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Working with Digitally Excluded Communities: Practical Pathways to Action and Impact.

A practical guide informed by research, evaluation evidence, and stakeholder insights.

Mae'r ddogfen yma ar gael yn y Gymraeg.

This document is available in Welsh.

ewmpas | University of Oxford Nuffield Department of Primary Care Health Sciences | dpia | newydd

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Purpose

Digital technologies shape how people access health information, public services, welfare systems, employment, education, and everyday life. When people cannot use or benefit from these digital spaces, they experience digital exclusion, which can worsen health inequalities.

Recent work on the Minimum Digital Living Standard (MDLS) highlights that digital inclusion requires more than access. Households need adequate devices, reliable connectivity, and the skills and confidence to communicate, connect and engage safely in everyday life.

This guide brings together evidence from research and from people working directly with excluded communities to help practitioners:

1. Identify who might be excluded and why it happens;
2. Match support to what people need;
3. Measure impact.

The guide is informed by an NIHR–funded study that explored how digital exclusion is framed, addressed, and evaluated in relation to health inequalities. The study combined a review of existing evidence with insights from 21 people working across digital inclusion and related frontline roles, including local authorities, community organisations, housing associations, academia and NHS partners. An expert Advisory Panel provided ongoing guidance to ensure the work remained grounded in lived and practice-based experience.

The guide highlights key considerations when supporting digitally excluded communities, including examples of what organisations do in practice and what the evidence says about outcomes and ways to assess impact on health and wellbeing. It presents what practitioners across different sectors told us they use, what they find feasible, and the approaches described in published evidence.

The guide sits alongside an infographic and four digital inclusion practitioner personas. The infographic provides a quick overview, the personas offer real-world representations, and this guide gives you the additional detail you may need.

Who may be digitally excluded?

Digital exclusion affects people differently depending on their lives and circumstances. Some groups face more barriers because of ageing-cognitive and physical decline, disability, limited English, poverty, unstable housing, migration experiences or rural connectivity. Our evidence suggests that exclusion frequently affects:

- Older adults;
- Disabled people (including visual impairment);
- People with learning disabilities, cognitive impairments or neurodivergent conditions;
- People experiencing poverty, unstable housing or homelessness;
- Refugees and asylum seekers;
- Migrants and people with limited English;
- Welsh speakers;
- Gypsy, Roma and Traveller communities;
- People living in rural areas with poor connectivity;
- People who have been scammed or fear online risks;
- People who feel digital technology is "not for me".

Emerging or less recognised groups (highlighted by stakeholders):

- Children and young people lacking basic digital skills;
- Young families experiencing data poverty;
- Working adults with little exposure to digital tools "the hidden middle".

Intersectionality: People often belong to more than one group; multiple disadvantages interact and reinforce each other, shaping digital exclusion in complex ways.

Why digital exclusion happens

These five perspectives help explain why digital exclusion happens in the first place. They reflect the wider forces that shape people's experiences and show why 'one-size-fits-all' solutions rarely work.

Structural inequalities: digital exclusion follows wider inequalities such as poverty, discrimination, insecure housing or limited access to education and infrastructure and can reinforce them over time. For example, people unable to afford devices, data or Wi-Fi; Families sharing one device; People in temporary or unstable housing who cannot safely store, keep or charge devices.

Unfair services and treatment: digital exclusion often results from how services, policies and technologies are designed, including digital by default pathways and norms that determine who is noticed and supported. For example, mandatory online forms with no offline route (e.g. Blue badge); Services assuming everyone with a mobile number has a smartphone.

Changes in life circumstances: digital exclusion can increase during major life events, like illness, bereavement or job loss, when people have less time or emotional capacity to manage digital tasks. For example, retirement reduces exposure to digital tools and informal support; Bereavement reduced social support and emotional capacity for digital tasks; Illness or hospitalisation disrupt routines and access.

Trust in digital use: confidence, fear, trauma, cognitive load and past digital experiences shape how willing or able people feel to use technology. For example, fear of scams after a bad experience; Anxiety triggered by unfamiliar digital steps; "Not for me" beliefs among older adults and culturally marginalised populations.

