



Engineering and
Physical Sciences
Research Council

Digital Health Hubs- Information Webinar

31 May 2022

**Katherine Freeman– Senior Portfolio Manager,
Healthcare Technologies**

What we will cover today

- Welcome and introduction
- The need for skills and knowledge sharing in digital health- Dr Peter Waggett (IBM) and Prof Ann Blandford (UCL)
- Funding opportunity scope and aims
- Funding opportunity details
- Q&A



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Introduction to Digital Health

Katherine Freeman– Senior Portfolio Manager, Healthcare Technologies



EPSRC's priorities and UKRI strategy

- We want to set out a clear, vision for EPSRC, framed around our 7 priorities
- The delivery plan and allocations process will be framed around the UKRI strategy
- We want to demonstrate EPSRC's unique role in delivering the strategy

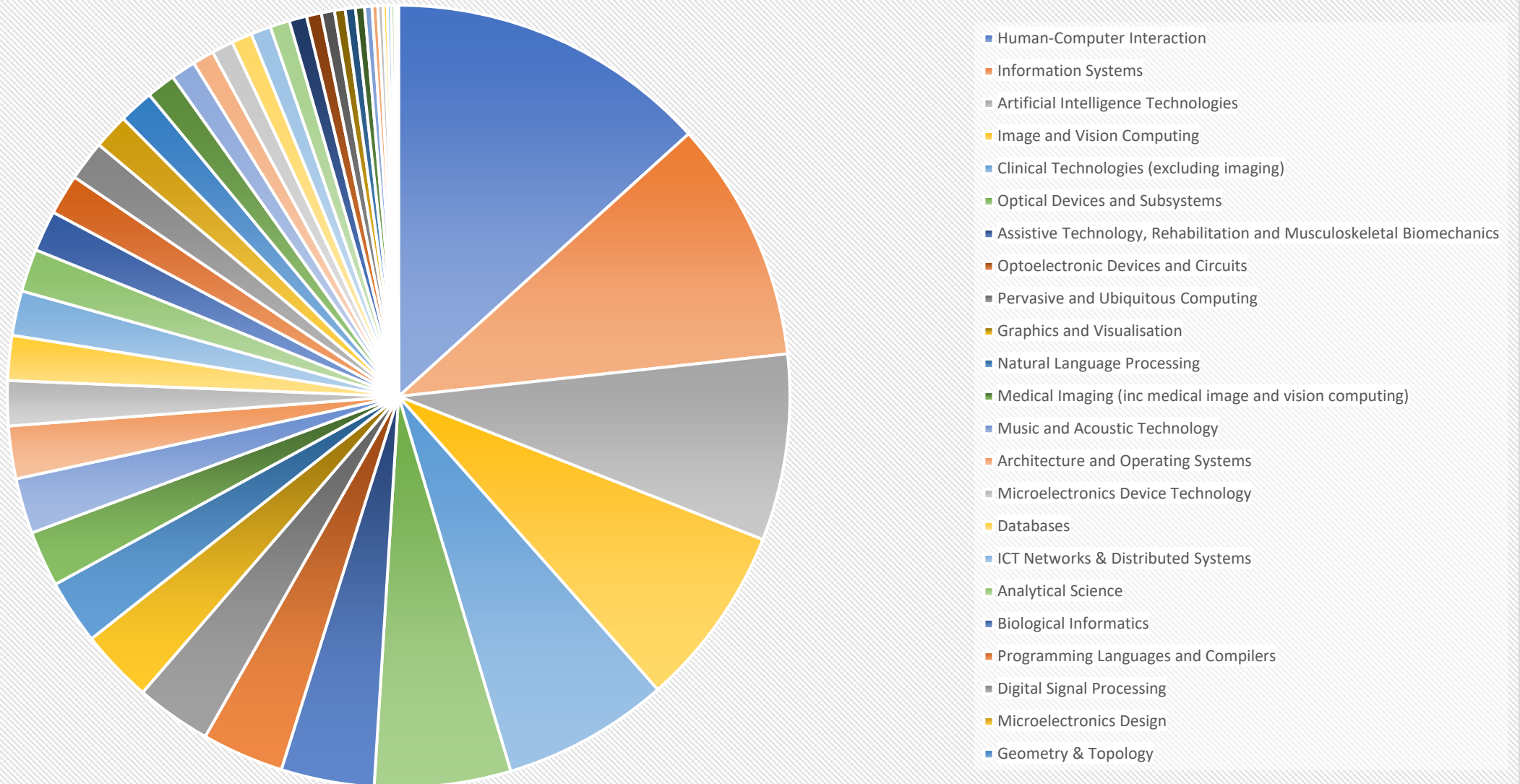


People and careers	Places	Ideas	Innovation	Impacts
Making the UK the top destination for talented people and teams.	Securing the UK's position as a globally leading research and innovation nation with outstanding institutions, infrastructures, sectors and clusters across the breadth of the country.	Advancing the frontiers of human knowledge and innovation by enabling the UK to seize opportunities from emerging research trends, multidisciplinary approaches and new concepts and markets.	Delivering the government's vision for the UK as an innovation nation, through concerted action of Innovate UK and wider UKRI.	Focussing the UK's world-class science and innovation to target global and national challenges, create and exploit tomorrow's technologies, and build the high-growth business sectors of the future.
