. Another online toolkit, AI Guide for Government, provides a structured and detailed approach to safe integration of AI tools into Governmental services. Only after a thorough mapping of these challenges and engagement with potential beneficiaries should any implementation proceed. Without proper organizational planning, the rush to adopt AI, driven by fear of missing out, risks diverting resources into poorly chosen applications. Instead of serving users effectively, organizations may misuse AI in areas where it offers little value, leading to inefficiencies, unmet goals, and potentially eroding trust in their services. One of the interview respondents made a clever parallel with scissors, to illustrate this point: "*I have scissors here and they're there, and I can take them if I need them, but I wouldn't come to the office in the morning and say, oh, I have to find something to do with my scissors.*"

2. **Allow people experience the benefits of AI systems first-hand, instead of having them imposed from the management.** As explored in section 2.2, social care workers tend to be wary of exploring new tools, particularly when it comes to technology. One practical tip emphasised by several respondents was to gain the support of the service providers to let them learn about the tool from their colleagues. One effective approach to achieve this is by piloting the tool with at least one person, enabling the rest of the team to observe its practical use, and understand its benefits - his helps reduce the perception that the tool is being imposed by management, potentially leading to less resistance amongst the staff.
3. **Provide regular training on AI concepts, ethical considerations, risks, and opportunities – and spice it up with personal examples.** Low digital skills is a common issue in social care sector, described in more detail in section 2.2. At the same time, according to interview respondents, this is one of the most straightforward challenges: trainings, webinars, and mentorship were all identified as effective means for raising awareness, deepening understanding, and demystifying new technology. One teaching technique that proved to be successful is to personalise learning. For example, an instructor can encourage support workers to consider a specific client, imagine themselves as the victims of algorithmic bias, or relate AI-related concepts to familiar, everyday situations to enhance understanding. Some useful resources are listed in Annex III.
4. **Think of AI as a tool to assist professionals, not to replace their expertise.** A common fear expressed by social care workers is the concern of being replaced by AI, which likely contributes to the scepticism surrounding its adoption. To address these concerns, it is crucial to maintain human oversight as a central element of decision-making when utilising AI systems, especially in cases where decisions significantly impact people's lives. Incorporating a "human-in-the-loop" approach, where professionals are actively involved in making decisions and final edits, aligns with recommendations from frameworks like the GDPR, the EU AI Act, and best practices

advocated by developers of responsible AI. This ensures accountability, reduces errors, and fosters trust in AI systems.

5. **Foster collaborations with external experts, industry partners, developers, and policy makers.** The responsible and effective implementation of AI in services is a complex undertaking, often reliant on interconnected relationships and knowledge-sharing across sectors. Engaging with industry partners to share experiences, actively participating in the design and development of AI tools, and advocating for ethical standards, regulatory frameworks, and resource allocation are essential steps to ensure that AI solutions are both effective and aligned with the needs of persons with disabilities and their caregivers.

3.1.2 What can policymakers do?

As AI technologies continue to evolve, legislation often struggles to keep pace with their rapid development, particularly in areas impacting persons with disabilities. Promoting collaboration across different levels of governance and re-evaluating existing strategies are crucial to ensuring equitable and inclusive access to new technologies.

