Digital Mental Health Innovation Cluster

Annual Report 2023–2024

Authors
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DHI is a world-leading collaboration, hosted by the University of Strathclyde in partnership with the Glasgow School of Art (GSA). It is part of the Scottish Funding Council's Innovation Centre Programme and has been co-funded by the Scottish Government Digital Health and Care Directorate to secure alignment with health and social care policy and strategic priorities. DHI supports innovation between academia, the public and third sectors, and businesses in the area of health and care

A collaboration between

SCHOOL OF INNOVATION AND TECHNOLOGY THE GLASGOW SCHOOL OF ART

University of Strathclyde Glasgow
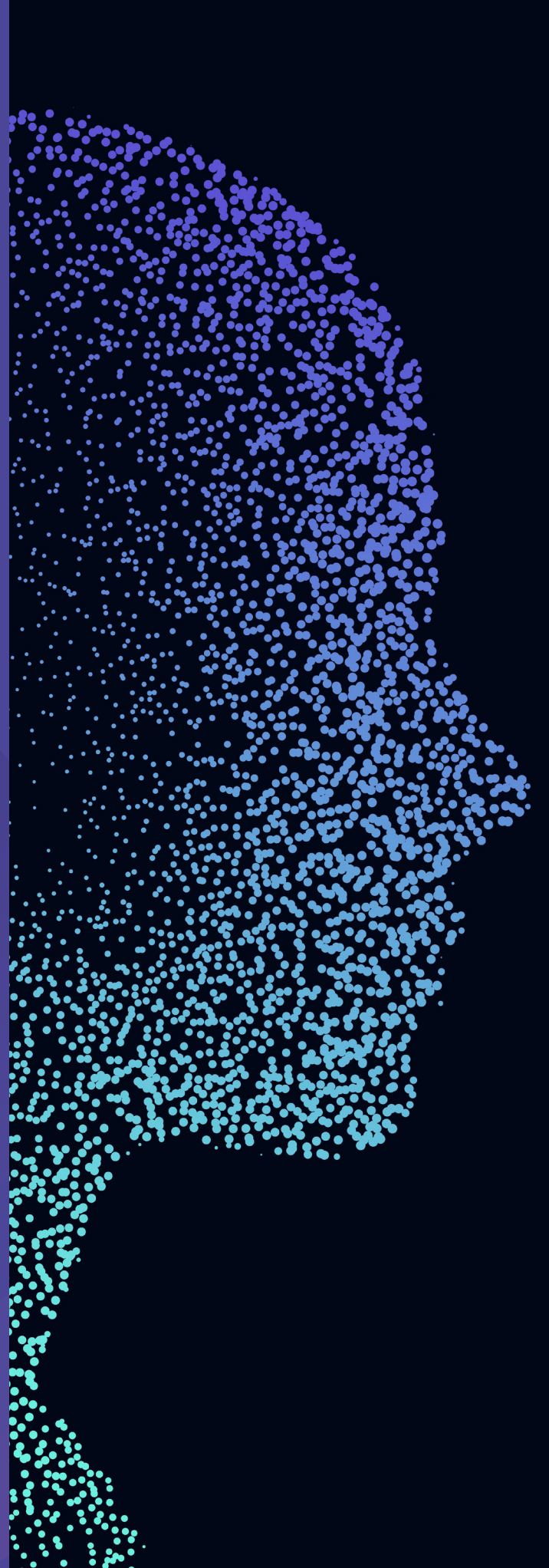
Background

This document has been prepared by the Digital Health & Care Innovation Centre (DHI) to report on the progress of Scotland's Digital Mental Health Innovation Cluster (DMHIC). It covers the period August 23 – July 24. In 2022, DHI was commissioned by the Scottish Government to establish and manage the national Digital Mental Health Innovation Cluster (DMHIC). The cluster was formally launched in March 2022 to provide a 'hub' in support of action 15.7 of Mental Health – Scotland's Transition and Recovery Plan within the context of Digital Innovation.

Action 15.7: to explore the use of an innovation hub model to encourage identification, development and evaluation of technologies focused on the needs of the population. Developing Innovation Hubs will help support individuals, organisations, academics, and commercial companies to work together to identify, design and develop innovative digital solutions while being guided by expertise within the mental health field including people with lived experience.