Supported by a world-class organisation – making UKRI the most efficient, effective and agile organisation it can be.				

Definition of Digital Health

Digital Health research and innovation is comprised of the challenged and user-led design, development and evaluation of novel digital solutions for wellness, prevention, diagnosis and treatment, including but not limited to: digitised health systems and operational activities; internet of things linked sensors and devices, immersive technologies, artificial intelligence-based decision support tools, health analytic tools and digital social healthcare interventions.

EPSRC Digital Health Portfolio 2021



EPSRC Digital Health Portfolio

CancerCardiovascular

Generic Health Relevance

Respiratory

EarMental Health

Musculoskeletal

Other Reproduct. Health & Childbirth

InfectionStroke

Neurological



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The need for skills and knowledge sharing in Digital Health

Dr Peter Waggett- IBM, Professor Ann Blandford- UCL



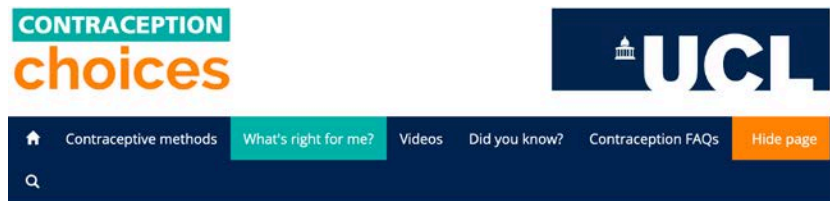
Digital Health Hub webinar: Lessons (being) learned

Ann Blandford
Professor of Human-Computer Interaction
UCL



Digital health

“Digital health research and innovation is the development, application and impact, of innovative digital solutions that have the potential to transform health and healthcare and enhance wellness and independence.”



What's right for me?

Select what's important to you

Click 'Calculate my top three methods' to see the results. 1

Do you want regular periods, or no periods?

- ☐ Regular periods
- ☐ No periods

Do you want lighter/less painful periods?

- ☐ Yes
- ☐ Not an issue

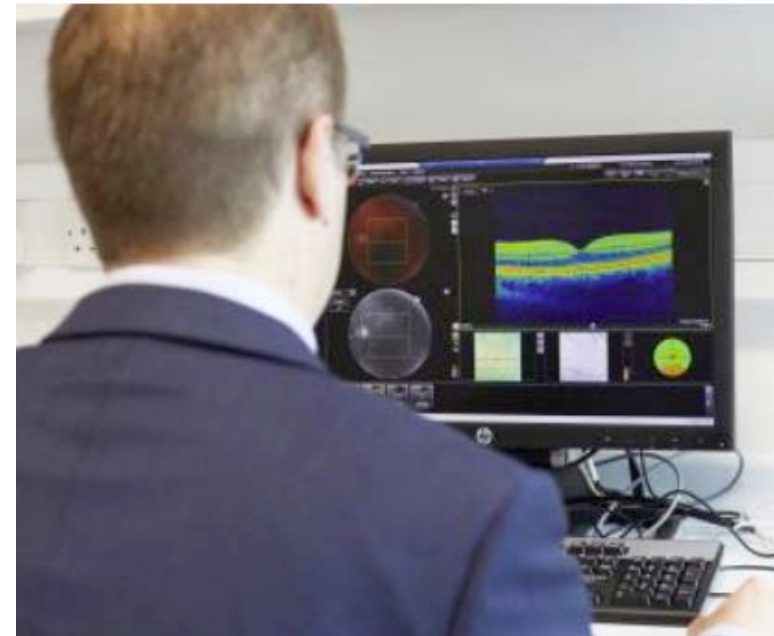
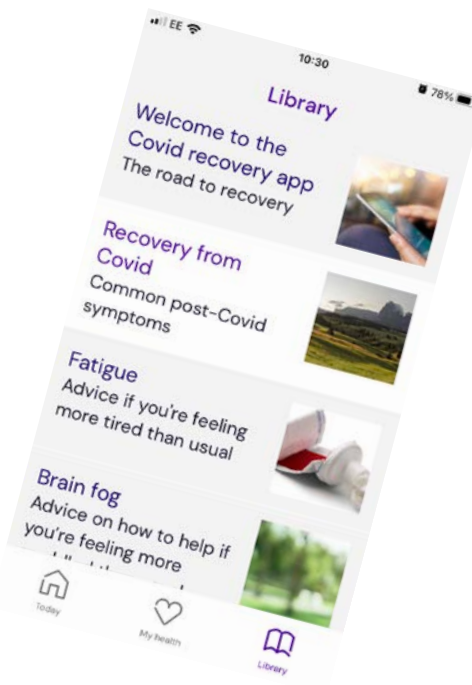
Implant



