




Transformative healthcare technologies: full proposal stage

Opportunity status:	Open
Funders:	Engineering and Physical Sciences Research Council (EPSRC)
Funding type:	Grant
Total fund:	£6,000,000
Maximum award:	£300,000
Publication date:	2 December 2020
Opening date:	3 December 2020
Closing date:	4 March 2021 16:00 UK time

Last updated: 26 January 2021

Start application

 Due to the impact of COVID-19 the submission deadline has been extended to 4 March 2021 16:00 UK time and the grant start date has been changed to 1 October 2021.

This opportunity is now only open to applicants who were successful at the outline stage.

Your full proposal should support a feasibility study into high risk and high return healthcare technology research with the potential to transform healthcare by 2050.

You are encouraged to form international partnerships and multidisciplinary teams. Your project must align to the Healthcare Technologies Grand Challenges and draw on novel:

- engineering
- physical sciences
- mathematical sciences
- ICT.

There is up to £300,000 available to cover 80% of the full economic cost (FEC) of your study.

[Close all](#)

Who can apply

Standard EPSRC eligibility rules apply. Research grants are open to:

- UK higher education institutions
- research council institutes
- UKRI-approved independent research organisations
- NHS bodies with research capacity.

Please read the [guidance on institutional eligibility](#).

You can apply if you are resident in the UK and meet at least one of the bullets below:

- are employed at the submitting research organisation at lecturer level or equivalent
- hold a fixed-term contract that extends beyond the duration of the proposed project, and the host research organisation is prepared to give you all the support normal for a permanent employee
- hold an EPSRC, Royal Society or Royal Academy of Engineering fellowship aimed at later career stages
- hold fellowships under other schemes (please contact EPSRC to check eligibility, which is considered on a case-by-case basis).

Holders of postdoctoral level fellowships are not eligible to apply for an EPSRC grant.

Submissions to this call will count towards the EPSRC repeatedly unsuccessful applicants policy.

If you are currently restricted under the repeatedly unsuccessful applicants policy, you will only be able to submit one full proposal, as principle investigator (PI) or co-investigator (Co-I) during the 12-month restricted period.

We are encouraging multidisciplinary teams to apply, including co-collaboration with healthcare professionals, social scientists and users. International collaborations are allowed, however standard EPSRC eligibility rules apply to who can receive funding.

Support for international collaboration can include travel, and subsistence and consumables for research staff to visit or have extended work placements to a partner's laboratory overseas. Funding for visiting researchers is limited to 12 months per individual.

For information on the eligibility of organisations and individuals to receive EPSRC funding, read the [EPSRC funding guide](#).

What we're looking for

Synopsis

Proceeding from the first call for transformative healthcare technologies, the healthcare technologies (HT) theme seeks adventurous ideas and fundamental innovation that have the potential to significantly improve healthcare delivery by 2050.

On this call, EPSRC is collaborating with the Medical Research Council (MRC) to target projects that are guided by a longer-term vision to pursue new ideas and develop thinking and approaches supported by the next generation of underpinning science, engineering and emerging technologies in the healthcare space.

We aim to invest in high risk or high gain, multidisciplinary or interdisciplinary research drawing on novel engineering, physical sciences, mathematical sciences and ICT to advance healthcare.

We are encouraging multidisciplinary teams to apply, including co-collaboration with healthcare professionals, social scientists and users. All applications must be predominantly with the remit of EPSRC and must align to the [EPSRC Healthcare Technologies Grand Challenges](#).

This call will be administered in two aligned funding streams: the development and delivery phases. EPSRC is currently inviting full proposals for transformative healthcare technologies for offer of awards in the development phase.

For the development phase (phase 1), an initial round of seed funding will be available to analyse, evaluate and establish the attainability of key elements of a research project.

Phase 1 consists of £6 million to fund 15 to 20 projects over a 15-month period. Projects will start from 1 October 2021.

During phase 1, grant holders will be invited to submit proposals for phase 2 (delivery phase) of the call, where up to £24 million will be available to support 4 to 6

substantive programmes of research.

This call will only support preclinical and precompetitive research projects that are predominantly within EPSRC's remit. Applications to this call are encouraged, across the breadth of engineering, physical sciences, mathematical sciences and ICT, with initiatives toward increasing adventurous research in the Healthcare Technologies community.