Aims

The DMHIC aims to:

·   Contribute to broader mental health goals as outlined in the national plan.
·   Inform future Scottish Government digital mental health policy priorities.
·   Enable the scaling and national adoption of local digital mental health innovations.

The innovation cluster sits as one of six workstreams in the broader digital mental health programme as shown in Figure 1 and connects horizontally across these areas.

Figure 1. Scottish Government Digital Mental Programme workstreams (including innovation)

Governance

The DMHIC collaborates effectively with various innovation agencies and activities, aligning its work with the Scottish Government's national priorities and is accountable to the Digital Mental Health Programme Board. The Mental health and wellbeing strategy - gov.scot was published in June 2023. There is no separate chapter on digital mental health, as digital is an underpinning theme which runs throughout the strategy, providing the policy drivers for DMHIC.

An Advisory Group meets bi-monthly to provide strategic oversight and support prioritisation of innovation cluster activities, leveraging expertise from triple helix partners. The advisory group includes impressive representation from all three geographic NHS Innovation Hubs and the mental health innovation programme lead from the Scottish Government's Chief Scientist's Office (CSO); Scottish Association for Mental Health (SAMH); Par Equity Enterprise Investors; and academic expertise from the Universities of Glasgow and Edinburgh. Further details of membership can be found on our dedicated web page Scotland's Digital Mental Health Innovation Cluster | Digital Health & Care Innovation Centre in the contacts section. Cluster management is provided by DHI, with a cluster lead in place (0.5 FTE) and a project support officer (1.0 FTE).

Innovation Cluster Purpose & Functions

Innovation clusters can represent a powerful collaboration of shared strategic interests, expertise and skills from policy, health and care, education, research, and commercial partners, centred around a common purpose. To be successful and demonstrate impact, an innovation cluster must be greater than an individual member or organisation's strengths.

Several key functions are evident within successful Innovation Clusters, and these have been used to inform the strategic roadmap for the DMHIC.

- **Connectivity:** they provide a dedicated space for interaction with the local ecosystem. These spaces can be virtual and physical and should attract a wide range of actors from within each innovation community and beyond.

- **Activity management:** they function as a centre for mobilising and progressing specific innovation activities.

- **Knowledge exchange:** they function as consistent points for knowledge exchange (within Scotland and between and across international partners)

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The Digital Mental Health Innovation Cluster brings together all the important stakeholders from across mental health including people with lived experience, clinicians, service managers, policy leads, industry, capital, and academia to network and share experiences. It is an invaluable way to build effective innovation networks and to lay the groundwork for transformational technology enabled care

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**Donald MacIntyre,
Director of the NHS Research Scotland
(NRS) Mental Health Network,
Honorary Reader Edinburgh University
& Consultant Psychiatrist**

Cluster Connectivity

Cluster Footprint
In Year 2, the DMHIC membership grew from 1,023 to 1,252 members by July 2024 (21%+ increase), with evidence of a broad sectoral spread (Figure 2).
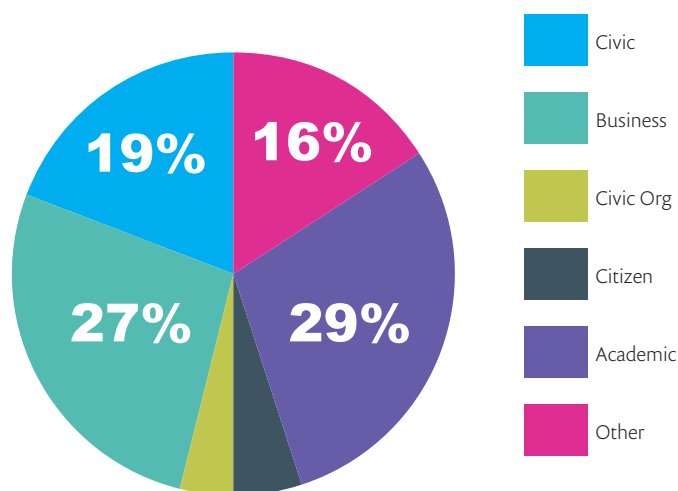

Figure 2. DMHIC Sectoral Breakdown - July 2024

Pie chart legend:
- Civic — 19%
- Business — 27%
- Civic Org
- Citizen
- Academic — 29%
- Other — 16%

Anticipated Cluster Outcomes
An outcomes-based approach was established by DMHIC in Year 1, as identified collaboratively by the cluster members (Appendix 1: DMHIC Outcome Map).