Misfit between tech and people's context: digital exclusion occurs when digital services do not fit people's needs, circumstances, skills or capacities. For example, digital services that require multiple logins and steps; Automated messages contradicting staff advice, creating confusion, and mistrust.

Types of exclusion and what shapes them

These categories help identify the specific barrier affecting a person or a group. People often experience more than one type at the same time.

Capability: can people use it?

These are barriers related to practical ability or experience.

Arise when people face challenges using digital tools, due to ageing, disability, low confidence or limited exposure to technology:

- Cognitive or physical changes linked to ageing (memory, dexterity, processing speed);
- Unfamiliarity with digital tasks;
- Lack of informal support from family and peers.

These affect whether people can learn, practise, and feel confident using digital tools.

Motivation: do they want to use it?

These are barriers shaped by feeling, trust and experience.

Arise when people lack confidence, trust or reasons to engage:

- Anxiety, fear of scams or "not for me" beliefs;
- Limited English, unfamiliarity with UK systems.

These influence whether people feel safe and motivated enough to engage.

Context: do their circumstances allow it?

These are barriers linked to people's wider situation.

Arise when a person's circumstances or environment limit access to digital tools:

- Affordability, lack of device, data or unstable housing;
- Poor broadband or mobile coverage;
- Situational disruptions (homelessness, incarceration, displacement);
- Digital-by-default services with no offline alternatives.

These can prevent digital use, even when skills or motivation are present.

These barriers often overlap and change over time. Practitioners usually focus on what feels most pressing, rather than trying to address everything at once.

Where support happens

Understanding the type of exclusion gives a starting point for identifying what is getting in the way. The next step is understanding where support typically takes place. These domains emerged from our evidence review and stakeholder interviews, and reflect the main areas where organisations provide practical, emotional and contextual support.

- Access (to technology and connectivity):

Providing devices, data, broadband, MiFi units, SIM/data banks through partnerships (e.g. device loan schemes and local device refurbishment programmes), alongside hands-on support.

- Digital skills:

Drop-ins, classes, Digital Champions, and help using accessibility tools (e.g. text-to-speech, screen readers, magnification, high-contrast settings, captions and voice control).

- Engagement (motivation and trust):

Building confidence, addressing fear of scams, using "hooks" (e.g. hobbies, staying in touch with family and friends), and working through trusted intermediaries such as community groups or voluntary organisations.

- Meaningful digital use:

Helping people complete tasks that matter to them (e.g. booking appointments, prescriptions, managing money, keeping in touch, learning new skills or accessing entertainment).

- Support (social and cultural factors):

Tailoring support to language, culture, trauma, disability or cognitive needs; often through trusted intermediaries and by using accessible formats (e.g. bilingual materials, Easy Read, large print, translated resources and assistive technologies).

What stakeholders said works well in practice

This section brings together the practical approaches that stakeholders told us work well in real-world digital inclusion settings. These practices cut across all five domains and reflect what practitioners have found most effective for engaging people, building confidence, and supporting meaningful and sustained digital use.

- Providing devices and connectivity with hands-on support: providing basic set-up support and helping people with the practicalities of device use.
- Building relationships over time: reduces anxiety; supports learning.
- Creating safe spaces: encourages questions and persistence.
- Using one-to-one support for people who struggle in groups: lowers cognitive load.
- Using "hooks" that genuinely matter to people: links digital tasks with real-life goals.

- Working through trusted intermediaries: builds trust and cultural safety.
- Using light-touch follow-ups keeps people from "dropping off", reinforces learning and confidence.
- Co-designing support with communities: ensures support reflects local needs, builds trust and improves relevance.

Stakeholders stressed that digital inclusion is most effective when organisations work alongside people and communities, using co-design and person-centred approaches to ensure support reflects local needs, priorities and lived experience.

While stakeholders often describe their work as "access and skills", in practice they also support confidence, trust, emotional recovery after scams, and social connection.