Scope

The focus of this call is adventurous projects that will transform healthcare for 2050: technologies expected to have an impact within the next 30 years for the NHS, community or home care, and an ageing workforce.

EPSRC is looking for applications that do not just consider health treatment but also homecare, prevention and wellbeing with the overall goal of keeping people physically and mentally healthy. We are looking to support ambitious projects which are cross-disciplinary and could change the context of healthcare delivery. We seek and encourage co-creative research that can either revolutionise existing fields, and/or support discovery that might lead to radically new (disruptive) technologies.

A good example of a well-known disruptive, innovative technology that has become routine and led to real impact within the healthcare sector is magnetic resonance imaging (MRI). The discovery of MRI in medicine began with an initial study on the differences in tissue proton relaxation among normal tissues and between normal and cancer tissues. This led to the proposal of external nuclear magnetic resonance (NMR) scanning of live human beings and the subsequent development of imaging methods. MRI now serves as a primary diagnostic modality for many clinical problems, can provide information on healthy and diseased tissue and can lead to early detection and treatment of disease.

We are keen to help realise the potential of the following:

- research that merges robotics and biological systems, for example neural or sensor interfaces
- pre-symptomatic diagnosis and continuous health monitoring
- future affordable and inclusive healthcare solutions
- repurposing technologies originally developed for other fields for potential healthcare impact.

Note that the above are just some examples and not an exhaustive list.

Researchers will be required to identify the impacts and advantages of their project vision, demonstrating the future benefits of the project to the healthcare sector. Potential future impacts could include:

- transforming the healthcare sector, improving prevention, prediction, diagnosis and/or treatment of disease

- creating low-cost and/or inclusive technologies, for example to address the increasing health, social care and wellbeing costs of an ageing population
- addressing problems associated with physical health, mental health, social health and/or wellbeing
- impacting care in hospitals, homes (including hospital at home), communities, and/or the workplace
- predicting and challenging future healthcare needs
- enabling the management of complex long-term conditions
- demonstrating increased UK productivity and/or an enhanced resilience of communities through future disruptive healthcare technologies
- managing changing public and patient care expectations
- preparing the healthcare sector for changes resulting from innovation and technology.

EPSRC wishes to encourage new thinking and collaborations which will bring about the technologies to impact the healthcare sector within the next 30 years.

Co-creation is an important assessment criterion for this call (see the additional information section for details on co-creation and impact). Applicants will be required to develop and execute a strategy for engaging with potential users of the research funded in the project.

Resources for this activity can be requested as part of the project and must be justified in the application. Applicants should describe how the stakeholders will be involved throughout the project.

Researchers are encouraged to consider how they will undertake their work in a manner that maximises the opportunity to generate real-world impact. Researchers are expected to integrate this in the case for support.

We particularly welcome projects and collaborations which focus on the needs of the Healthcare Technologies Grand Challenges.

Find out more about the [Healthcare Technologies Grand Challenges](#).

Funding available

There is up to £6 million available through this call to seed fund feasibility studies of maximum £300,000 (80% FEC) each.

We expect to fund around 20 projects for 15 months with a set start date of 1 October 2021.

Individual items of equipment below £10,000 can be included in proposals for individual research projects and will be paid at 80% FEC. They should be included in the 'Directly incurred – other costs' heading.

If equipment over £10,000 in value is needed as part of the research proposal, applicants must follow EPSRC's rules for requesting equipment. EPSRC require a 50% contribution to the cost of the equipment from other sources.

Please note that the £10,000 threshold applies to individual items of equipment. Where items costing £10,000 and below are to be combined into one asset costing more £10,000 these items should be included as a 'Directly incurred equipment cost' as one item.

Find more information on [equipment funding](#).

How to apply

Applicants should ensure they are aware of and comply with any internal institutional deadlines that may be in place. You should prepare and submit your proposal using the [Joint Electronic Submission \(Je-S\) system](#).

When adding a new proposal, you should go to documents, select 'New document', then select:

- 'Create new document'
- council: EPSRC
- document type: standard proposal
- scheme: standard
- on the 'Project details' page you should select the 'Transformative healthcare technologies 2.0 – full call'.