This continues to provide a developmental "road map" for cluster activity. A number of desired outcomes have been identified with a series of stepping stones set out to achieve progress against these.

Cluster Event Programme 2023-24
There are 4 cluster events held annually which bring members together to share knowledge, build relationships and support the development of collaborative activities. This section summarises the focus of this year's events, highlighting key outcomes and impacts.

Event 1: September 2023 (in person)
This had a broad agenda covering topics designed to be of interest to academic, business and civic sectors, with 45 participants attending. Standing items included updates from a national policy, regional projects and funding perspective. Following on from successful information sharing in the previous year, Innovate UK (IUK) partnered with DMHIC to host their Scottish funding announcement for the second round of the £20m Mindset Challenge. IUK valued the opportunity to connect with Scotland via a singular point of contact and to disseminate their information through the DMHIC communication channels. IUK also indicated their intention to adopt the DMHIC Linked In platform template to provide an innovator support platform for their industry partners.

- Through the DMHIC connection, IUK commissioned DHI to undertake a scoping review of the distribution and procurement of mental health and wellbeing extended reality (XR) experiences, products and solutions in the UK, to inform a particular workstream in Round 2 of the challenge. Dr Sanna Rimpilainen from DHI (Picture 1) presented these findings to this event with further details distributed via the published report

Figure 3. Dr Sanna Rimpilainen presenting to DMHIC (Sept 23)

- Lesley Taylor, Principal Psychologist with Clackmannanshire Council shared her experience from a health and social care partnership perspective of commissioning new digital mental health services. Learnings from this process have been captured on the dedicated DMHIC web page and virtual resource bank thought-piece-for-digital-innovation.docx (live.com)

- Supplier Development Programme | Helping you bid better (sdpscotland.co.uk) were invited to present to improve funding bid capabilities.

The presentations and recording of the full event can be accessed on demand.

Member Feedback
Feedback from industry cluster members for this event was incredibly positive.

> *We joined the cluster in 2023 and have found it extremely helpful in allowing us to understand the existing landscape for mental health innovation in Scotland. After attending an in-person event, we have been able to build links with other Scottish health-boards, had a number of follow up calls, and increased interest and awareness of Red Star. The online event also gave us great insights into NHS policy and procurement within Scotland, helping us understand how best to fully scale and commercialise our technology. We are more than happy to support the cluster and look forward to future events*

**Andrew Conkie, CEO,
Redstar software company**

However, feedback for this event from clinical and civic cluster members differed, indicating a preference for events to be more orientated to their own sector to maximise value from their time away from service provision.

Outcomes
Industry Partners get timely insights and access to intelligence from clinicians, policy and people using services (Appendix 1: Outcome Map Ref)

The mixed feedback was noted and the suggestion to adopt a sector orientated approach i.e. academic, business, and civic for future events was made to the DMHIC advisory group.

This request determined the design of next online event which took place in February 2024 and was specifically business orientated.

Event 2: February 2024 (Virtual)
This question-and-answer style event was held on-line and featured Chris Wright, the Scottish Government's National Advisor for Digital Mental Health and Head of the Digital Mental Health Programme. He responded to questions focused on business development and support needs.