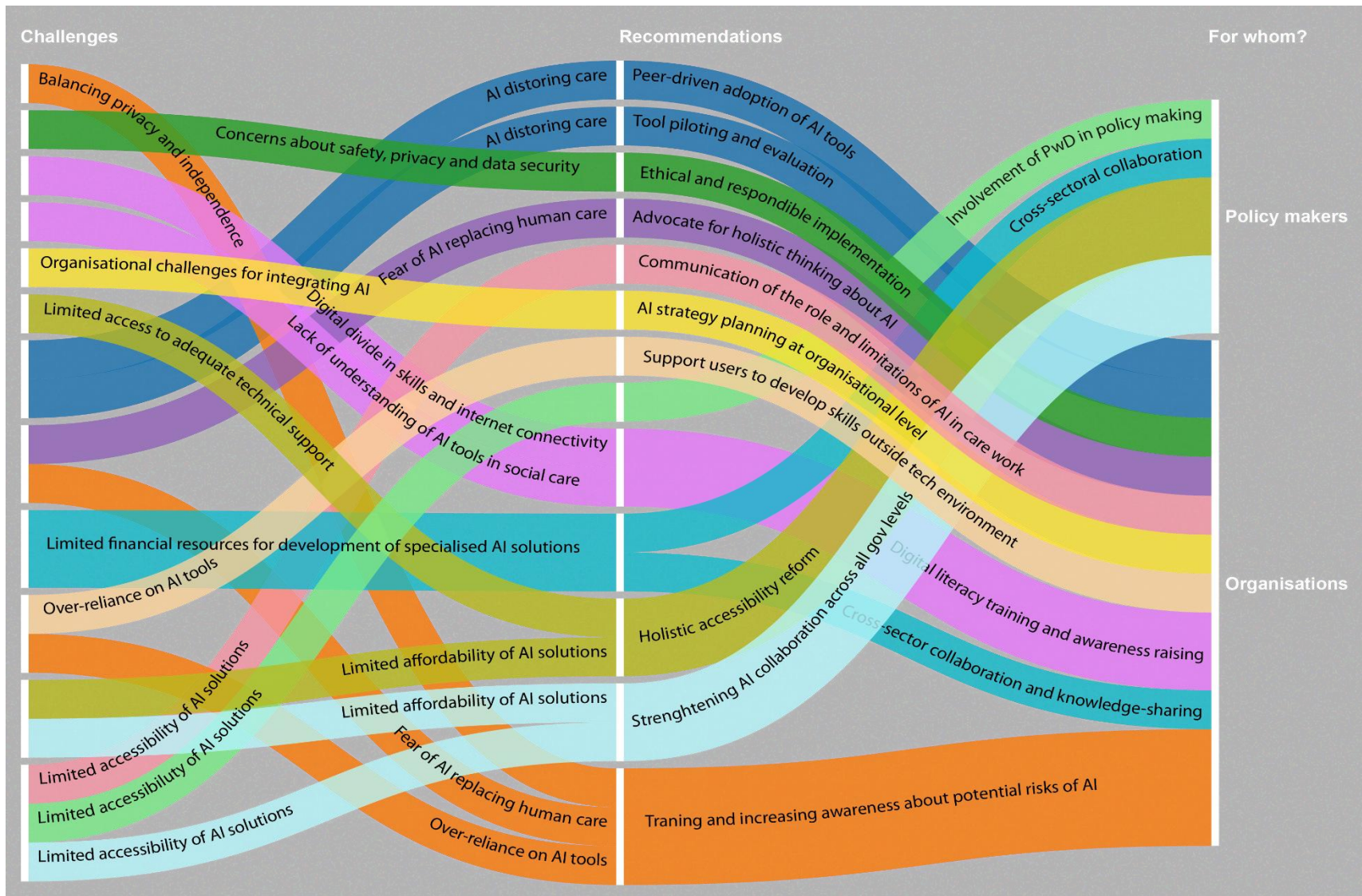
1. **Involve persons with disabilities in policy formulation.** Policymakers should engage persons with disabilities more often in the policy formulation process, and in identifying challenges related to AI, particularly related to ethical implementation. Tools classified as “low-risk” for the general population may pose more risk for persons with disabilities, hence, including their perspectives would contribute to more accurate and safe regulations.
2. **Assess how AI can help drive change, quality, and efficiency in social care services using an inclusive and evidence-based approach.** First, policymakers should comprehend the current landscape of AI and assess what type of technology can be applied within social care systems (i.e., automation of administrative tasks, personalised care, predictive analytics, etc.). Second, to ensure practical, safe, and user-centred AI solutions, it is crucial to engage stakeholders – service users and their families, care professionals, technology providers, trade unions, researchers – at every stage of the assessment process.
3. **Encourage cooperation between local, national, and international authorities.** To ensure equitable access to technology, it is essential for local, national, and international authorities to collaborate more efficiently. Intergovernmental organisations (IGO’s), including EU’s own bodies, play a pivotal role in promoting the responsible use of AI and in allocating resources to initiatives at the national level, which can help reduce digital divides across regions ⁶⁶.

⁶⁶ Taylor & Francis (2023), Editorial. Artificial intelligence and assistive technology: risks, rewards, challenges, and opportunities, Vol. 35, No.5, 375-377
<https://www.tandfonline.com/doi/epdf/10.1080/10400435.2023.2259247?needAccess=true>

4. **Create opportunities for social care providers to identify and use AI to drive such change.** Financial constraints often hinder the development and adoption of AI solutions in social care services – policymakers can address these issues by creating funding opportunities for social care sector. Moreover, fostering collaborative initiatives between social care service providers and technical experts can bridge the respective knowledge gaps, empower social care workers, and encourage them to drive AI change within the sector (e.g., Collaboration Charter on AI between England’s National health Services and the Incubator for Artificial Intelligence ⁶⁷).

The figure below illustrates the key actions each stakeholder group can take to promote a more effective and inclusive AI landscape within the social care sector.