How digital inclusion activities lead to outcomes and how they are measured

The below table summarises what stakeholders told us they do in practice across the five domains of digital inclusion, the outcomes they commonly observe, and the ways they assess impact. It brings together insights from stakeholder interviews with validated tools identified in the evidence review. It reflects approaches that practitioners find feasible in their own context and can be applied consistently over time.

Access to technology and connectivity:

- Interventions
  Provide devices, data, Wi-Fi access, MiFi units.
- Changes you might see (i.e. outcomes)
  More consistent access; reduced dependency on others; increased independence.
- Measures used to assess impact (i.e. real-world practice)
  Admin records (devices/data issued); follow-up questions about access.
- Measures used to assess impact (i.e. academic literature)
  Admin records are widely used; validated tools not required for this domain.

Digital skills:

- Interventions
  Hands-on 1:1 help; drop-ins; Digital Champions; accessibility tools.

- Changes you might see (i.e. outcomes)
  Increased confidence; improved skills; greater ability to complete tasks independently.

- Measures used to assess impact (i.e. real-world practice)
  Confidence scales; simple skills checklists; facilitator observation.

- Measures used to assess impact (i.e. academic literature)
  Essential Digital Skills (EDS) Framework; MDPQ-16 (digital literacy).

Engagement (motivation and trust):

- Interventions
  Relationship-building; reassurance; addressing fear of scams; using personal "hooks".

- Changes you might see (i.e. outcomes)
  Reduced anxiety; increased trust; willingness to try digital tasks.

- Measures used to assess impact (i.e. real-world practice)
  Short wellbeing or confidence questions; participant quotes; case studies.

- Measures used to assess impact (i.e. academic literature)
  Personal well-being ONS4 measures; UCLA / De Jong / Lubben scales.

Meaningful digital use

- Interventions
  Support with tasks that matter (health, benefits, finances, social connection).

- Changes you might see (i.e. outcomes)
  Completion of essential tasks; reduced stress; improved service access.

- Measures used to assess impact (i.e. real-world practice)
  Task completion logs; admin data (e.g. NHS App use); short follow-up calls.

- Measures used to assess impact (i.e. academic literature)
  Digital Skills to Tangible Outcomes (DiSTO); eHEALS (digital health literacy).

Support (social and cultural factors):

- Interventions
  Bilingual support; trauma-informed approaches; trusted intermediaries; co-designed and community-led approaches.

- Changes you might see (i.e. outcomes)
  Greater uptake among underserved groups; improved understanding, confidence and inclusion.

- Measures used to assess impact (i.e. real-world practice)
  Qualitative feedback; practitioner observations; uptake data.

- Measures used to assess impact (i.e. academic literature)
  Personal well-being ONS4 measures; UCLA / De Jong / Lubben scales; Qualitative evidence to capture cultural fit.

To explore these measures and access the tools directly, see the Evaluation and Practical Resources for Digital Inclusion Appendix.

What practitioners find challenging when measuring impact and what helps

Stakeholders identified several challenges when evaluating digital inclusion work and describe how they respond in practice. The table below summarises these challenges, why they matter, and practical solutions they use, supported by evidence from evaluation literature in the field.

Column 1: Key challenges measuring effectiveness / understanding what works.	Column 2: Why it is a problem.	Column 3. Solutions.
Different tools or questions used across projects.	Data is not comparable, limiting system-level insight and weakening the case for funding.	Use a small set of consistent core questions (e.g. Good Things Foundation measures) and supplement these with