Questions were both collated in advance and asked during the open floor session, and focused on the following topics:

· Procurement Readiness,
· National Policy/Regulations,
· Safeguarding,
· Technical Requirements,
· Presentation of Tenders,
· Marketing/Influencing,
· Support Structure – deployment for implementation, system access.
· Service financing

The session was recorded and can be accessed via the DMHIC virtual resource hub on https://vimeo.com/941949850/2526e9b597?share=copy   The summary information was also condensed into a frequently asked question (FAQ) resource – https://www.dhi-scotland.com/media/pd0lr5mu/dmhic-faq.pdf

Member Feedback

> *I find the Mental Health Digital Innovation Cluster events helpful from an education and keeping up to date perspective. The FAQ developed from the recent event with Chris Wright was extremely useful. I shared the document with several contacts who I know would find this information beneficial.*

Suzanne Graham, Programme Lead Innovation Collaboration, Chief Scientist Office, Scottish Government

Whilst this event was primarily orientated towards business members, the breakdown of registrations in Figure 4 below demonstrates interest and perceived value from all sectors.
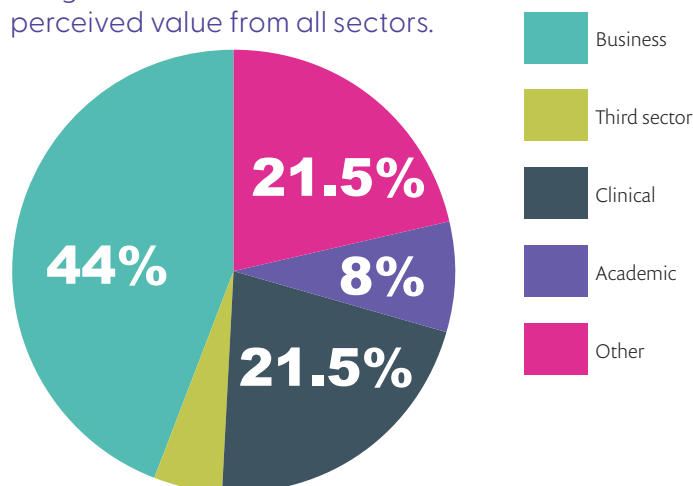

- Business
- Third sector
- Clinical
- Academic
- Other

Figure 4. . Breakdown of event registrants Feb 2024

Outcomes
Users are shaping the digital mental health market (Appendix 1: Outcome Map Ref)

Event 4 – May 2024 Event (Virtual)
Clinicians ADHD Service Pathway Mapping activity, see Activity Management Section (see to the right) for details.

Event 3 – June 2024 (In person) Event
Partnership event with Health Innovation Network South London, see UK Knowledge Exchange Section (see page 8) for details.

Activity Management

The role of the cluster in mobilising and progressing specific innovation activities was illustrated this year by the DMHIC led activity on services for Adult Attention Deficit Hyperactive Disorder (ADHD). In October 2023, DMHIC cluster member, Dr Sharon Smith Consultant Psychiatrist and Clinical Director General of Adult Psychiatry in NHS Lothian provided a conference presentation and asked the audience.

"Can Digital Technology assist with the demand for Neurodiversity Support?"

Dr Smith referred to the exponential 3 to 4-fold increase in demand for adult ADHD and Autism Spectrum Disorder (ASD) diagnosis since 2019. In March 2024, the DMHIC proposed to the Digital Mental Health Programme Board (DMHPB) that it could assist by mapping the current pathway for adult ADHD innovation to identify gaps and opportunities. The service mapping activity is underway and is being supported by DHI. The mapping is being informed by a DHI report identifying adult ADHD practice and digital technology across the UK. The full report can be accessed. https://doi.org/10.17868/strath.00089559 In May 2024, the first design workshop was held and included clinicians from a variety of health boards. The initial findings from the mapping activity will be presented to the Scottish Government Digital Mental Health Programme Board in Sept 2024.

Member Feedback

Outcomes
Clinicians gain increased understanding of how digital innovation can enhance their work and how to get involved.

Knowledge Exchange

Knowledge Exchange Resources
The DMHIC has a dedicated web page Scotland's Digital Mental Health Innovation Cluster | Digital Health & Care Innovation Centre (dhi-scotland.com) to provide on demand access to event recordings and presentations to support broad knowledge exchange.

Aligned with relevant reports and research, this forms part of a Virtual Resource Hub for DMHIC members, which is free to access. The hub also acts as a portal for national and global partners to further extend reach and raise awareness of the cluster.