⁶⁷ Office, Cabinet. “i.AI and NHS England Sign Collaboration Charter to Support the Use of AI in the NHS.” *GOV.UK*, 25 Apr. 2024, www.gov.uk/government/news/iai-and-nhs-england-sign-collaboration-charter-to-support-the-use-of-ai-in-the-nhs.



3.2 Potential of AI in the future

Predictions regarding the use of AI in social care sector appear to be optimistic, as evidenced both by existing literature ⁶⁸ and the interview feedback. Currently, many startups and research institutes are piloting AI-powered systems, particularly in the fields of advanced assistive technology and robotics. There are considerable hopes that rapidly progressing technology will let persons with disabilities live independent and self-sufficient lives, moving away from institutionalised care. One of the study participants stated that AI has the potential to change social services more in the next five years, than in the previous fifty - “*what was impossible yesterday can be possible tomorrow.*”

Service providers expect to see more tools optimising their workflow and reducing administrative tasks. When asked about the future of AI, many interviewees expressed a desire for AI tools that could streamline routine aspects of their work. Interestingly, the technologies they mentioned — such as knowledge management systems, data analysis tools, patient monitoring platforms, and virtual assistants — already exist within the social care sector and are even utilised by some organisations. However, it was suggested that these tools often fall short of meeting the practical needs of frontline workers. For instance, integrating multimodal input systems - technologies that allow interaction through various modes such as text, speech, gestures, and touch – or wearable devices with voice recognition possibilities - could make these tools more accessible and intuitive.

Technology	Potential merits	Demerits
Advanced assistive technology	<ul style="list-style-type: none">→ Hyper-personalisation of assistive devices→ Improved autonomy and quality of life→ Rehabilitation potential	<ul style="list-style-type: none">→ High cost→ Complex maintenance→ Insufficient technological advancement→ Ethical and legal ambiguities→ Lack of accessible infrastructure

Social robots can provide companionship and alleviate loneliness. Human-robot companionship, while a controversial topic, has many intriguing developments. For instance, Paro - a baby seal robot – is designed to provide emotional support to the user. It has tested in elderly care facilities for persons with and without dementia and associated with some

⁶⁸ Kumar, V., Barik, S., Aggarwal, S., Kumar, D., & Raj, V. (2024). The use of artificial intelligence for persons with disability: a bright and promising future ahead. *Disability and Rehabilitation: Assistive Technology*, 19(6), 2415-2417, <https://www.tandfonline.com/doi/abs/10.1080/17483107.2023.2288241>

positive nursing outcomes⁶⁹. Other social robots, like Pepper⁷⁰ or Zora⁷¹, also have great potential in providing companionship, care, and cognitive assistance for the elderly and persons with disabilities. However, the practical application is still limited.

Advancement of assistive technology and smart appliances have the potential to revolutionise the users' quality of life. Several interviewees mentioned the transformative potential of smart assistive technology. Innovations such as rehabilitative exoskeletons⁷², wheelchairs⁷³, smart glasses⁷⁴, and communication aids⁷⁵, among others, hold the promise of significantly enhancing the livelihoods of persons with disabilities. However, most of these tools, despite their potential and successful pilots, remain in the prototype phase due to numerous limitations⁷⁶. In addition to frequently discussed barriers like financial burden, safety concerns, and ethical considerations, some interviewees emphasised another critical issue: the lack of adequate infrastructure. As reliance on smart assistive technology increases, public infrastructure must evolve to support it. This underscores the urgent need for a comprehensive, holistic reform in accessibility, as outlined in section 3.1.3.

⁶⁹ Wang, X., Shen, J., & Chen, Q. (2022). How PARO can help older people in elderly care facilities: A systematic review of RCT. *International journal of nursing knowledge*, 33(1), 29-39, <https://onlinelibrary.wiley.com/doi/abs/10.1111/2047-3095.12327>

⁷⁰ Blindheim, K., Solberg, M., Hameed, I. A., & Alnes, R. E. (2023). Promoting activity in long-term care facilities with the social robot Pepper: a pilot study. *Informatics for Health and Social Care*, 48(2), 181-195, <https://www.tandfonline.com/doi/abs/10.1080/17538157.2022.2086465>

⁷¹ Melkas, H., Hennala, L., Pekkarinen, S., & Kyrki, V. (2020). Impacts of robot implementation on care personnel and clients in elderly-care institutions. *International Journal of Medical Informatics*, 134, 104041, <https://www.sciencedirect.com/science/article/pii/S1386505619300498>