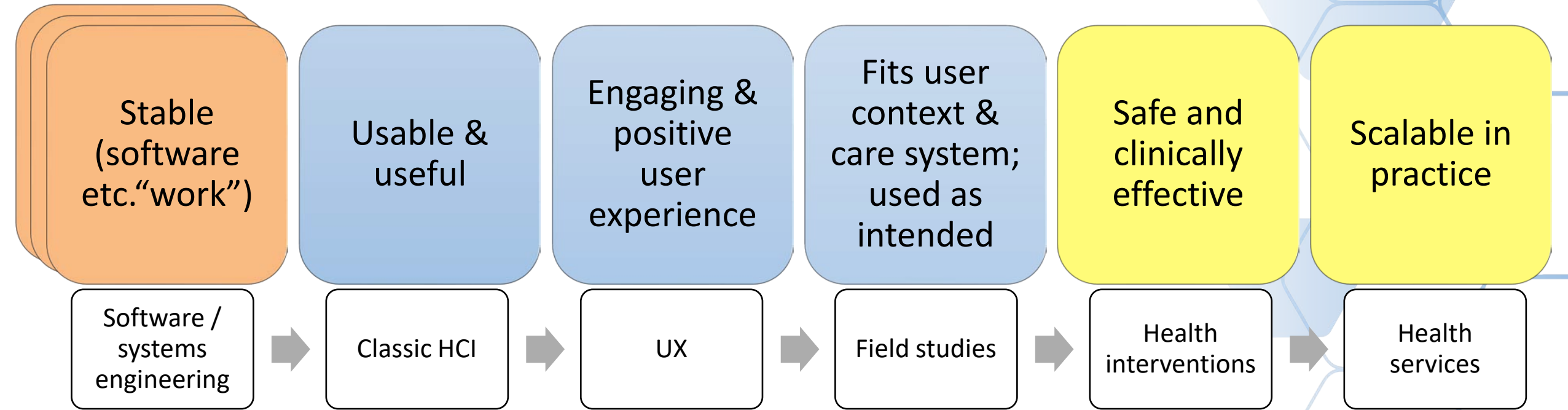
IUS (Mirena)



Copper Coil



Proximal and distal outcomes



Early impressions from working with clinicians

They're so confident of
their expertise
This is hard!
What about
design iteration?
I feel scruffy!

...led to:

Seven lessons for interdisciplinary research on interactive digital health interventions

Ann Blandford , Jo Gibbs, Nikki Newhouse, Olga Perski , Aneesha Singh, Elizabeth Murray

Show less ^

First Published May 3, 2018 | Research Article | [Find in PubMed](#) |  Check for updates

<https://doi.org/10.1177/2055207618770325>

[Article information](#) ▾



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Abstract

Research and development for interactive digital health interventions requires multi-disciplinary expertise in identifying user needs, and developing and evaluating each intervention. Two of the central areas of expertise required are Health (broadly defined) and Human–Computer Interaction. Although these share some research methods and values, they traditionally have deep differences that can catch people unawares, and make interdisciplinary collaborations challenging, resulting in sub-optimal project outcomes. ...

