Research repositories and grey literature research

Health Education England

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1 User research overview

1.1 Executive summary

This research was conducted by Lagom Strategy (an agency specialising in discovery and user research for digital services) between January and March 2023.

The research focussed on helping Health Education England to better understand the need for repositories capturing knowledge and/or research and grey literature in the NHS in England.

This research aimed to build on previous research including a pilot project with the British Library. One of the recommendations of that pilot was for further user and stakeholder research.

The research activities were conducted in line with the UK Government Service Standard definitions and guidance for user research as part of discovery work.

The work has concluded with a prioritised user needs backlog and a set of findings for the knowledge and library services team to consider.

The main findings are:

Context

◆ Most participants have an understanding of what grey literature is

◆ Most participants were able to define what a repository is

◆ Users access a variety of different types of grey literature

◆ Grey literature is used for a range of purposes

- Clinical staff access grey literature less frequently than other user roles
- There are different approaches to finding grey literature
- People use (or imagine using) repositories for a range of reasons

Healthcare context

- There are perceived differences in the way that grey literature and repositories are used across different healthcare roles
- There are conflicting perceptions about the use of evidence within social care

Benefits of making grey literature more accessible

- Participants believe that publicly funded research should be publicly available
- The most recent evidence can often be found in grey literature
- Increased speed can also come with increased risk
- Some grey literature is regarded as being more accessible than academic literature
- People hope that improved access to grey literature will reduce duplication of effort in healthcare research
- A repository for grey literature could enable access to older research
- Current ways of finding grey literature are inefficient

Risks of making grey literature more accessible

- Different types of grey literature are not of equal status
- There are some specific concerns about bias within grey literature
- Grey literature may compete with peer-reviewed academic research
- There are some concerns about overwhelming people with data

◆ There may be some unwillingness to share evidence

Future approaches

◆ There are strong views in support of a national repository for grey literature

◆ Some participants highlighted concerns surrounding a national repository approach

◆ Local repositories may help to overcome the deficiencies of a national approach

◆ There are aspirations for approaches driven by artificial intelligence and machine learning

Practical considerations

◆ There are strong views about the boundaries of a research repository

◆ It is important that a repository makes clear what a piece of literature is and where it is from

◆ It is important that any repository is kept up to date

◆ There are different ideas surrounding the quality assurance of a grey literature repository

◆ A governance structure is needed to maintain these practical considerations

Supporting culture

◆ Having a repository alone would not solve all of the issues in this space

◆ People will need support and guidance surrounding the use of any repository

◆ The success of a repository relies on people's critical thinking skills

◆ There is a need for specialists who can support with critical appraisal

1.2 User research goals

At the start of the research we agreed on these goals with the Health Education England team:

Stakeholder perspective analysis

1. Understand the perspectives of key stakeholders (e.g. those responsible for generating research and grey literature in national healthcare bodies, commissioners, regional and local NHS, and the NHS research function).

2. Understand the range of current approaches and solutions, including examples of the more effective current approaches.

3. Understand any known challenges or constraints (e.g. cost, inefficiency, duplicated effort) to current and future approaches.

User research

1. Understand who users of research repositories and grey literature in health and care actually are.

2. Understand what they are using research repositories and grey literature for (and what value they are getting - are these things important for healthcare?)

3. Understand and articulate the common scenarios and user journeys for users of research repositories and grey literature

    a. Identify the user needs in those scenarios

        i. Validate the significance and impact of those needs, and prioritise them

    b. Understand the current range of platforms, tools and systems that they use

    c. Understand how well they meet these needs, and whether users have unmet needs

d. Understand factors that influence why users behave in the way they do (e.g. training, access to local/national platforms)

1.3 The scope of the user research

The scope of the work was limited to the use of research repositories and grey literature in England by staff working in healthcare.

This work provides *findings* from the research, rather than making any recommendations about how to proceed.

Note: In order to allow the user needs validation survey to remain open for an additional week (to gather more responses) the planned session for the HEE team to *prioritise* the user needs backlog did not take place as part of the original project timeline. A follow up session was facilitated after the handover for the team to prioritise the backlog.

1.4 Project team

◆ Dr John Gribbin - Service designer

◆ Dr Hannah Fletcher-Poole - Lead user researcher

◆ Dr Charlotte Jais - User researcher

◆ Victoria Garnett - Delivery manager

◆ Stephen Hale - Research lead and quality assurance

◆ Helene Gorring - Knowledge and Library Services Development Manager

◆ Helen Bingham - Head of Knowledge and Library Services

◆ Lucy Reid - Deputy Head of Knowledge and Library Services

1.5 User research activities

The user research was conducted during January and March 2023.

The activities allowed us to generate the insights in this report and the other user research outputs:

1. **Kick-off workshop** with key project stakeholders
2. **Document review** (see Annex I)
3. 8 **stakeholder interviews** with key decision makers across health and care
4. 18 in depth one-to-one **user interviews**
5. 2 one-to-one **user needs sessions**
6. Analysis of 118 responses to a **user needs validation survey**
7. Development of a **backlog of 33 user needs**

1.5.1 User research participation levels

We engaged with a sufficiently diverse range of users to support the findings in this report.

NHS staff

Members of NHS staff working in clinical roles were recruited through the screening survey put together at the beginning of the research project. A public health staff user was also recruited using this method.

Other roles

Some of the prioritised user roles were particularly hard to recruit for. The majority of the *other* users who took part in the research were identified and recruited through targeted recruitment (rather than the screening survey), either via the stakeholders we interviewed, or via the HEE team.

1.6 Key associated documents

◆   A list of user needs to be prioritised by the HEE team

◆   A set of proto-personas

◆   Digitalised user journey maps

Note: **all** project documentation has been gathered and shared with the HEE library and knowledge services team team.

1.7 Background to this research

Health Education England wanted to better understand the need for *repositories* capturing knowledge and/or research and *grey literature* in health and care in England.