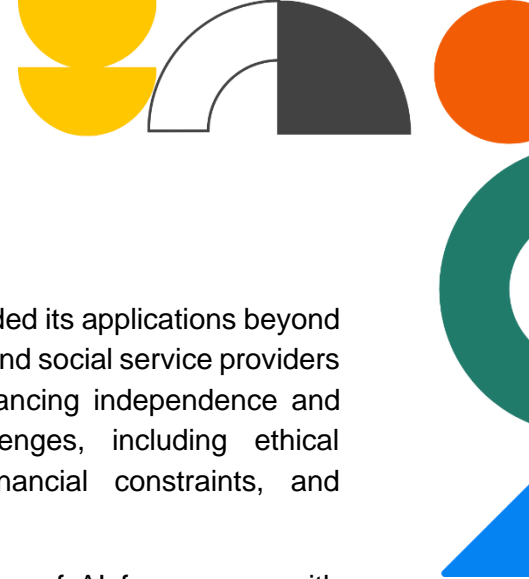
⁷² Halder, S., & Kumar, A. (2023). An overview of artificial intelligence-based soft upper limb exoskeleton for rehabilitation: a descriptive review. *arXiv preprint arXiv:2301.04336*, <https://arxiv.org/abs/2301.04336>

⁷³ Kim, Y., Velamala, B., Choi, Y., Kim, Y., Kim, H., Kulkarni, N., & Lee, E. J. (2023). A literature review on the smart wheelchair systems. *arXiv preprint arXiv:2312.01285*, <https://arxiv.org/abs/2312.01285>

⁷⁴ Busaeed, S., Mehmood, R., Katib, I., & Corchado, J. M. (2022). LidSonic for visually impaired: green machine learning-based assistive smart glasses with smart app and Arduino. *Electronics*, 11(7), 1076, <https://www.mdpi.com/2079-9292/11/7/1076>

⁷⁵ Adiani, D., Colopietro, K., Wade, J., Migovich, M., Vogus, T. J., & Sarkar, N. (2023). Dialogue act classification via transfer learning for automated labeling of interviewee responses in virtual reality job interview training platforms for autistic individuals. *Signals*, 4(2), 359-380, <https://www.mdpi.com/2624-6120/4/2/19>

⁷⁶ Smith, E. M., Graham, D., Morgan, C., & MacLachlan, M. (2023). Artificial intelligence and assistive technology: risks, rewards, challenges, and opportunities. *Assistive Technology*, 35(5), 375-377, <https://www.tandfonline.com/doi/full/10.1080/10400435.2023.2259247>



4 Conclusions

The rapid advancement of AI technology in recent years has extended its applications beyond niche uses, offering significant benefits to persons with disabilities and social service providers alike. AI holds immense promise in the social care sector, enhancing independence and efficiency. However, its adoption also brings critical challenges, including ethical considerations, data security risks, accessibility barriers, financial constraints, and organisational hurdles.

Policy plays a pivotal role in ensuring the effective and safe use of AI for persons with disabilities and social carers. While progress has been made, significant gaps remain in regulatory frameworks, particularly in ensuring accessibility and safeguarding the interests of persons with disabilities. Strengthening these frameworks is essential to maximise AI's potential while mitigating risks.

Addressing these challenges requires a holistic approach across three key levels: organisational, developmental, and regulatory. Each group of stakeholders must take targeted actions to overcome existing barriers and support the ethical and inclusive integration of AI.

There is considerable optimism that rapid technological advancements will empower persons with disabilities to live more independent and self-sufficient lives, reducing reliance on institutional care and fostering greater autonomy.

Current study contributed to the overall understanding of the landscape of AI in social care sector, highlighting common needs, challenges, and hopes for the future. Additionally, it provided some specific examples of AI tools and their applications, offering readers practical resources to explore and helping them avoid falling into common pitfalls.

Future research, however, should prioritise more studies focusing on specific target groups in order to generate deeper insights and develop more effective guides and toolkits. For instance, research could explore the use of AI in education for children with intellectual disabilities, the usage of smart home appliances among people with disabilities living in community-based settings, or the role of AI in supporting informal caregivers.

Annexes



Annex I - List of literature reviewed

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Annex II - List of stakeholder consultations

Name	Position	Institution	Stakeholder group	Date
Maitreya Shah	Affiliate Tech policy fellow	Berkman Klein Center for Internet and Society, Harvard university CITRIS Policy Lab at U.C. Berkeley	Academia	17/10/2024
Doug Golub	Board member President and co-founder	ANCOR, US MediSked, US	Professional/umbrella organisation	23/09/2024
Sam Paior	Director and founder	The Growing Space, Australia	Social service provider	23/09/2024
Adriana Sikora	Digital transformation advisor	Nexem, France	Professional/umbrella organisation	22/10/2024
Kave Noori	Artificial intelligence policy officer	European Disability Forum	Professional/umbrella organisation	3/10/2024
Haydn Hammersley	Social policy coordinator	European Disability Forum	Professional/umbrella organisation	3/10/2024
Neil Miliken	Global Head of Accessibility & Digital Inclusion	ATOS	Private sector – technological company	27/09/2024
Maria Nilsson	Researcher, facilitator and senior lecturer	Swedish Family Care Competence Centre, Linnaeus University, Sweden	Academia	23/10/2024
Seb Barker	Co-founder and COO	Magic Notes	Private sector – technological company	11/10/2024
Cathal Morgan	Assistive Tech expert	World Health Organisation	International organisation	24/10/2024
Francisco Bariffi	Professor and academic	Universidad Carlos 3 de Madrid	Academia	22/11/2024