Lessons: Taking the best from each culture

Area	HCI	eHealth
The state of the art	Opportunistic	Systematic
Lifecycles	Iterative, formative	“Waterfall”, summative
Requirements and design	Exploratory, iterative, creative, user-centred	Draw on theory and mechanisms of action, based on clinical expertise
Implementation	Refers to each development cycle (prerequisite to evaluation)	Happens at the end when system evaluated
Evaluation	Formative: UX	Summative: clinical outcomes
Ethics	Focus on consent	Focus on harm
Publishing	Research, unbounded	Many kinds, short



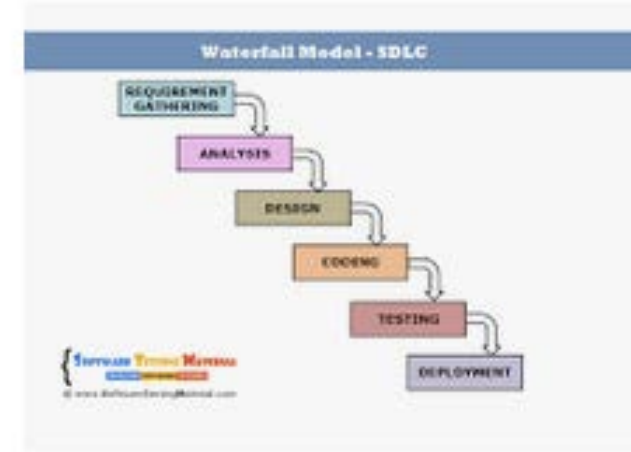
So much to think about:

- BSI PAS 277 +
 - Regulatory & legal compliance.
 - Usability and user experience.
 - Reliability, performance, scalability.
 - Data security & privacy.
 - Safety.
 - Compatibility & portability.
 - Maintainability.
 - Economic sustainability.
 - Digital inclusion and adoption.
 - Clinical accuracy.

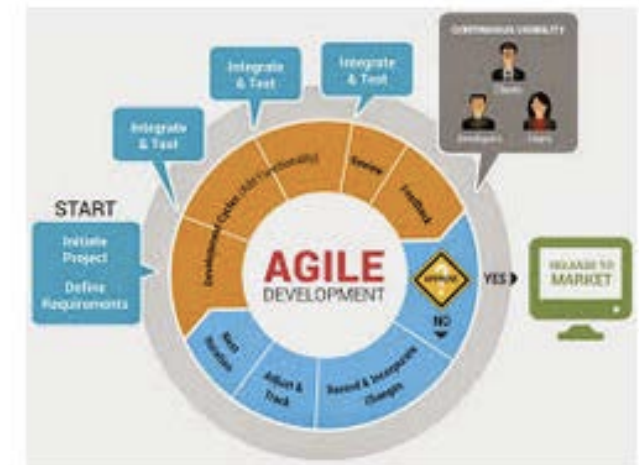


Patient safety and regulatory

- Avoiding “pilotitis”.
- What is required to scale up from a prototype.
- Iterative vs waterfall design and testing.
- Ecologically valid and safe user testing is *hard*.