The team wanted to undertake user and stakeholder research to help understand the behaviours and needs of users, and the range of perspectives amongst stakeholders, to inform decisions about future approaches and services.

This work builds on previous work that has revealed:

◆ Locally captured evidence and knowledge is often as important to NHS practitioners as formally published research, but it is generally less readily discoverable

◆ Some NHS organisations manage their own research repositories, although there is no national approach or policy governing this

Previous work on this includes a pilot project with the British Library. One of the recommendations of that pilot was for further user and stakeholder research.

2 User research

2.1 Method

Our researchers consulted with a range of users during the user research to explore their context, needs and behaviours.

2.1.1 Qualitative research

◆   18 one-to-one interviews with user representatives

◆   2 user needs sessions, including persona and user journey mapping

◆   Open text comments in 118 online survey responses

◆   8 stakeholder interviews

Note: A planned user needs workshop was replaced by two individual user needs sessions.

2.1.2 Quantitative research

◆   118 respondents to the online user needs survey

Note: Surveys were online, with links cascaded digitally. It is appreciated that this may bring a bias toward users with a higher level of digital literacy. This was considered when interpreting the results.

2.2 User roles

The user research explored the user roles, identified during the inception phase:

2.2.1 NHS staff

Including:

◆ NHS staff in a range of disciplines

- ◆ Research and development leads
- ◆ Commissioners
- ◆ NHS library staff (although these users were prioritised as being a less important group than for previous research)

Attributes

- ◆ Career stage
- ◆ Clinical/non-clinical
- ◆ Users and non-users of research repositories
- ◆ Across England

3 Findings

Findings are presented by 7 overarching themes:

- ◆ Context
- ◆ Healthcare context
- ◆ Benefits of making grey literature more accessible
- ◆ Risks of making grey literature more accessible
- ◆ Future approaches
- ◆ Practical considerations
- ◆ Supporting culture

3.1 Context

3.1.1 Most participants have an understanding of what grey literature is

The majority of the individuals who we spoke to as part of the research were able to articulate a fairly clear definition of what grey literature is.

"Any document that's not published in a more traditional way, so for example peer-reviewed academic journals or other mainstream publications system." **R&D staff**

"It's a guidance case study, statutory guidance, a report produced by government, public bodies, charities, anything that basically isn't an academic journal article. We call it rainbow literature … because it's so colourful!" **Social care staff**

However, we do note that, while we recruited for a range of user roles and attributes, it is hard from this research to be conclusive about the broad level of understanding of grey literature among health and care staff in England.

We have captured the need to understand what grey literature is in the user needs backlog:

UN01: *As a health and care staff member, I need to understand what grey literature is so that I know whether to use it to make decisions where appropriate.*

This need was ranked 'Low' in the user needs validation survey. However there may be an element of self-selection at play - those who completed the survey may be more likely to already hold an understanding of what grey literature is.

3.1.2 Most participants were able to define what a repository is

Most users had a firm idea about what a repository is.

> "Where research is being stored so that anyone else not involved in the research can access and see what previous research has been done on a particular topic." **R&D staff**

However some users were more uncertain, stating that they hadn't used a repository before, and so had to make an educated guess at what they may be.

> "I haven't used a repository. I imagine it's going to be somewhere that's got a whole lot of collected research." **NHS staff (working in a medical role)**

3.1.3 Users access a variety of different types of grey literature

Users told us about a range of different types of grey literature which they used as part of their work. These included:

Case studies:

> "Very interested in case studies because I find that case studies can tell me a lot more about an individual." **NHS staff (working in allied health)**

Conference reports:

> "What springs to mind might be around conference reports." **Public health staff**

Evaluation reports:

> "It's mainly the evaluation literature, so evaluation reports from around the country of similar projects, what the outcomes have been from those." **R&D staff**

PhD theses:

> "Mainly what I've looked at is people's PhDs." **NHS staff (working in allied health)**

Policy / government documents:

> "Quite a lot of government literature." **R&D staff**

QI reports:

> "I look at a lot of quality information." **NHS staff (working in allied health)**

Reports from charities / health think tanks:

> "Look at a lot of reports from charities." **Analyst at NICE**

3.1.4 Grey literature is used for a range of purposes

One of the goals of the research was to better understand why people are using grey literature. We heard about grey literature being used for a range of different purposes.

Some users access grey literature in order to aid their day-to-day decision making.

> "I use it a lot because a lot of what I do is not always available in academic journals … grey literature is really useful for that more current, up-to-date knowledge." **Social care staff**

Others tended to turn to grey literature in more time critical situations. For example, we heard that grey literature might be used following a public health outbreak in order to find out what other authorities faced with similar situations have done in response.

> "There have been reactive situations where the situation requires you to have more of a delicate approach to seeking information." **Public health staff**

Users also recognised the value of grey literature in relation to learning from others, and adopting best practices.

> "There are things like when you go to a meeting and suppose the neighbouring borough has done a really [good piece of work] so you can adapt whatever they found to work and apply that to your local context." **Public health staff**

Some users mentioned using grey literature to inform thinking around policy.

> "I think in terms of policy direction and looking for possibly relevant articles on a particular area it can be really, really useful to get that kind of literature." **Analyst at NICE**

Some users also found grey literature useful when seeking to ensure that previous failures are not duplicated.

> "You want to build in any learning from existing projects and not just waste money or time on something that doesn't work." **R&D staff**

3.1.5 Clinical staff access grey literature less frequently than other user roles

The NHS library staff, R&D staff and NHS commissioners who we spoke to tended to report accessing grey literature more frequently as part of their role.

> "Pretty much weekly, daily. It's more often than not that you're trying to find some of that information." **R&D staff**

The clinical NHS staff who we engaged with as part of the research used grey literature significantly more infrequently.

> "Definitely not weekly, or even fortnightly." **NHS staff (working in allied health)**

3.1.6 There are different approaches to finding grey literature

One of the project's research goals was to identify how users currently go about finding grey literature. It is clear from the research that there are a number of different approaches to this.

Google and Google Scholar are often mentioned as a way to find grey literature.