Additional channels of communication have been developed in response to cluster member feedback, including a Digital Mental Health Linked in Group which enable members to freely exchange knowledge and collaborate in-between meetings and to receive relevant digital mental health updates. The appointment of a dedicated DMHIC project support assistant in November 2023 has enabled the introduction of a monthly DMHIC member newsletter.

UK Knowledge Exchange
The Health Innovation Network South London (HIN) now host the Mindset Challenge Innovators Support Programme on behalf of Innovate UK, and a representative of DHMIC has been invited to sit on their national Strategic Advisory Group. HIN have also approached the DMHIC to identify Scottish members for a series of UK roundtable events to support further knowledge exchange on the progress Scotland has achieved to date and are sharing information on the next phase of the IUK MINDSET Challenge Competition.

Building on engagement with wider UK activities, the DMHIC jointly hosted an immersive technology mental health event with HIN in the newly developed XR (Extended Reality) Lab in the University of Glasgow in June 2024.

Several cluster members presented to an audience of 43 people including Abertay University graduate Sandy Tarvet who was the winner of the 2023 TIGA Games Education award The Longest Walk – Alexander Tarvet (alexanderjamestarvet.com) . His presentation served to highlight the increasing role of Gamification in Mental health to a UK wide audience, a trend previously highlighted in the DHI report Emerging Innovations in Digital Mental Health : A Deeper Dive - Strathprints.

Figure 5 . Care Reality demonstrating immersive innovations at DMHIC & HIN Event - June 2024

Outcomes
Cluster members gain access to new funding opportunities and collaborative partners.

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The Digital Mental Health Innovation Cluster (DMHIC) has been invaluable in connecting the Mindset-XR Innovation Support Programme (funded by Innovate UK) with a wealth of activity and expertise in Scotland around extended reality and mental health.

We have met innovators, clinicians, students, government officials and many more people who are passionate about using new ways to improve mental health access and treatment. Thanks to DMHIC supporting our roadshow event in June, we are beginning to form meaningful relationships, both within the Mindset-XR Innovation Support Programme and to facilitate these between contacts in Scotland and around the UK.

"

Jill Owens, National Programme Manager for IUK's Mindset-XR Innovation Support Programme

> *"It was so valuable hearing from Chris about how healthcare in Scotland works. We had no idea it was so centralised and joined up, and we were impressed at how much time and investment has gone into making digital a core part of the mental health strategy. This makes so much sense, and we found it useful to understand the system prioritises ensuring if a tool can be adopted in one place, it can be adopted everywhere. It just seems so sensible, and we really liked the approach of working in collaboration to ensure a new digital intervention can be integrated into the existing service delivery.*
>
> *We would never have considered starting in Scotland, but having learnt how much better the system works compared to NHS in England, we are prioritising Scotland as a core focus for our early piloting and adoption strategy. With a team member based in Glasgow, this also makes sense from a resource perspective. Thank you for opening our eyes*

Sarah Campbell,
CEO at Play Well for Life, RE: VR Event

Other International Knowledge Exchange (KE) Activity has included the following engagements which in addition to KE, are also designed to support collaborative activities.

- DMHIC Invited to attend 2nd Global Digital Mental Health Conference Derry
- Presentations to Ministry of Health Singapore
- Wellcome Connect
- University of Melbourne Lived Experience Research
- Prof John Torous Stanford University, USA
- Prof Roche, Ohio University, USA

International Knowledge Exchange
The most recent activity to exchange knowledge between Scotland and international partners is the development of a podcast between DMHIC and European Connected Heath Alliance (ECHA), one of its member organisations.

The podcast release is scheduled for Autumn 2024 and will be shared via links to both organisation's web pages to enable access to over.