Name	Position	Institution	Stakeholder group	Date
Bianca Caruana	Manager	Agenzija Sapport, Malta	Social service provider	11/11/2024
Dr. May Agius	Senior Speech and Language Therapist	Agenzija Sapport, Malta	Social service provider	22/10/2024
Stelios Stylianou	Senior project manager	Emphasys Centre, Cyprus	Research and Education centre	30/10/2024
Nicholas Moudouros	Head of training and software development	Emphasys Centre - Cyprus	Research and Education centre	30/10/2024
Yeal Weinstein	R&D Director	Shekulo Tov, Israel	Social service provider	10/10/2024
Héctor Diez Caso	Director of digital transformation	ATAM, Spain	Social service provider	22/10/2024
Martin Reichstein	Senior researcher	University of Seigen, Germany	Academia	15/10/2024
Louise Gougeon	European project manager	Centre de la Gabrielle, France	Social service provider	9/10/2024
Louise Keevil	Trustee and Acting CEO	Where I want to live, UK	Civil society organisation	28/10/2024
Mathieu Thébaud	Lab Engineer	Lab du CMRRF de Kerpape, France	Social service provider	30/10/2024

Annex III – List of useful resources

This annex provides an overview of resources mentioned in the study, organised by thematic area. Its purpose is to offer social service providers a comprehensive guide to increasing their capacities and skills in AI and digital technology, whether they aim to deploy or even develop their own AI-based tools. While not exhaustive, this overview highlights several initiatives and examples we believe may serve as a useful starting point for consultation or further exploration.

- **Educational resources**
 - [Adult Social Care Digital Skills Framework](#) by Skills for Care
 - [Digital skills training database](#) by Digitising Social Care
 - [ChatGPT and AI for Social Workers](#) by Agents of Change
 - [Guide and Best Practices on AI Strategy](#) by LeanIX
 - [Road to Successful AI Adoption](#) by Catapult Digital
 - [AI4EU Programme](#)
 - [AI for Good](#) by Telecommunication Union, UN, and Swiss government
 - [The New Social Worker Magazine](#)
 - [Innovative Social Work](#)
 - [The European AI Alliance](#)
 - [European Union AI Act Training Course](#) by Teach Privacy
 - [Understanding the Impact of EU AI Act: A course on Compliance Essentials for 2024](#) by OECD
 - [AI guide for government](#) by IT modernization Centers of Excellence
 - [EU AI Act Compliance Resource Kit](#) by OneTrust
 - [European Accessibility Act toolkit for transposition](#) by the European Union of the Deaf
 - [European Accessibility Act compliance guide](#) by AudioEye
 - [Web Accessibility in Europe compliance guide](#) by Accessibility Checker

Selected AI tools (listed in order of mention)

Tool	Description	Pricing	Website
DeepL	Machine translation, real-time voice translation, and writing assistant	Basic functions: Free Advanced functions; starting from 7/month	https://www.deepl.com/
Google Translate	Machine translation tool, covering over 100 languages	Free	https://translate.google.com/
ChatGPT	AI chatbot with voice chat, image generation, and data analysis capabilities	Basic functions: Free Advanced functions: starting from /month	https://chatgpt.com/


Google Home	A line of smart home devices that allow users to interact with Google's virtual assistant to perform a variety of tasks using voice commands.	Price varies depending on the device	https://home.google.com/
Amazon Echo	Smart speakers that can connect to Amazon's voice-controlled virtual assistant service Alexa.	Price varies depending on the device	https://www.amazon.com/smart-home-devices/
Otter.ai	AI meeting notes generator, compatible with Zoom, Google Meet, Microsoft Teams, and other platforms	300 minutes of transcription per month (up to 30 min per conversation) are free; Advanced functions: starting from /month	https://otter.ai/
Magic Notes	Service notes transcription and report generation	Inquiry via email	https://magicnotes.ai/
Notta AI	AI transcription, translation, meeting recording, meeting scheduling	120 minutes of transcription per month are free; Advanced functions: starting from /month	https://www.notta.ai/
CoLearn'HIT	AI model that translates French text into FALC (Facile à Lire et à Comprendre – a simplified version of French language)	Free	https://colearnhit.coworkhit.com/
LifeCompanion	Digital assistant for communication and digital access for people with motor difficulties	Software if free to use on most operating systems, for details direct inquiry is required	https://lifecompanionaac.org/
Seeing AI	An AI-powered app for visually impaired people that narrates visual information from a camera	Free	https://www.seeingai.com/