"This can be found through search engines like Google or Google Scholar." **Stakeholder**

"I'm guilty of doing what lots of people do, I tend to do it through Google." **Analyst at NICE**

A smaller number of users mentioned accessing grey literature through repositories, such as AMBER or OpenGrey.

"I have used repositories in the past, so I have used the AMBER repository." **NHS commissioner**

We also heard about some use of regional repositories.

"In the East Midlands there's something called EMER, which is East Midlands Evidence Repository." **NHS commissioner**

We heard that users go directly to the publishing source to find grey literature. In particular, we heard that users might look to think tanks such as the King's Fund and Nuffield Health.

"There are some sources that people might want to recommend as good sources of grey literature. Think tanks like the King's Fund or Nuffield Health are more well known." **NHS commissioner**

Some users mentioned being referred to grey literature by other trusted individuals. In these cases, social media plays a role in how some users find grey literature.

"Twitter's probably a big one that I look at. Through networking really, people that you've got access to on Twitter." **NHS staff (working in allied health)**

3.1.7 People use (or imagine using) repositories for a range of reasons

We heard that users might access repositories for a range of different reasons.

Some users mention the ways they have actually used repositories. Others mention how they imagine they would use repositories (if they had access to them).

The reasons for using repositories include:

To access relevant literature all in one place:

"It's a useful way of being able to access relevant papers … all in one place." **R&D staff**

For background information on a topic:

"I'd use them just to get further background information on a topic." **NHS staff (working in allied health)**

To produce a systematic review:

"My use of them is mainly … for doing systematic reviews." **NHS staff (working in allied health)**

To put information into a repository to share with others:

"It's a place to share things that people have done … we did a literature review of something to inform one of our projects - we put that on the repository." **NHS commissioner**

To carry out quick and dirty searches:

"Works particularly well for quick and dirty searches about what I need to know." **R&D staff**

To review what's already been done:

> "We do have to access repositories just to be sure that we don't duplicate something that's already been done." **R&D staff**

To undertake a grey literature review:

> "There was this thing tacked on [to their dissertation to do list], 'and do a grey literature review'." **NHS staff (working in a medical role)**

3.2 Healthcare context

3.2.1 There are perceived differences in the way that grey literature and repositories are used across different healthcare roles

A number of stakeholders talked about the NHS's reliance on hard data such as clinical trials (rather than grey literature).

This view was echoed by some of the users we spoke to who talked about the value placed on hierarchies of evidence.

> "In medicine, there is a desire to look at clinical trials and appraise them to produce clinical guidance." **Stakeholder**

> "Before I did my doctorate I was very married to the hierarchy of evidence." **NHS staff (working in allied health)**

We heard from some stakeholders that there may be marked differences in the approaches taken by people in different roles towards grey literature and research.

> "Social care staff value 'lived experience' - the experience of 'service users' and 'clients'. Health service staff will talk about 'patients' and 'the public', which is a different language." **Stakeholder**

But in fact, we heard about the role of grey literature to inform decision making amongst users in NHS roles, in public health roles, AND in social care roles.

"The NHS is highly variable in how it uses evidence and does tend towards people making decisions based on grey literature as opposed to harder evidence." **Stakeholder**

"In some cases, for public health, grey literature is all that is available on a topic." **Stakeholder**

"Research into frontline [social care] workers found that they prefer grey literature. One hypothesis was that this is because it is more readily accessible and not hidden behind any institutional paywalls." **Stakeholder**

3.2.2 There are conflicting perceptions about the use of evidence within social care

We heard different perceptions about the use of evidence and research within social care.

One view we heard was that use of research is not prominent in social care.

"Social Care is in the early foothills of research strength and development. Primarily because its workforce in the main don't have degrees, so it isn't an environment where research tends to flourish." **Stakeholder**

Social care staff, too, recognised the *different* context of work in this sector.

"I think social care is very different from health - it's probably far more fragmented, the evidence base isn't the way it is in health ... For a lot of social care they don't have access to a library service." **Social care staff**

However, some social care stakeholders very clearly rejected the view that social care lacks a solid evidence base.

"The idea that social care is not evidence-based is very demeaning. It isn't true at all. Healthcare can learn a lot from social care, especially with its focus on understanding people's expectations for their lives." **Stakeholder**

3.3 Benefits of making grey literature more accessible

3.3.1 Participants believe that publicly funded research should be publicly available

We heard the clear view, among both the stakeholders and users that we spoke to, that publicly funded research should be available and easily accessible.

> "There is a moral obligation that anything that has been publicly funded should be available for review. There is a lot of research that doesn't fall in the category of published literature." **Stakeholder**

> "I think it should be made available if it's publicly funded … and you have to make something findable." **Library staff (at King's Fund)**

3.3.2 The most recent evidence can often be found in grey literature

One of the important aspects of grey literature appreciated by users is the fact that it can provide the most up-to-date information.

Users are often looking for the most timely learning and knowledge.

> "It's more up-to-date and more current, it can just be far more valuable than academic journals." **Social care staff**

> "Grey literature would be a much more useful tool as opposed to waiting for something to be published - by which point the situation in which you could have applied that intervention could have long passed." **Public health staff**

We heard that this contrasts with users' frustrations about how long it can take for research to be formally published.

> "I find it really frustrating with a lot of our work because we generate things for publication, but then it can take 18 months, 2 years to get published. So you've got this great evidence that you want to share." **NHS Commissioner**

3.3.3 Increased speed can also come with increased risk

Some stakeholders noted that grey literature published at speed may lack the quality of formally published evidence.

> "In Covid, there was an explosion of pre-prints because people wanted information at speed. Over time, it turned out that some of this work was not great quality." **Stakeholder**

3.3.4 Some grey literature is regarded as being more accessible than academic literature

While we heard that grey literature can take many varied forms, we also heard the perception that great literature can be easier to consume than formally published evidence.

Some stakeholders and users offered the view that grey literature can be written and produced in a more accessible style.