		validated instruments where appropriate.
Evaluation limited to one domain.	Gives an incomplete picture; misses relational, contextual, and meaningful-use outcomes.	Use an evaluation approach that covers multiple domains of digital inclusion and combines quantitative and qualitative evidence.
Validated tools are too long / formal for participants.	Many participants have low literacy or are in crisis; long tools create burden and anxiety.	Use short, accessible measures (e.g. confidence scales, pictorial scales, verbal questions, short wellbeing or loneliness measures).
Mistrust of formal surveys.	People decline to participate or give incomplete data, especially those with trauma or distrust of institutions.	Use trusted intermediaries, verbal questions / pictorial scales, case studies; minimise personal data collection.
Emotional and relational outcomes are powerful but hard to quantify.	These are often the biggest changes but hard to capture using quantitative data; wellbeing is not a clearly defined concept.	Use qualitative approaches alongside quantitative measures. Some stakeholders use the Good Things Foundation questions, including: “I feel more able to keep in touch with family and friends”.
Hard to evidence economic value.	Outcomes are cumulative and hard to attribute; short-term, small-scale projects and inconsistent measures make formal economic analysis burden-some.	Use task completion as a proxy for efficiency (e.g. online booking, prescription requests); use administrative data, case studies and participant stories to demonstrate social value. Focus on showing how digital inclusion support

		contributes to wider outcomes.
Difficult to attribute outcomes to the intervention.	Demonstrating causality would require a formal research study with a comparison group, this is only feasible when working with academic partners.	Use phased or staggered delivery where possible and focus on demonstrating how the intervention contributed to change, rather than trying to prove it caused the change.
Limited capacity for follow-up.	Short-term funding and overstretched staff make follow-up difficult, reducing ability to show sustained change.	Use light-touch follow-up check-ins (e.g. a brief phone call, text message or conversation during a later contact) to understand whether changes are sustained.
Organisations often focus on uptake rather than meaningful outcomes.	Sign-ups (e.g. NHS App registrations) do not reflect people's ability to use services or reduced anxiety; this misrepresents success.	Measure task completion (e.g. appointments, prescriptions, forms), not just registrations.

Most practitioners use locally designed, accessible tools because they work best for their communities. Aligning them with standardised or validated measures, strengthens comparability, helping organisations track change over time, compare results across groups, and build stronger, more generalisable evidence.

To explore these measures and access the tools directly, see the Evaluation and Practical Resources for Digital Inclusion appendix.

See Appendix for example of validated measures and question sets, including resources from Good Things Foundation.

Key message

Digital inclusion is a bridge to health and wellbeing. It creates wider social value through improved wellbeing, confidence, independence and connection.

By understanding the barriers people face, matching support to what matters to them, and using approaches to measure impact that are feasible in context and applied consistently, organisations can build stronger evidence of impact and support efforts to reduce health inequalities.

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We welcome your views on these materials. Please contact us at PHW.Research@wales.nhs.uk

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Links to relevant Public Health Wales work

Additional resources, including the infographic and Digital Inclusion Practitioner Personas, are available here below:

- Infographic
- Digital Inclusion Practitioner Personas

Appendix: Evaluation and Practical Resources for Digital Inclusion

This appendix provides a selection of measures, frameworks and practical resources to help organisations deliver, evaluate and strengthen digital inclusion activities.

Table A1. Practical resources for digital inclusion delivery

The resources below can help practitioners plan, deliver, and strengthen digital inclusion activities in their communities.

Column 1: Resource.	Column 2: How it can help.
Digital Inclusion Wales (DIW) Programme (Welsh Government)	National advice, support, resources, mapping of provision, partnership development and practical guidance for organisations working on digital inclusion in Wales.
Digital Inclusion Wales Alliance (DIWA)	Brings together organisations across sectors to share learning, build partnerships, influence policy, and support digital inclusion activity across Wales.
Learn My Way (Good Things Foundation)	Free online learning platform covering essential digital skills, confidence, online safety and everyday digital tasks.
National Digital Inclusion Network (Good Things Foundation)	Network of community organisations providing digital inclusion support, resources, learning and peer connections.
National Databank (Good Things	Provides access to free mobile data through

Foundation)	participating community organisations.
National Device Bank (Good Things Foundation)	Supports access to refurbished devices for people experiencing digital exclusion.
How to Help Someone You Know Get Online (Welsh Government)	Practical advice for supporting individuals to get online safely and confidently.
Digital Inclusion Hub (Local Government Association)	Guidance, case studies and resources to support local digital inclusion strategies and activities.
Minimum Digital Living Standard (MDLS)	Evidence-based framework describing what households need to be digitally included in everyday life.
My Computer My Way (Ability Net)	Step-by-step guides for making computers, tablets, and phones easier to use.
Support for professionals (Royal National Institute of Blind People; RNIB)	Guidance, training, research, and accessibility resources to help professionals create inclusive services and support people with sight loss.
Accessibility Requirements for Public Sector Websites and Apps (GOV.UK)	Official guidance on making websites and apps accessible and compliant with UK accessibility requirements.