After completing the application:

- you must 'Submit document' which will send your application to your host organisation's administration
- your host organisation's administration is required to complete the submission process
- applicants should allow sufficient time for your organisation's submission process between submitting your proposal to them and the call closing date.

EPSRC must receive your application by 4 March 2021 16:00 UK time.

As well as the Je-S application form, the following documents must be submitted:

- case for support: nine pages, two on your track record and seven on the scientific case, including co-creation and impact strategy
- workplan: one page illustrated with a simple diagrammatic work plan, such as a programme evaluation and review technique (PERT) or Gantt chart.
- justification of resources: two pages
- CVs: up to two A4 sides each only for named postdoctoral staff, researcher co-investigators (research assistants who have made a substantial contribution to the proposal and will be employed on the project for a significant amount of time), and visiting researchers
- letters of support from all project partners included in the Je-S form: no page limit. Must be on headed paper, and be signed and dated within six months of the

proposal submission date

- quotes for equipment above £25,000: no page limit
- equipment business case for any items of equipment or combined assets with a value above £138,000: up to two pages
- technical assessments for facilities listed as requiring one in the Je-S guidance: no page limit
- cover letter: optional attachment, no page limit, not seen by peer review.

You should attach your documents as PDFs to avoid errors. They should be completed in single-spaced Arial 11 font or similar-sized sans serif typeface.

Find more advice on [preparing your proposal](#).

EPSRC will not fund a project if it believes that there are ethical concerns that have been overlooked or not appropriately accounted for.

All relevant parts of the ethical information section must be completed. See [further guidance on completing the Je-S form](#). EPSRC guidance can be found under additional information.

How we will assess your application

Assessment process

Selected applicants have been invited to submit full proposals which will be sent to external peer reviewers for assessment.

Proposals which receive unsupportive comments will be rejected at this stage. If sufficiently positive comments are received, applicants will be invited to respond to these comments. Proposals will be ranked by a prioritisation panel using the reviewers' comments and the PI response.

In the event of this call being substantially oversubscribed as to be unmanageable, EPSRC reserve the right to modify the assessment process.

Assessment: standard criteria

Quality (primary)

The research excellence, referring to the:

- novelty, relationship to the context, timeliness and relevance to identified stakeholders
- ambition, adventure, transformative aspects or potential outcomes
- suitability of the proposed methodology and the appropriateness of the approach to achieving impact; for multi-disciplinary proposals please state which aspects of the proposal you feel qualified to assess.

National importance (secondary)

How the research:

- contributes to, or helps maintain the health of other disciplines contributes to addressing key UK societal challenges and/or contributes to future UK economic success and development of and emerging industry or industries
- meets national needs by establishing or maintaining a unique, world-leading activity
- complements other UK research funded in the area, including any relationship to the EPSRC portfolio
- aligns to at least one of the Healthcare Technologies Grand Challenges.

Applicant and partnerships (secondary)

The ability to deliver the proposed project, referring to:

- appropriateness of the track record of the applicant or applicants
- balance of skills of the project team, including collaborators
- relevance and appropriateness of any collaborators, evidence that the proposal has been co-created and developed in partnership to deliver maximum impact
- plans for engagement with stakeholders that will be essential to achieving impact in healthcare.

Resources and management (secondary)

The effectiveness of the proposed planning and management and whether the requested resources are appropriate and have been fully justified, referring to any:

- equipment requested, or the viability of the arrangements described to access equipment needed for this project, and particularly on any university or third-party contribution
- resources requested for activities to either increase impact, for public engagement or to support responsible innovation.

Assessment: call specific criteria (secondary major)

The fit to call, including:

Adventurous nature of the research

This must detail how it addresses the element of “risk-taking” to explore new areas of research or to translate expertise into new application area with anticipated “high gain”.

Fundamental innovation

This must detail how the idea will lead to a revolution in thinking and stimulate many other innovations or changes in healthcare technologies

Longer-term vision and clinical need

This should include a description of the research vision and an overview of the scientific challenges and research that will be involved in realising this. Researchers should clearly articulate how their vision will impact and transform health and wellbeing by 2050, including the suitability of the proposed methodology and appropriateness of the approach to achieving impact.