> "One of the benefits of grey literature is that it tends to be written in quite an accessible form, which will be one of its attractions." **Stakeholder**

> "Grey literature tends to be more accessible to the community." **NHS staff (in an education role)**

3.3.5 People hope that improved access to grey literature will reduce duplication of effort in healthcare research

A number of individuals who we engaged with during the research mentioned possible duplication of effort within health and care research.

Better use of grey literature was cited as something that could help reduce duplication of effort, saving time and resources as well as improving the quality of care.

> "Duplication of effort is an issue, it happens all the time when one hospital is carrying out something and a different hospital in the same ICB wants to do something similar." **Stakeholder**

> "I do poster judging for a quality improvement conference and I see the same … problems that they're trying to solve." **NHS Commissioner**

3.3.6 A repository for grey literature could enable access to older research

We heard a number of comments - from both stakeholders and users - about grey literature documents and research becoming harder to find as time passes.

Participants spoke about the impact of organisational change within the NHS, and websites shutting down.

A repository for grey literature was mentioned as a possible way to ensure permanent access to evidence, regardless of changes to organisations or publishing channels.

> "Websites come and go over time, depending on the retention policies of a repository this might be beneficial. If a website closes down and isn't archived anywhere then information might be lost." **Stakeholder**

> "People and initiatives come and go quickly so you need a permanent place to record this information. In 5 years time a person might leave and a programme might end, so it is important that learning isn't lost." **Stakeholder**

> "With all the organisational change if it isn't archived it just disappears … so that's a real frustration." **NHS Commissioner**

3.3.7 Current ways of finding grey literature are inefficient

A recurring theme in our conversations with users was the inefficiency of the methods they use to find grey literature.

This inefficient search and discovery can result in important research being missed.

> "It's that niggling feeling of 'I bet someone's got a really great report somewhere' and I just can't find it. But I haven't got time to sit there and find it." **R&D staff**

Some users mentioned broken links, which may relate to the problem of retaining access to older grey literature documents (see 3.3.6).

> "One thing is broken links … if you link to something on the internet links will go and they'll disappear." **Social care staff**

The fact that there is no central point of access for health and care grey literature can make the task of locating suitable documents time consuming.

> "We have all of that [grey literature], but we don't have a centralised point that we can access it." **R&D staff**

We heard that difficulties *finding* grey literature could undermine attempts to provide evidence-based care to patients.

Users spoke about needing a more efficient way of accessing evaluations, reports, QI initiatives, and other evidence they could use or learn from.

> "The whole basis of care that we provide to patients is that it should be evidence-based, and at the moment there's a massive roadblock because there isn't an easy way to access evidence." **R&D staff**

3.4 Risks of making grey literature more accessible

3.4.1 Different types of grey literature are not of equal status

Whilst it was clear from the research that users recognise the possible benefits of making grey literature more accessible, we also heard a number of concerns.

For example, we heard that not all evidence is equal. And some expressed the concern that a single discovery platform or repository could give the misleading impression about the status of evidence.

"One of the big risks is that people potentially equate grey literature with the robustness of something that has come from a journal." **Stakeholder**

"The not being peer-reviewed is the problem, you might be publishing something that has no validity." **R&D staff**

"Vital info might be missing, like someone's written this great report but there's no date on it!" **NHS library staff**

"Knowledge is situational and contextual. People could publish audits that may be poor quality, and will be specific to a particular context." **Stakeholder**

3.4.2 There are some specific concerns about bias within grey literature

We heard from some users that evidence published in grey literature *can be* misleading, because of the ways grey literature can be commissioned, conceived or quality assured.

"One of its challenges is the fact that it spreads from written material that is describing something in a pretty robust way through to something which could be biassed or misleading." **Stakeholder**

"There are examples of research evidence that may underpin the purchase of new technologies or innovations." **Stakeholder**

"There have been some examples of charities filling out best practice example templates but the outputs were a promotion of the charities work rather than learnings to help others." **Stakeholder**

One of the user needs we identified touches on these concerns, and was validated as having a 'very high' level of need amongst users in our validation survey.

UN21: *As a health and care staff member, I need to know if a piece of research has been commercially funded so that I can use this information to make decisions*

3.4.3 Grey literature may compete with peer-reviewed academic research

We heard that efforts to promote grey literature *could* undermine peer-reviewed evidence.

One stakeholder emphasised the importance of continuing to promote and use peer reviewed, academically published research in the NHS wherever possible.

"One of the real challenges within the NHS is the tendency for people to do things that aren't properly evidence based. If you emphasise the grey literature market then you might undermine proper evidence, which could be very problematic. It is important not to lose sight of research that is properly robust." **Stakeholder**

3.4.4 There are some concerns about overwhelming people with data

Some participants in the research are worried about the risk of people becoming swamped with data if grey literature is made more readily and easily available.

"People are already overwhelmed with data, there is a risk of adding useless data into the mix." **Stakeholder**

3.4.5 There may be some unwillingness to share evidence

Some stakeholders suggested that people working in health and care may sometimes be unwilling to share research.

We heard that this may be more likely when research is negative, or reflects poorly on the organisations involved.

"If there is something that calls an organisation into question, people may be less willing to publish that. Particularly if the research is sensitive." **Stakeholder**

"People are asked to share when they have tried things that have failed so that other people can learn from that but they don't want to share failures." **Stakeholder**

These were sentiments echoed by some users who recognised colleagues' reluctance to share work beyond their organisation.

For example, we heard that authors may be reluctant to share evidence that was not produced with wider publication in mind.

Or we heard that evaluation reports may reveal that work has not been successful, which authors may not want to share.

"We've heard it from a few people who are worried that by uploading their document to the repository it will be shared with people they don't know or don't trust." **NHS Commissioner**

"I think one of the issues with grey literature is that people are still reluctant to share outside of their own organisation in some circumstances. " **R&D staff**

One of the *user needs* we identified reflects a need to encourage those working in health and care to share their work more widely.