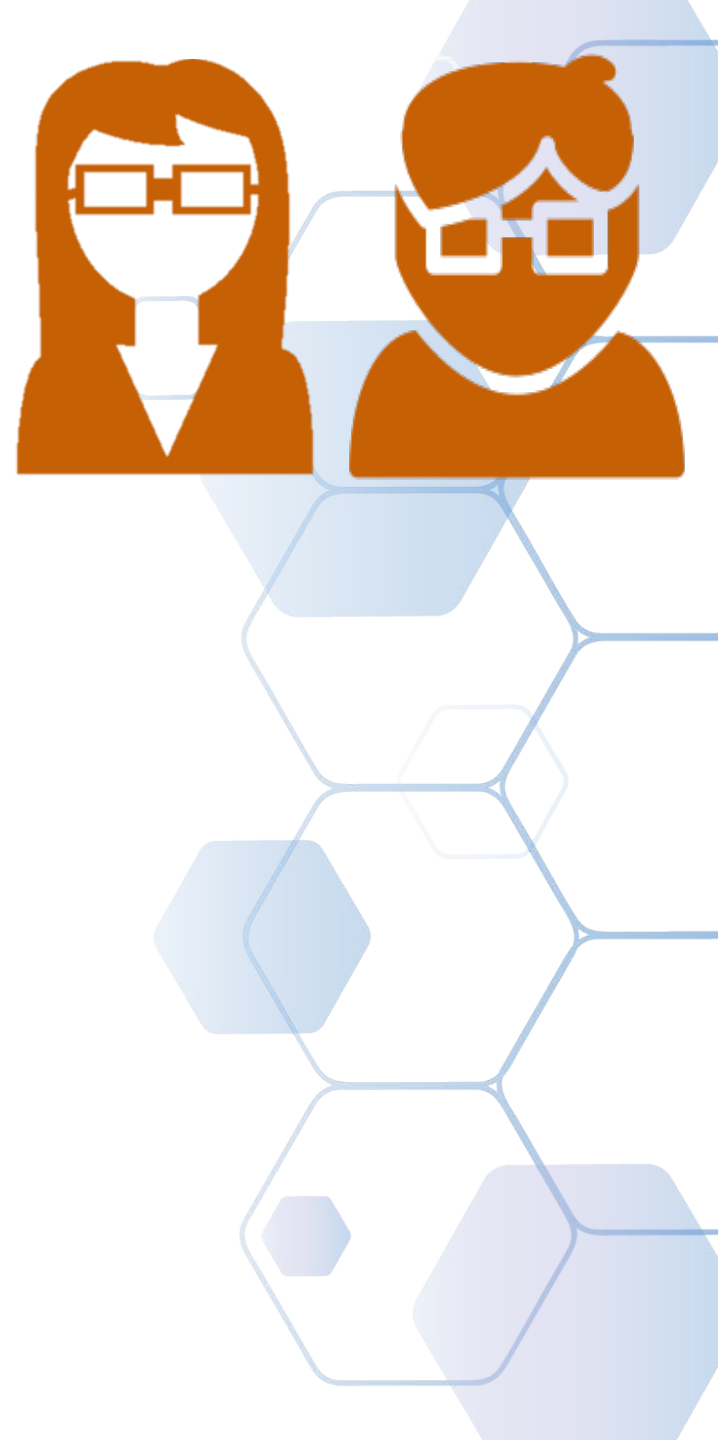
Waterfall Model in Software Develo...
softwaretestingmaterial.com



Software Development Life Cycle (SDLC ...
pinterest.com

So many different values...

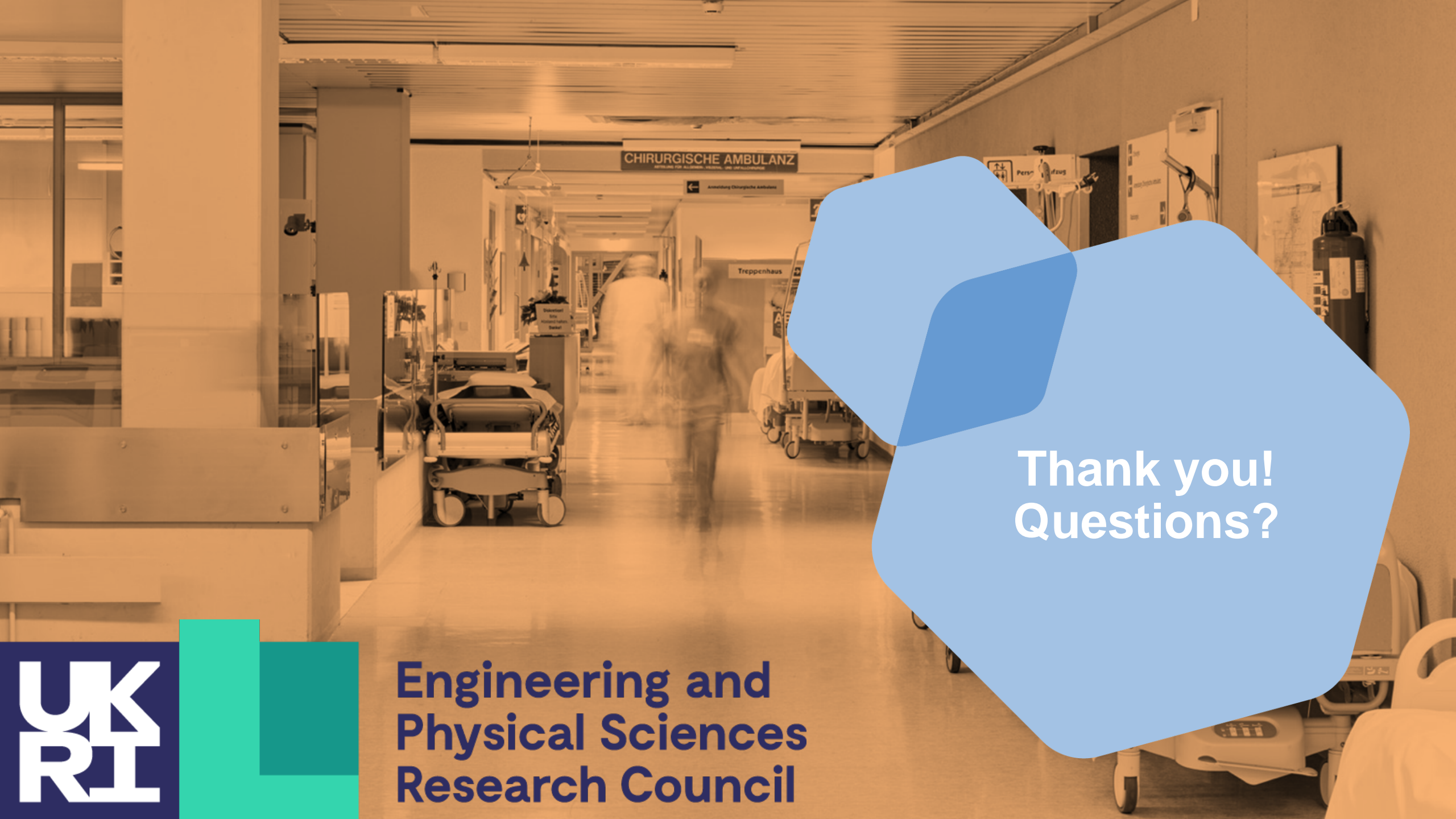
- Who are the experts?
 - Professionals or public?
- What methodologies are valid?
 - Assurance, insight, innovation.
- What are the timescales?
- Research or consultancy?
 - Papers and/or impact?