Be My Eyes	App for visually impaired people. Leverages an AI image describer, available in 36 languages, Has integration with RayBan smart glasses.	Free	https://www.bemyeyes.com/
Speechify	AI voice generation, voice dubbing, and voice cloning	Basic functions: Free Advanced functions; starting from /month	https://speechify.com/
Murf AI	AI voice generation, text-to-speech, AI dubbing, AI translation	Trial: Free Subscription: from /month	https://murf.ai/
ElliQ	Robotic voice-operated care companion	One-time enrolment fee: 250 Subscription: 50/month	https://elliq.com/
Pepper	Humanoid companion robot	Production currently on pause	https://www.softbank.jp/en/robot/
WHILL	Smart electric wheelchair	Price varies depending on the device	https://whill.inc/us
Paro	Therapeutic robot designed to stimulate patients with Dementia and Alzheimer's	Approximately 2,600	http://www.parorobots.com/
Zora	Humanoid assistance robots	Price varies depending on the device, approximately €5,000 per robot	https://www.zorarobotics.be/

Annex IV – Challenges and barriers related to implementing AI

Ethical challenges

Implementation of AI raises concerns regarding ethics, particularly in relation to safety, privacy and data security. These concerns are not limited to social care but span across sectors. In the context of disability social care, the sensitivity of data is even more increased since data about persons with disabilities are closely tied to their health situation, which further amplifies the concerns. Interviewees highlighted a lack of understanding about how data is handled after it is collected as a primary concern and barrier to implement AI-based solutions. This issue does not only concern persons with disabilities but also caregivers, formal or informal. The latter might be tracked during the care activities, which raises privacy concerns for both groups. The challenge of constant monitoring or surveillance highlight the need to carefully consider the impact of AI technologies and balance safety with privacy and autonomy for everyone involved.⁷⁷ Shah (2024) further points out that while privacy violations are a key concern in AI systems, they remain an area that has received limited attention in research.⁷⁸ Additionally, all technologies have vulnerabilities, and uncertainty about whether data collected, e.g. in case management systems, is adequately protected persists. The risk of hacking and data breaches is particularly concerning when dealing with sensitive health records, which underscores the need for careful consideration of the data provided to AI systems. Another related problem is the complexity of international data privacy laws and the lack of a common understanding of ethical AI use, with different countries holding varying attitudes toward data privacy.

This problem can be illustrated by a hard-of-hearing doctor using AI-powered glasses that display subtitles for spoken words. While these glasses use Google's text-to-speech system, the data is sent to the U.S., raising privacy issues and creating a conflict of applicable regulation. For instance, Swedish patients are protected by the General Data Protection Regulation (GDPR), but internal U.S. law states that GDPR does not apply to companies like Google operating in the U.S. 


- *example provided by one of the interviewees*

Inherent biases within AI systems represent another significant ethical issue. The reliance of AI systems on machine learning and large datasets can introduce algorithmic biases. The latter can arise from unrepresentative data and a lack of diversity in AI development teams, leading to biased assessments based on race, ethnicity, gender, sexual

⁷⁷ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks, https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

⁷⁸ Shah, M. (2024), Fact Sheet on Artificial Intelligence (AI) and Independent Living, European Network on Independent Living, https://enil.eu/wp-content/uploads/2024/04/Fact-Sheet-on-AI-and-Independent-Living_FIN.docx


orientation, gender expression, and other vulnerable or protected characteristics.⁷⁹ As such, AI algorithms can perpetuate or even amplify biases in the data they are trained on, leading to discriminatory outcomes.

An instance of bias occurred in an AI system designed to recommend activities for individuals with disabilities. The system, despite being informed of the person's use of a wheelchair, initially suggested venues that were inaccessible, underscoring the limitations of AI when it fails to account for nuanced individual needs. 


- *example provided by one of the interviewees*

Interview feedback suggests that the bias in AI tools can act as a double-edged sword. When disability is not explicitly mentioned, the tools may suggest a wide range of activities, such as acting or theatre. However, once disability is identified, the recommendations become more limited, even though the same activities could still be accessible. For instance, a theatre could be adapted for individuals with physical disabilities, or specific theatre productions may be suitable for individuals with mental disabilities. This highlights how the inherent biases in the AI tools can both overgeneralise and unnecessarily restrict possibilities.