This need was validated as having a 'High' level of need among users in our validation survey.

UN32: *As a health and care staff member, I need to encourage healthcare professionals to share their own grey literature so that I can be confident this knowledge is informing decisions.*

3.5 Future approaches

3.5.1 There are strong views in support of a national repository for grey literature

For some users, a national repository for grey literature is seen as an ideal solution to many of the issues surrounding access to grey literature.

> "I have a massive frustration that there isn't a central repository for all of this stuff. I need one central place where I can go and search for whatever I want." **R&D staff**

In particular, we heard how a national repository approach would help to make searching more efficient, and future proof work against future organisational change.

> "When I'm searching for the evidence, I don't want to have to search 42 times over... What a waste of time, it's just so inefficient." **R&D staff**

> "The argument for doing something nationally would be that it's immune to organisational change. Because we've had that many in the past 10 years and things will get lost in each change." **Commissioner**

This was further validated in the user needs validation survey, with the following need ranked as 'Very High':

UN05: *As a health and care staff member, I need to access literature from across health and care in one place so that I can see research across the sector.*

3.5.2 Some participants highlighted concerns surrounding a national repository approach

Whilst there was a lot of support for a national repository approach, we also heard some concerns.

There were specific concerns that a national repository would not have adequate representation for social care.

"I think the danger of having something national that is health and care, is that it just becomes health. If it just becomes health, then people in social care won't use it because they don't have buy-in to it." **Social care staff**

There were also practical concerns about realising a national platform, based on previous NHS initiatives.

"A national one would be difficult, just because of the history of doing stuff in the NHS. Whenever there's something national it just seems to take ages." **Commissioner**

Reflecting on these issues, one stakeholder expressed the clear view that for them, the risks of a national repository outweigh the benefits.

"I feel strongly that a central repository would be an awful lot of work for not only not huge gains, but also significant risks." **Stakeholder**

3.5.3 Local repositories may help to overcome the deficiencies of a national approach

Some users had a clear preference for a local repository approach to sharing grey literature.

We heard the hypothesis that a local approach may result in a better willingness to share literature in the first instance.

"If you're going to have a local repository, people will be more forthcoming and share local knowledge." **R&D staff**

We also heard that a local approach might result in the storage of evidence that is more transferable.

"You've got the caveat that all settings in health are different and not all findings might be transferable." **R&D staff**

There are even some aspirations that involve joining up local repositories to create a national hub.

"You can have a federation of local repositories that talk to each other." **NHS staff**

Whilst these are clear benefits to a local approach, we also heard some concerns about taking this type of local approach.

In particular we heard the concern that the approach would result in an inequality of evidence depending on where someone is in the country.

> "My concern regarding research repositories is that it is a very uneven playing field. Some trusts and organisations have them, some don't and their accessibility and quality varies massively." **NHS library staff**

3.5.4 There are aspirations for approaches driven by artificial intelligence and machine learning

Our research has revealed a general expectation that artificial intelligence will be a solution in this space, at some point in the future.

> "At some point you should be able to type into an AI engine what you need. ChatGPT is good at synthesising information. But these solutions are probably some way off." **Stakeholder**

> "People think that machine learning or AI can fix these problems now. This is not the case yet but it may be in the future." **Stakeholder**

We did hear about the pursuit of this approach within social care, which suggests that this solution may not be as far away as some people perceive.

> "The ambition is for people to be able to query something in real time and get practical tailored information to the question that they have asked. An AI solution is going to be used to deliver this." **Stakeholder**

3.6 Practical considerations

3.6.1 There are strong views about the boundaries of a research repository

For some participants, a research repository should be a space where *any* research can be hosted.

> "In a way it would be nice to have everything in it, so regardless of the quality of the document, regardless of the content you almost want to see." **R&D staff**

Others oppose this view, suggesting that strict criteria are necessary to ensure quality.

> "The criteria for things going into a repository is important. If it has strict criteria about what it will hold then it is a more beneficial approach than a risky approach." **Stakeholder**

> "I think if you put everything in a big bucket it will be an absolute mess." **R&D staff**

Furthermore, we heard that if there were to be a *national* repository, it is particularly important that explicit decisions are made about scope and criteria.

> "There are bigger questions about selection criteria, quality and replicability. Answering these questions also means thinking about how robust something should be before it is worth bothering with the work to make it available to people through a repository." **Stakeholder**

3.6.2 It is important that a repository makes clear what a piece of literature is and where it is from

The importance of context surrounding a piece of work was emphasised throughout our research.

This information is seen as an important part of the critical appraisal process - helping to establish the quality of a piece of work as well as appreciating any potential bias.

> "If a repository of grey literature went ahead, it is important to flag what a piece of work is. The person searching should be able to determine if something is a work in progress for example." **Stakeholder**

> "There should be a note of caution on grey literature so that people understand what it means... Some things such as think tanks might have a personal or organisational agenda." **Stakeholder**

3.6.3 It is important that any repository is kept up to date

There are two elements relating to keeping a repository up to date. Firstly, we heard about the risk of a repository becoming dormant if people fail to engage and upload content.

> "It is also important not to end up with a dead library." **Stakeholder**

Secondly, we heard about the risk of outdated information being contained in a repository. For some, this would need to be managed by the manual removal of outdated research.

> "It's the management of that, in that when an article goes out of date, who will identify that it's gone out of date?" **NHS staff**

Having an up to date repository was also reflected in the user needs validation survey, with the following need ranked as 'Very High':

> UN19: *As a health and care staff member, I need to know that a repository is kept up to date, so that I can be confident I am looking at the latest research.*

3.6.4 There are different ideas surrounding the quality assurance of a grey literature repository

We heard a strong view from some participants that all types of grey literature, with different levels of quality, should be accessed via a repository.

> "I don't think you need the standards, you already have the standards and peer review." **Public health staff**

This was echoed in the user needs validation survey, with the following need ranked as 'High':

> UN18: *As a health and care staff member, I need to have access to grey literature of all different levels of quality, so that I can assess whether I want to use it.*

By contrast, other participants felt that quality assurance was essential to the success of any repository.