What / would love from a Digital Health Hub

- Strategies for building the essential multi-disciplinary projects
 - And the confidence to think big – “bench to bedside”.
- An understanding of the different disciplinary values and cultures and how to maximise synergies.
- More discussion on complex systems and design.
- Discourse on dealing with ethics ethically.
- Better strategies for meaningful engagement with “real patients”.





**Thank you!
Questions?**



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Aims and Purpose

Katherine Freeman– Senior Portfolio Manager, Healthcare
Technologies



Why this funding opportunity

- Identified gaps in skills and knowledge within academia and business and the sharing of these skills.
- Survey identified gaps:
 - understanding of the whole regulatory pathway
 - understanding the medical and care environment and working with healthcare professionals
 - identifying user needs and working with users
 - understanding of NHS infrastructure and systems
 - technical software development and data science skills.

Funding opportunity aim

Hubs should promote knowledge and skills sharing across healthcare, academia and business, and drive future innovation in digital health.

What are we looking for?

- increasing **skills and capacity** in the development of digital health and care solutions across academic disciplines, healthcare and industry;
- building **new partnerships** between industry, healthcare, social care, users of digital technologies and academia;
- increasing the **sharing of knowledge** between industry, healthcare and academia;
- allowing **co-creation** of solutions with users across healthcare, such as patients, carers and clinicians;
- providing a mechanism for fostering **leadership** in digital health and care.

Hub Components

Enable skills and knowledge sharing

**Mechanism for
building and
sharing
knowledge and
skills**



**Entrepreneurial
environment**



**Collaboration and
engagement between
academia, business,
healthcare and users**



**Co-delivery, co-design
between academia,
business, healthcare and
users**



**Pilot research studies
which address health
challenges**

Enable skills and knowledge sharing

- A mechanism for building and sharing knowledge and skills between businesses across academic disciplines, and with the health and care system.
- This could be through:
 - Vocational training
 - Continuing professional development courses
 - Secondments
 - Workshops
 - Seminars



Entrepreneurial environment

- The hub should create an entrepreneurial environment in which researchers, health and care professionals and businesses can:
 - network
 - build partnerships
 - share knowledge and ideas to scope applications, business models and routes to market for new digital health technologies.



Industrial and user engagement

- **Industrial engagement**

- allow companies to co-create research programmes and mitigate some of the risk of undertaking fundamental and early-stage research
- enable access to skilled academics and health professionals to enable faster development of better digital tools for health
- help inform and frame research so it addresses commercialisation challenges earlier, helping to de-risk future stages of development and increase the likelihood the technology will attract future investment

- **User engagement**

- We expect hubs to incorporate a range of different expertise that will enable any digital technologies developed to consider issues around being responsible, trustworthy and equitable technologies.