Table A2. Selected standardised and validated tools used in digital inclusion evaluation

This table provides examples of measures commonly used in digital inclusion evaluation. Select those most relevant to your outcomes, audience, and approach, alongside local measures where needed to assess outcomes and social value.

Note: This table highlights a set of widely used tool in the academic literature, rather than an exhaustive list.

Column 1: Tool.	Column 2: What it measures.	Column 3: How is it used.
Essential Digital Skills (EDS) Framework; Lloyds Essential Digital Skills Index (EDSI)	Foundation and essential skills for everyday life and work.	Pre/post assessment of digital skills and confidence.
Mobile Device Proficiency Questionnaire (MDPQ-16); Internet Skills Scale (ISS)	Mobile device proficiency; internet skills, navigation and task competence.	Assessment of mobile and internet task capability.
eHealth Literacy Scale (eHEALS); European Health Literacy Survey Questionnaire (HLS-EU-Q16)	Ability to find, understand, evaluate and use health information and digital health resources.	Measures the ability to find, understand, and apply online or general health information.
Digital Skills to Tangible Outcomes (DiSTO)	Digital skills into real-world benefits; digital health literacy.	Tracks whether new skills lead to meaningful life or service outcomes.
ONS-4 Personal Wellbeing Measures	Wellbeing (life satisfaction, worthwhileness, happiness, anxiety).	Measures changes in personal wellbeing over time and enables comparison with national benchmarks.
UCLA 3-item Loneliness Scale; Lubben Social Network Scale (LSNS-6); De Jong Gierveld Loneliness Scale; Social Isolation Scale (SIS)	Loneliness and social connection.	Detects changes in loneliness, social networks and social connectedness.
EQ-5D-3L OPQoL (Older People's Quality of Life Questionnaire)	Health-related quality of life.	Assesses health-related quality of life and broader wellbeing outcomes.

Table A3. Key evaluation frameworks and how they are used

Examples of established frameworks for planning and evaluating digital inclusion activity.
Note: Resources vary in purpose, including evaluation, monitoring, impact measurement and organisational development. Select resources according to the aims, scope and stage of your evaluation.

Column 1: Resource.	Column 2: Type.	Column 3: Focus.	Column 4: How it is used.
Digital inclusion evaluation toolkit (Welsh Government)	Evaluation framework.	Access, needs, confidence, wider outcomes.	Planning and evaluating digital inclusion projects.
UK Digital Inclusion Evaluation Toolkit	Evaluation Framework.	Skills, confidence, behaviours, social outcomes.	Measuring and evidencing impact, including reporting to funders.
Digital Inclusion Toolkit	Evaluation toolkit.	Impact and social outcomes of digital inclusion including social value.	Impact evaluation and learning for digital inclusion programmes.
NHS South West London Digital Inclusion Toolkit	Sector-specific toolkit.	Digital exclusion in health and care.	Planning and evaluating health-focused digital inclusion activity.
Local Government Association (LGA) Digital Inclusion Hub	Resource hub.	Measuring and improving digital inclusion within local authorities.	Strategy design and evaluation.
Indicators of Digital Inclusion (DI) and Analytical Framework (Good Things Foundation)	Indicator framework.	Digital inclusion status, barriers and vulnerabilities.	Digital exclusion identification and monitoring.

Measuring impact of digital inclusion (Good Things Foundation)	Impact measurement framework.	Guide to assess outcomes and theory of change.	Progress monitoring and service improvement.
Digital Toolkit (Cwmpas)	Organisational assessment tool.	Organisational digital readiness.	Service and organisational improvement.

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