> "If people add anything then it doesn't offer anything that isn't already offered by Google. The unique selling point might be that a repository is assured." **Stakeholder**

One stakeholder even suggested that a panel of experts should review submissions to a repository as a layer of quality assurance.

> "It is important to put a health warning on the outputs too, so telling users that content has been looked at by a panel but isn't peer reviewed." **Stakeholder**

3.6.5 A governance structure is needed to maintain these practical considerations

One stakeholder with experience setting up a repository outlined some of the resources involved in their governance process.

> "To maintain a library like this there is a need for time and resources. The Academy of Royal Colleges have

appointed a digital knowledge manager to come in to create and maintain the library." **Stakeholder**

Governance is also particularly important if some of the stricter quality assurance measures were to be implemented.

For example, a panel of experts reviewing submissions as suggested by a stakeholder in Section (3.6.3) would require a robust inclusion criteria so that it can stand up to scrutiny if challenged.

"A process and governance needs to be in place as soon as decisions are being made about including work or not because people will be able to challenge the results of those decisions." **Stakeholder**

3.7 Supporting culture

3.7.1 Having a repository alone would not solve all of the issues in this space

Whilst people recognise that a repository of grey literature would make it more accessible, we also heard that cultural change would be necessary to ensure that people are in a position to best use the resource to evidence decisions.

"In its own right a repository would tick a box but a lot of work needs to be done to mobilise around it first." **Stakeholder**

"Repositories are great for having something in one place but they only work if the communication and culture surrounding it is such that it will be utilised effectively." **Stakeholder**

3.7.2 People will need support and guidance surrounding the use of any repository

We heard that support would be necessary for the implementation of a repository, and some participants suggested that this is a space HEE could usefully fill.

> "Guidance around how people contextualise research could be very useful. Something to help people understand what they found in their practice. HEE could usefully fill that space." **Stakeholder**

> "One of the things that HEE might usefully produce is guidance on how to appraise and grade literature." **Stakeholder**

3.7.3 The success of a repository relies on people's critical thinking skills

Most importantly, people recognise that a repository can only be successful if the people using it have the skills to critically appraise literature for their intended purposes.

> "The onus needs to be on users too, it's impossible to say that anything in any repository is gold standard, it needs to be critically appraised." **Stakeholder**

> "It's about upskilling the workforce so they can identify when something's really bad and know how to interpret that information." **R&D staff**

> "There is no guarantee, however, that all end users will be able to critically appraise it so a safety net might be necessary." **Stakeholder**

3.7.4 There is a need for specialists who can support with critical appraisal

Given the importance of critical appraisal skills, participants also reflected on the importance of specialists who can support this.

> "It is important to help people understand and appraise grey literature. Local library services could have a function here in helping people to access it and knowing where to search for it." **Stakeholder**

> "There is a strong argument for increasing evidence specialists. Repositories are tools for people who know how to use the tool." **Stakeholder**

4 Validating the user needs

4.1 Analysis method and outputs

29 user needs were scored by users on a range from ***0 - I have no need*** to ***4 - I definitely need***...

Each need was then categorised into **Very High**, **High**, **Medium** and **Low** priority user needs depending on the average score of the responses.

Please refer to the full data contained within the user needs validation survey analysis spreadsheets for more detail about the scoring the user needs.

The level of response to the user needs validation survey was sufficient. However it is important to note that much of the analysis excludes library staff who completed the survey as this was not one of the user roles prioritised by the client. Of the 118 complete responses, 59.3% of these identified as NHS library staff. This meant that we did not receive significant numbers of each prioritised user role to analyse the data for each specific group individually.

The levels of user need (amongst non-library staff) are shown in the chart below:

All responses (n=47)

Very high ■ High ■ Medium ■ Low ■
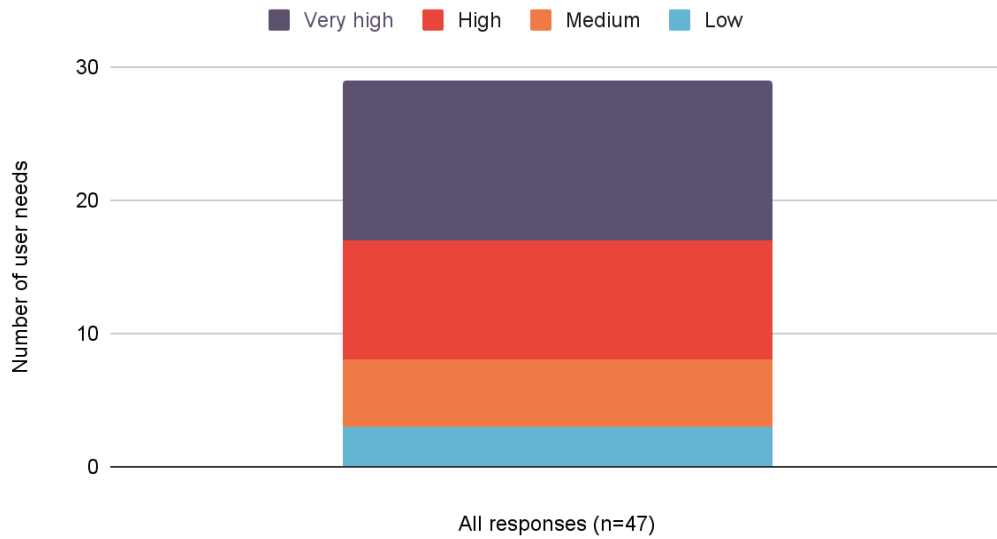
Stacked bar chart: Validated levels of user need.