A critical issue surrounding the integration of AI in disability social care is the challenge of balancing privacy and independence. While AI systems can offer greater autonomy, particularly for individuals with disabilities, they often require the collection and processing of personal data, which can compromise privacy. The use of such technology raises important ethical concerns, particularly around how data is collected, used, and shared.

For wheelchair users, for instance, AI-powered systems to control lights or home appliances provide significant independence but require data that might compromise privacy. 

The use of AI can also create a conflict of interests between the needs of individuals with disabilities and those people they interact with.

AI tool used by someone who cannot speak, records what others are saying to generate a response, which may raise privacy concerns. Similarly, a visually impaired person using an image recognition app to navigate their surroundings may inadvertently have their surroundings, including people, recorded, raising issues related to surveillance and privacy. 

Nilsson and Hansson further caution against the unintended consequences of AI monitoring systems, which could restrict personal freedom. For example, they describe how an AI system might flag habits like late-night walks or talking to oneself as unusual or irregular, potentially prompting unnecessary interventions. This raises an important concern about the risk of


⁷⁹ Lara-Montero, A. (2024), The Transformation Potential of AI on Social Services, <https://www.esn-eu.org/news/transformation-potential-ai-social-services#:~:text=AI%20algorithms%20can%20analyse%20data,individuals%20at%20risk%20of%20homelessnes> [SS](https://www.esn-eu.org/news/transformation-potential-ai-social-services#:~:text=AI%20algorithms%20can%20analyse%20data,individuals%20at%20risk%20of%20homelessnes).

unintentionally curbing an individual's independence under the pretence of ensuring protection.⁸⁰

This presents a dilemma: to benefit from the technology, users must share their data, and sometimes sacrifice the privacy of others, but refusing to provide this data means they cannot access the functionality. The trade-off between privacy and increased independence for persons with disabilities remains a challenging ethical issue.

Recommendation: While bias, privacy and data security issues may be beyond the control of users, increasing awareness of these risks will empower them to make informed decisions about when and how to use such technologies, balancing their desire for independence with privacy concerns. A key recommendation is to focus on enhancing digital literacy skills, for both individuals with disabilities and carers, so they can better understand the risks and trade-offs involved in using AI-powered technologies. 

AI-driven tools may distort care for persons with disabilities and diminish the human factor. AI tools used for screening, determining care needs or even direct care might lead to reducing the amount and quality of professional care individuals receive or diminishing the control caregivers have over the care they provide. Nilsson and Hanson in their report for Eurocarers caution about AI carrying the risk of shifting responsibilities from professional caregivers to informal carers, potentially rationalising reductions in formal support.⁸¹


A specific example of this challenge is the use of so-called carebots (care robots). A 2023 European Public Service Union (EPSU)-commissioned report emphasises that, despite years of experimentation, particularly in Japan, efforts to replace trained care workers with robots have been largely unsuccessful. The report points out that introducing robotics in care settings can undermine the quality of care, potentially worsening outcomes rather than improving them. On the other hand, robotics shows greater promise in assistive technologies, particularly in enhancing mobility and adapting the home environment to better support care recipients⁸². 

Interviewees acknowledged similar concerns regarding the introduction of AI tools, such as robots, in care settings. It was noted that many care workers fear being replaced by AI, which raises concerns about job security. Despite the promises of efficiency and cost reduction, AI tools and particularly those aimed at replacing certain aspects of care, such as care robots, are often inefficient, sometimes increasing the workload rather than alleviating it. This inefficiency, along with the fear of job displacement, has contributed to a negative perception of AI among some care workers.


⁸⁰ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks. Available at: https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

⁸¹ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks, https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

⁸² Florek, K. (2023), 'Carebots' and the care crisis, commissioned by EPSU, https://www.epsu.org/sites/default/files/article/files/Carebots%20and%20the%20Care%20Crisis_EN.pdf

Recommendation: A clear distinction between AI tools that support independence and complement the work of care workers and those aimed at replacing human care labour is crucial to understanding the potential and limitations of AI in social care. It is therefore important to clearly communicate the role and limitations of AI in care work. AI should be framed as a tool that complements, rather than replaces, the work of care professionals. This can be achieved by providing specific examples that demonstrate how AI can enhance care workers' tasks and support them in their daily responsibilities, rather than taking over their roles. 