Feedback

Feedback will be received in the form of reviewer forms before the prioritisation meeting and the rank order list information published on EPSRC's Grants on the Web (GoW) system within four weeks after the meeting.

Nominating reviewers

As part of the application process, you will be invited to nominate up to three potential reviewers who you feel have the expertise to assess your proposal. Please ensure that any nominations meet the [EPSRC policy on conflicts of interest](#).

For more information about the reviewer selection process please see the related content links.

Guidance for reviewers

Read about the [EPSRC peer review process and guidance for reviewers](#).

Read the [reviewing standard grants guidance](#).

Contact details

For help and advice on costings and writing your proposal please contact your research office in the first instance, allowing sufficient time for your organisation's submission process.

Any queries regarding the submission of proposals through Je-S should be directed to the Je-S helpdesk:

- jeshelp@je-s.ukri.org
- 01793 444164, refer to Je-S Homepage for call opening hours

For any other queries regarding the call, please contact a member of the Healthcare Technologies Team:

- Dr Michael Onoja, michael.onoja@epsrc.ukri.org
- Ms Katherine Freeman, katherine.freeman@epsrc.ukri.org

- Healthcare Team Inbox, healthcare@epsrc.ukri.org
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Additional info

Co-creation and impact

EPSRC wishes to ensure that the research it supports through its Healthcare Technologies theme has the greatest chance of achieving a positive impact in human health. End-user engagement is particularly important to the successful design of a project which will have long term impact.

Applicants should demonstrate that applications are being co-created with relevant stakeholders which may include service users, patient groups, industry, clinicians, social scientists, policymakers and practitioners including allied healthcare workers.

Applications to this call should include plans for engagement with stakeholders that will be essential to achieving an impact in healthcare in 30 years' time. Researchers should consider both the immediate and long-term impact needs of their research and be dynamic in the range of stakeholders considered.

Investigators are encouraged to collaborate not only within the EPSRC community but also within the wider UKRI community. Researchers should also consider collaborations from the wider medical community including clinicians and health professions (including physiotherapists and so on).

Industrial and charitable engagement is also encouraged, where applicable. End-user engagement from the outset of the project planning should be included. Applications should include the need for such collaborations, where applicable.

To help, the Healthcare Technologies theme has created the [impact and translation toolkit](#). The toolkit helps researchers consider relevant topics, including:

- stakeholder engagement
- research integrity
- regulation and quality
- value.

Applicants are advised to review the impact and translation toolkit when forming their research and consider how these topics relate to their proposed programme of work. Not all topics will relate to every project and researchers need not address those which do not.

There is no expectation that researchers will undertake all impact activities themselves nor an expectation that researchers will develop extensive expertise in all the areas noted in the toolkit.

However, applicants should consider what skills, knowledge and expertise are required and how these will be brought to the project through collaboration, training, consultation or other means.

Webinar recordings

The recordings for the briefing webinar and engagement forum on the call are live and can be accessed until 18 December 2020:

- [briefing webinar recording](#) (10 September 2020), passcode: THT-Briefing1
- [engagement forum recording](#) (16 September 2020), passcode: HT-Forum2

Supporting documents

- [Equality impact assessment](#)
 - [Resubmissions](#)
 - [Repeatedly unsuccessful applications](#)
 - [Equipment](#)
 - [Use of animals](#)
 - [Responsible research and innovation](#)
 - [Ethical considerations](#)
 - [Equality, diversity and inclusion](#)
 - [Reviewer selection](#)
 - [Conflicts of interest](#)
 - [DORA](#)
 - [Transformative healthcare technologies phase 1 – outline call details](#)
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Timeline

○ **3 December 2020**
Competition opens

○ **4 March 2021**
Competition closes

○ **March to May 2021**
Peer review

○ **June 2021**
Panel meeting

○ **July 2021**
Decision announced

○ **1 October 2021**
Set grant start date

Related opportunities

[Second Call for Transformative Healthcare Technologies – Development Phase](#)

NOTE This is the first phase of our new website – let us know if you have [feedback](#) or would like to [help us test new developments](#).

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