The 29 user needs were also categorised into themes and the level of validated need across these themes are presented in this chart (again, this data comes from respondents who were not library staff):

Grey literature and research repositories user needs validation survey results (n=47)

Very high ■ High ■ Medium ■ Low ■
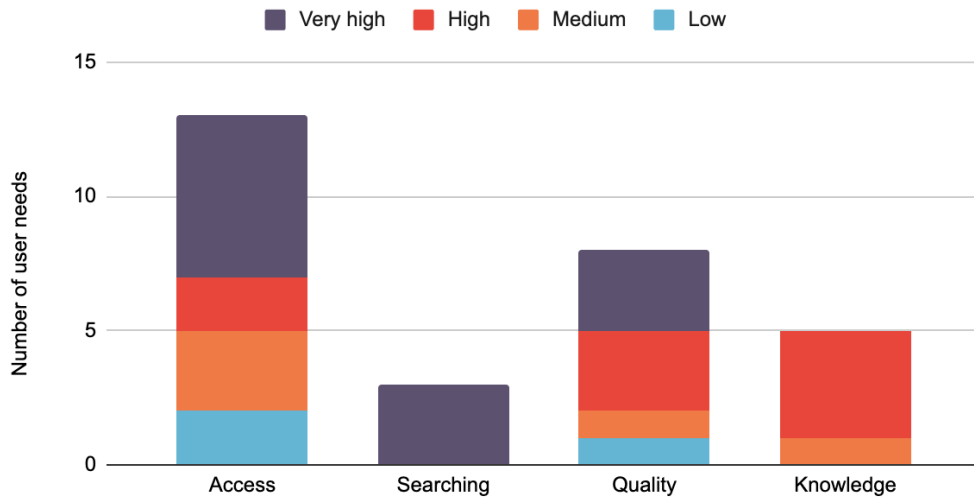
Stacked bar chart: Validated levels of user need by specific theme.

4.2 Users reported a high level of need across the range of user needs

Of the 29 user needs validated in this survey, 12 were ranked as 'Very High' and 9 were ranked as 'High'.

This suggests that users have a significant level of need surrounding grey literature and research repositories.

Needs which were ranked very highly encompassed a range of topics. The highest ranked needs amongst users (excluding library staff) were:

UN13: *As a health and care staff member, I need to be able to access grey literature without paywall restrictions so that I can view all appropriate evidence without restrictions*

UN15: *As a health and care staff member, I need to easily search multiple repositories so that I can find information in one place*

UN16: *As a health and care staff member, I need to easily determine the relevance of a grey literature document (e.g. by viewing a synopsis of this) so that I can decide whether it is useful to me*

4.3 All user needs specific to searching were validated as Very High

The user needs categorised into the theme of 'searching' were all validated as 'Very High'. This reflects the research's qualitative user research findings about the inefficiencies of current ways of finding grey literature (see Section 3.3.7).

4.4. The inclusion of library staff in the analysis changed one of the validated levels of need

Interestingly, the inclusion of library staff in the analysis of the validation survey only altered the validated level of one of the needs. This was:

UN12: *As a health and care staff member, I need to access literature across multiple devices (e.g. mobile / tablet) so that I can refer to it in my professional environment*

The analysis of the data from all user roles validated this need as 'Low'. However, amongst non-library staff roles it was validated as 'Medium'.

We note this difference, and could offer hypotheses to explain it, but we do not regard this to be a particularly significant finding.

5 Prioritising the user needs backlog

We held a session with the HEE team to prioritise the user needs backlog.

In this session the team prioritised 32 user needs using the MoSCoW prioritisation method. Each need was prioritised as either Must, Should, Could or Won't.

The backlog of user needs is available as an output of this user research (see Annex 2).

ID	As a… [user role]	I need… [user need]	Validation - non-library staff	Validation - all roles	Prioritisation
UN01	All roles	To understand what grey literature is so that I know whether to use it to make decisions where appropriate	LOW	LOW	WON'T
UN02	All roles	To find relevant grey literature so that I can fill in any gaps in the published literature	VERY HIGH	VERY HIGH	MUST
UN03	All roles	To know about all health and care repositories so that I can be confident that I'm not missing any important information	VERY HIGH	VERY HIGH	SHOULD
UN04	All roles	To have access to the full range of health and care repositories so that I can make use of all the relevant literature	VERY HIGH	VERY HIGH	SHOULD
UN05	All roles	To access literature from across health and care in one place so that I can see research across the sector	VERY HIGH	VERY HIGH	SHOULD

Image: screenshot from the user needs backlog

6 Proto personas

User personas help provide content for user needs, enabling a better understanding of the people that use services and products so you can make better informed decisions about how to improve these services.

With this in mind, we produced 4 proto personas based on our research:

1) Peter the Physiotherapist

2) Rachel the R&D lead

3) Elliott the evidence reviewer

4) Lorna the librarian

These personas are based on the research interviews, findings from the user needs validation survey, and the user needs sessions.

We have tried to bring each persona to life - giving them a name, describing some background information about them and their work context. Each persona also details their digital proficiency and their goals and aspirations.

These personas help to tease out the different ways in which health and care staff interact with grey literature and research repositories and what they need from these.

These user personas are included as an output of the research (see Annex 2).

7 User experience mapping

During the user research we mapped out user journeys for four different user roles:

1) NHS (clinical) staff

2) R&D staff

3) Commissioners

4) NHS library staff

These are based on the two user needs sessions we ran, as well as the findings from research interviews.

The journey maps highlight that there are many different motivations behind accessing health and care grey literature, and many of the common user journeys do not involve the use of research repositories.

The maps also help to tease out the range of different key pain points experienced by users, as well as serving to give a sense of how frequently users are interacting with grey literature and/or repositories.

Whilst the journeys are broken down according to different user roles, it is likely that there will be some degree of overlap.

PDFs of each of the journey maps are available as an output of the research (see Annex 2).