Additionally, the use of AI, and particularly in assistive technologies, might create a potential risk of over-reliance on AI tools once implemented, which could reduce their overall effectiveness. Cleland et al. (2024) explored the impact of home automation on individuals with disabilities, revealing a significant issue of over-reliance on assistive technologies. Participants in their study reported feeling uncomfortable or unable to leave their homes due to the dependence on these systems. For instance, traveling or going on holiday became challenging, as participants struggled with basic tasks like using light switches or opening doors in unfamiliar environments. Some participants also expressed feelings of being a burden to family members when extra support was needed during trips. One participant with a progressive condition highlighted how their reliance on home automation led to a stark realisation of how much more disabled they felt when they were removed from their familiar, tech-enabled environment. This reliance had an undesirable effect as the technology masked the true extent of their disability.⁸³ Assistive technologies, particularly those focused on text production, were also noted by the interviewed stakeholders as capable of unintentionally limiting user expression by influencing their speech patterns or communication choices.

Recommendation: It is crucial to recognise the potential of AI tools to unintentionally influence behaviours and the need to strike a balance between enhancing care and independence while preserving dignity, personal freedoms and autonomy. To mitigate the risk of over-reliance on AI technologies, it is crucial to promote a balanced approach that encourages users, both social carers and persons with disabilities, to maintain and develop their skills and independence also outside of the technology-enabled environment. This can be achieved through regular assessments of users' needs and abilities, alongside training and support systems that help individuals adapt in various settings. Additionally, fostering awareness about the potential downsides of over-dependence on technology can help users make informed decisions and reduce the risk of becoming overly reliant. 

Accessibility barriers

Lack of accessibility and the multifaceted nature of disability are closely intertwined concerns when it comes to the implementation of AI tools for persons with disabilities. Disability is not a homogenous experience, and technology in general often lags in terms of accessibility and struggles to accommodate the diverse needs of individuals with different

⁸³ Cleland et al. (2024), The experience of using home automation by individuals with disability, <https://www.tandfonline.com/doi/full/10.1080/17483107.2023.2288391>

types or combinations of disabilities. This gap is even more pronounced when it comes to technology integrating AI. General AI tools are often designed with the general population in mind, which makes them unsuitable or difficult to use for individuals with specific or multiple disabilities.

An example of this might be AI tool, such as speech to text systems, that fail to recognise speech from children or persons with speech impairments, or they may not be able to process requests in a format that is accessible for persons with cognitive disabilities.



The tendency of AI to find common patterns can also be problematic when the user's disability falls outside these patterns, making the solution ineffective.

Additionally, companies developing AI solutions often lack the willingness, networks or resources to meaningfully include input from persons with disabilities into the development or piloting of their tools and devices. As a result, this can lead to reduced accessibility for individuals outside the general population. Interview feedback also noted that a key barrier to AI accessibility lies in the tendency to approach accessibility as a checklist, often focusing solely on compliance with the Web Content Accessibility Guidelines (WCAG) standards. As one interviewee put it: *“Many companies simply reference these standards and check off whether they are meeting the required criteria, which limits the broader vision of accessibility.”*

Recommendation: To improve accessibility, the focus needs to shift from this narrow, box-ticking approach to embracing more universal principles. AI systems should be developed to meet the unique needs and diverse expressions of persons with disabilities, ensuring that these technologies are genuinely accessible and inclusive for all users. This means thinking holistically about how to make AI technology accessible to everyone, considering the diverse needs of all users, rather than merely meeting basic compliance standards.



Accessibility issues are also closely linked to the need for specific devices which may not be accessible to everyone due to their cost, particularly in low-income areas. As such, **increased costs of these specialised tools might present a significant challenge, as their affordability can restrict access to technology.** According to Nilsson and Hansson (2024), the potential of AI in social care can also be limited by the **digital divide in skills and internet connectivity between rural and urban areas, as well as between younger and older generations.** This divide has the potential to further deepen existing inequalities.⁸⁴

Inclusion Scotland also pointed out another problem related to **limited access to adequate technical support** from manufacturers and operators regarding usability features. While companies like Google and Apple offer accessibility support via various channels, such as phone, email, chat, and Be My Eyes, these services may not be well-known. Additionally,

⁸⁴ Nilsson, M.; Hansson, E. (2024), Integrating artificial intelligence within informal care and long-term care. Enhancing opportunities while mitigating risks. Available at: https://eurocarers.org/wp-content/uploads/2024/07/Eurocarers-AI_pp.pdf

some support teams are only reachable by phone, posing a barrier for individuals with hearing, speech, or dual sensory impairments, as well as those unable to access physical locations.⁸⁵

⁸⁵ Inclusion Scotland (undated), Disabled people's rights in an Artificial Intelligence world - An Overview, <https://inclusionScotland.org/wp-content/uploads/2023/11/Overview-Disabled-Peoples-Rights-in-an-Artificial-Intelligence-World.pdf>