- 78 countries
- 1,100 members
- 80 International Ecosystems

Summary Of Achievements

Cluster Connectivity	Activity Management	Knowledge Exchange
· Cluster Membership growth of over 21% in Year 2 to over 1,200 members. · Delivery of 4 DMHIC events · Expansion of Virtual Resource Hub · Collaboration with HIN South London & Mindset Innovators Support Programme	· Demonstrable progress against DMHIC Outcomes Map · FAQ resource developed for business members. · Initiated Adult ADHD Service and innovation mapping	· Collaboration with ECHA on a DMH podcast to support International KE · Report on Extended Reality Market in UK · Introduction of monthly DMHIC Member Newsletter · Co-ordinating Innovate UK £20m Mindset challenge 2 · DMHIC Year 2 Progress report

Next Steps – Year 3

Over the past 2 years of its development, the DMHIC has established a strong foundation for trust, confidence, expertise and a willingness of over 1200 members to engage. The innovation cluster has become known as the "face of Digital Mental Health "for Scotland. As this key focal point, DMHIC has curated a wider awareness of and helped to pull together the strands of digital innovation taking place in mental health across Scotland. The DMHIC now needs to build capability by exploring the wider opportunities and the potential of new and emerging technologies in the right way. Such new technologies were identified in a previous DHI report Emerging Innovations in Digital Mental Health : A Deeper Dive – Strathprints and included Virtual Reality (VR), Artificial Intelligence and Gamification.
In Year 3 the DMHIC will focus on three areas of priority for further development

Cluster Connectivity
The DMHIC has been funded for 3 years to evidence the cluster approach works and will continue to develop the sustainability of its approach to influencing and supporting innovation through increased proactive cluster membership.

Activity Management
Identification of key priorities in mental health with a need to align these priorities with the right emerging technologies.

Knowledge Exchange
Continue to build on knowledge exchange to support commercial readiness for deployment. This work will include continued upskilling for commercial partners to increase awareness of funding and collaboration opportunities.

Other Year 3 activity will include;

Cluster Connectivity	Activity Management	Knowledge Exchange
· Continue to proactively increase the reach and membership of DMHIC. · Identification of Key Challenge Priorities in MH	· ADHD mapping work · MINDSET 3 support for cluster members to submit funding bids.	· ECHA Podcast to seek international collaboration opportunities · Summary of Current Digital MH innovations from survey undertaken. · Year 3 Progress Report

APPENDIX 1: DMHIC Outcome Map

To create the adoption of an outcome-based approach from the initiation of the cluster development, DMHIC commissioned Matter of Focus (Scottish SME (Small/Medium Enterprise) and the use of their software tool Outnav. Cluster mapping was undertaken with an array of participants from academic, business, and civic sectors. This session can be viewed on https://vimeo.com/687075190

What we do	Who with	How they feel	What they learn and gain	What they do differently	What difference does this make
Carry out research to identify examples of local and global innovation and good practice and explore potential for spread and scale	Advisory Group	Excited and motivated by the potential for innovation	Clear priorities for the Innovation cluster, informed by the perspectives of diverse cluster members	Cluster members work together to develop and adopt successful digital interventions for mental health	Effective digital interventions for mental health are adopted at scale
Bring clinicians, academics, policy makers, industry partners and other stakeholders together to identify priority areas for action	Cluster members	Part of something bigger than the sum of its parts	Cluster members gain new funding opportunities and trusted collaborative partners	Cluster members draw on insights from users as they develop and adopt digital solutions	Improved buy in across stakeholders
Establish our communication channels and recruit Innovation Cluster members	People who could benefit from the learning from this work	Welcomed, included and that I have a valuable contribution to make	Clinicians gain increased understanding of how digital innovation can enhance their work and how to get involved	The wider community draws on the learning from the cluster as they develop and adopt digital solutions	Better designed, safer and more effective approaches
Bring cluster members together face to face and virtually through events, meetings and an online network	Public and people with lived experience		Industry partners get timely insights and access to intelligence from clinicians, policy and people using services	Organisations develop and adopt new digital solutions in line with agreed priorities	Solutions which are feasible, can be adopted and implemented in systems
			Cluster	The conditions for change are created	Users are shaping the market

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The Outnav software tool enables a stepped methodology to detail outcomes and capture evidence sources to track their progression and the contribution of the innovation cluster Visually, as a dashboard it assists in gap analysis showing areas of innovation cluster success and those for further development.

The pathways were divided to consider progress in the following two initial areas.

1. Outcome 1: Cluster members work together to develop and adopt digital interventions for mental health.
2. Outcome 2: Establish and share learning from the Innovation Cluster.

Within these outcomes there are short, medium, and longer-term time frames and stepping stones for achievement.