Digital Health Innovation Strategy

- Have a strategy for technology-based, market-led innovation in digital health where there is clear evidence of a strong business and user need in health.
- Hubs are expected to establish and exploit strong connections with patients and the public to ensure that research and solutions are:
 - easier for the public, and health and care professionals to use
 - developed with an understanding of unmet needs and health inequalities

Early stage research

- Hubs can include costs for funding pilot research studies. These should be interdisciplinary projects formed from the collaborations made at the digital health hub.
- There should be a focus on pre-competitive research. Research at the hub should be mainly novel research in information and communications technology (ICT), mathematical sciences and engineering to develop innovative digital technologies for health.
- There must be a focus on the research and development of digital health solutions that address unmet health needs.

Call Overview

- Up to £8M is available
- Awards are expected to be 3 years long
- Pilot awards with a review stage



Timeline

- Expression of interest closing date 28 June 2022 16:00
- Full proposal closing date 11 August 2022 16:00
- Interview panel February 2023



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Call Details

Katherine Freeman – Senior Portfolio Manager Healthcare Technologies



Eligibility

Normal EPSRC eligibility rules apply to who can receive funding

- **Standard EPSRC eligibility rules apply.** Research grants are open to:
 - UK higher education institutions
 - research council institutes
 - UK Research and Innovation (UKRI)-approved independent research organisations
 - eligible public sector research establishments
 - NHS bodies with research capacity.

Equality, Diversity and Inclusion

- In line with the UK Research and Innovation Diversity Principles, EPSRC expects that equality and diversity is embedded at all levels and in all aspects of research practice
- With this in mind, we welcome applications from academics who job share, have a part-time contract, need flexible working arrangements or those currently committed to other longer, large existing grants
- Please see our Equality and Diversity webpages at <https://epsrc.ukri.org/funding/equalitydiversity/> for further information

How to Apply

Expression of Interest

- The 'expression of interest' form must be submitted by **16:00 on 28 June 2022**.
- You should prepare and submit your expression of interest using the short web form on the **SmartSurvey system**.
- This stage is intended to help EPSRC identify reviewers and plan for demand
- This stage is not assessed but you do need to submit an EOI to apply



How to Apply

Full Proposal

When applying, select 'new document' then:

- council: EPSRC
 - document type: standard proposal
 - scheme: standard
 - call/type/mode: pilot EPSRC digital health hubs.
-
- EPSRC must receive your full proposal application by 16:00 on 11 August 2022.



How to Apply- Full Proposal

- **a case for support** (eight pages: two about your track record and six about the scientific case, *addressing what we are looking for in a hub*)
- **a work plan** (of no more than one page)
- **a justification of resources** (of up to two pages)
- **CVs** (of no more than two A4 sides each) for:
 - named postdoctoral staff
 - researcher co-investigators (namely research assistants who have made a substantial contribution to the proposal and will be employed on the project for a significant amount of time)
 - visiting researchers
- **letters of support** from all project partners included in the Je-S form (they must be on headed paper, signed and dated within six months of the proposal submission date).



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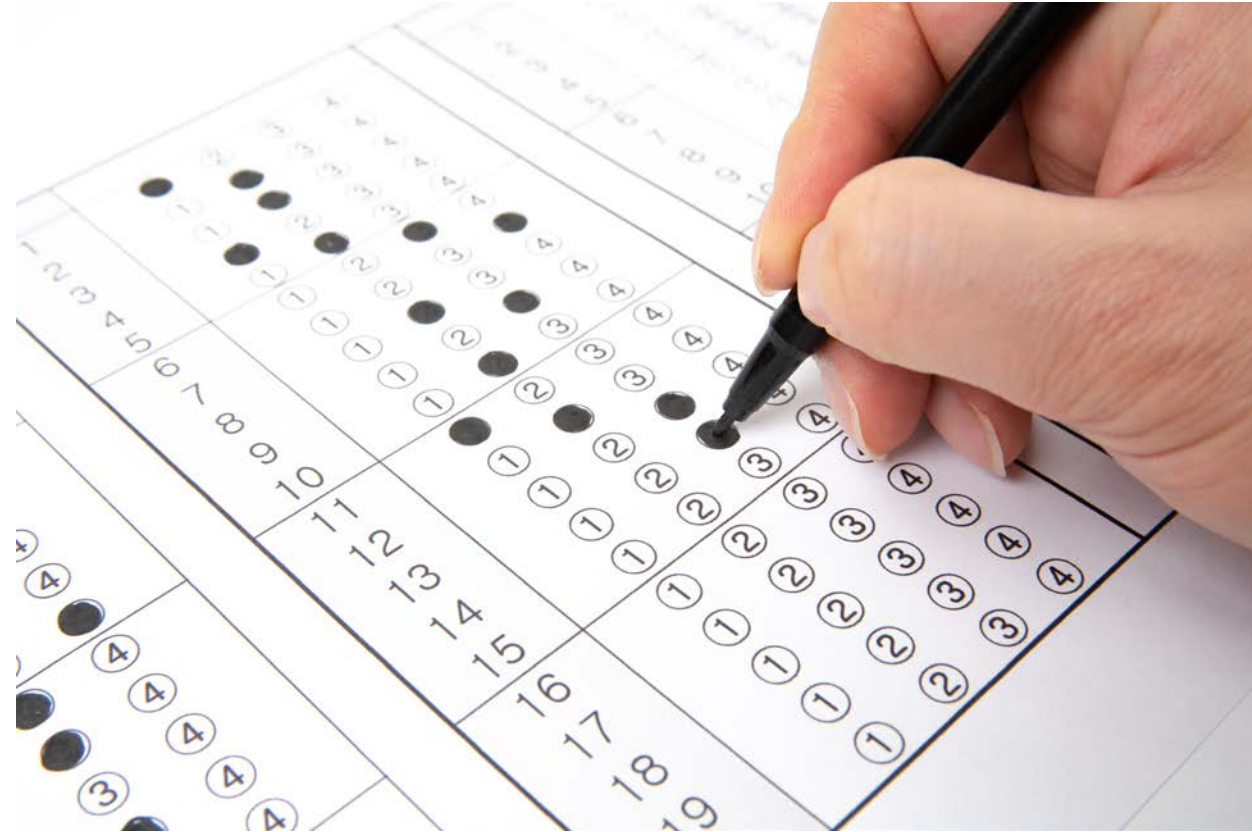
How to Apply

Submitting an application

- Multi-institutional bids should be submitted as a single, combined Je-S proposal form
- All attachments must be in single-spaced typescript in Arial 11 or other sans serif typeface of equivalent size. Margins of at least 2cm
- Text in diagrams or pictures, numerical formulae or references can be smaller but must be legible
- This is to ensure accessibility of your paperwork to all potential reviewers

Assessment Process

- Postal peer review
- Prioritisation panel
- Interview panel



In the event of this funding opportunity being substantially oversubscribed as to be unmanageable, we may need to modify the assessment process.

Assessment Criteria- Full Proposal

1. Vision and excellence of the centre (primary criterion)
2. Fit to this specific funding opportunity (secondary criterion)
3. Importance (secondary criterion)
4. Applicant and partnerships (secondary criterion)
5. Resources and management (secondary criterion)

Full details can be found here: <https://www.ukri.org/opportunity/digital-health-hub-pilot-scheme/>

Assessment Criteria- Interview

- Applicants invited to interview will be assessed using additional criteria.
- **Vision and leadership**
- The panel will consider how well the applicant demonstrates an ambitious vision and ability to provide effective leadership of the hub.
- **Facilities and environment**
- The level of access to facilities and equipment to meet the needs of the hub's vision will also be assessed.

Costs you can apply for

- **Directly allocated costs:** Investigators, estates and indirect costs, costs for major facilities, costs for use of existing equipment, animal costs.
- **Directly incurred costs:** Staff, visiting researchers, travel and subsistence, other costs e.g. consumables, consultancy fees, computing, recruitment and advertising costs, sub-contracting
- **NHS costs:** EPSRC will pay the research costs associated with the NHS component of a proposal. NHS support and NHS treatment costs will not be covered.

<https://www.ukri.org/councils/epsrc/guidance-for-applicants/costs-you-can-apply-for/#contents-list>



Funding for Impact

- You can request resources for :
 - employment of specialist knowledge transfer staff
 - consultancy fees, publication and marketing costs
 - public engagement activity
 - engagement events
 - networking activities
 - people exchange.



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General Q&A Session





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Thank you



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