Annex 1: Discovery research

Research sources

Document review

Some extra material and information has been reviewed during the user research to get a picture of any research that has already been done and to try and understand the wider landscape. This included:

1. British Library NHS Shared Repository Pilot Report, September 2022

2. Article: The impact of institutional repositories: a systematic review, Michelle R. Demetres; Diana Delgado, AHIP; Drew N. Wright, December 2019

3. Article: Improving Institutional Repositories through User-Centred Design: Indicators from a Focus Group, Laura Icela González-Pérez, María Soledad Ramírez-Montoya 2 and Francisco José García-Peñalvo, November 2021

4. Article: An Institutional Repository Publishing Model for Imperial College London Grey Literature, Robyn Price & John Murtagh, January 2021

5. Background to Repositories, provided by the HEE KLS team, December 2022

6. Examples of health repositories,provided by the HEE KLS team, December 2022

User participants

All the users below were involved in interviews (by telephone or Zoom) or a user needs one to one sessions.

User interviews

1. Advanced Practice Physiotherapist, NHS staff, Clinical

2. Consultant acute medicine physician, NHS Staff, Clinical

3. Learning content manager, NHS Staff, non clinical

4. Consultant physiotherapist, NHS Staff, Clinical

5. Programme Manager for Patient Safety, Commissioner

6. Lead for Evidence and Knowledge Mobilisation, Commissioner

7. Evaluation Programme Coordinator, Research and development lead

8. Head of research and innovation, Commissioner and Research and development lead

9. Head of research design and evaluation, Research and development lead

10. Senior Analytical Lead, Research and development lead

11. Corporate Lead for Advanced Clinical Practice, Research and development lead

12. Head of Independent Investigations, Commissioner

13. Technical analyst, National Institute for Care Excellence

14. Knowledge & Library Services Manager & Ethnic Minority Network (EMN) Strategic Ambassador for quality improvement, NHS library staff

15. Knowledge and Evidence Specialist for Quality Improvement, NHS library staff

16. Head of Kings Fund Library, Library staff

17. Public Health Specialist, Public Health

18. Senior Information Specialist at the Social Care Institute for Excellence, Social care

User needs one to one sessions

19. Clinical Librarian (embedded), NHS library staff

20. Director of Collaboration and Communication for NHS Research and Development, Research and development lead
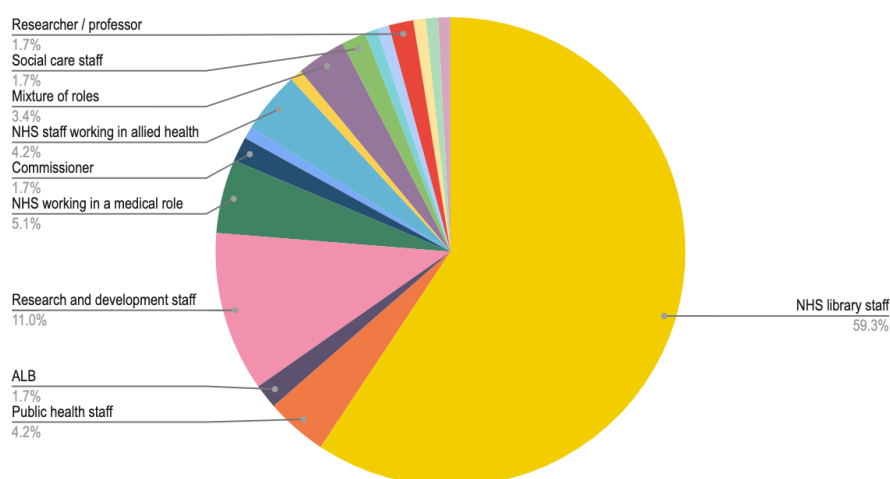
Annex 2: user research outputs

These outputs have been delivered in accordance with the project proposal:

1. Stakeholder interview notes

2. User interview notes

3. Proto-personas

4. Digitised user experience maps

5. Backlog of user needs

6. User needs validation survey data

7. Handover slides - findings

8. Report - findings
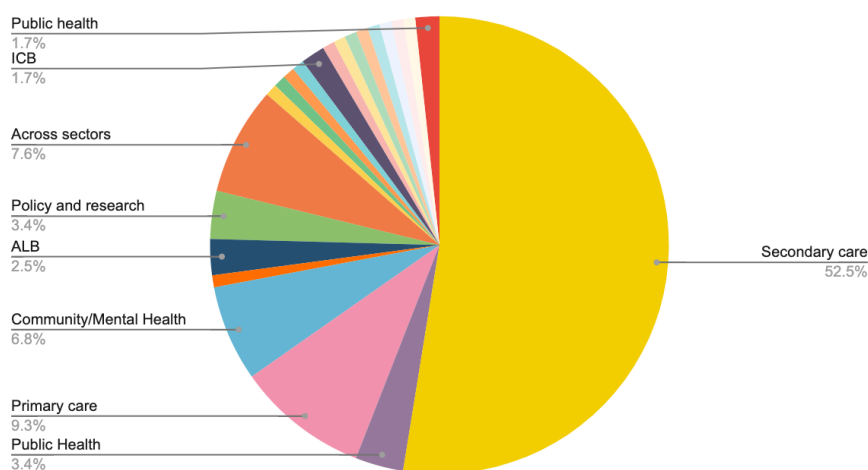
Annex 3: User needs validation survey

Further data from the 118 responses to the user needs validation survey is included in the charts below.

Which of the following best describes your role?

Researcher / professor 1.7%
Social care staff 1.7%
Mixture of roles 3.4%
NHS staff working in allied health 4.2%
Commissioner 1.7%
NHS working in a medical role 5.1%
Research and development staff 11.0%
ALB 1.7%
Public health staff 4.2%
NHS library staff 59.3%

Pie chart: User role breakdown of respondents.

What sector do you work in?

Public health 1.7%
ICB 1.7%
Across sectors 7.6%
Policy and research 3.4%
ALB 2.5%
Community/Mental Health 6.8%
Primary care 9.3%
Public Health 3.4%
Secondary care 52.5%

Pie chart: Which sector respondents worked in.

What region do you work in?

East of England 1.7%
National 8.5%
London 13.6%
Midlands 22.9%
Scotland 2.5%

South West 11.9%
North East and Yorkshire 13.6%
North West 16.9%
South East 7.6%
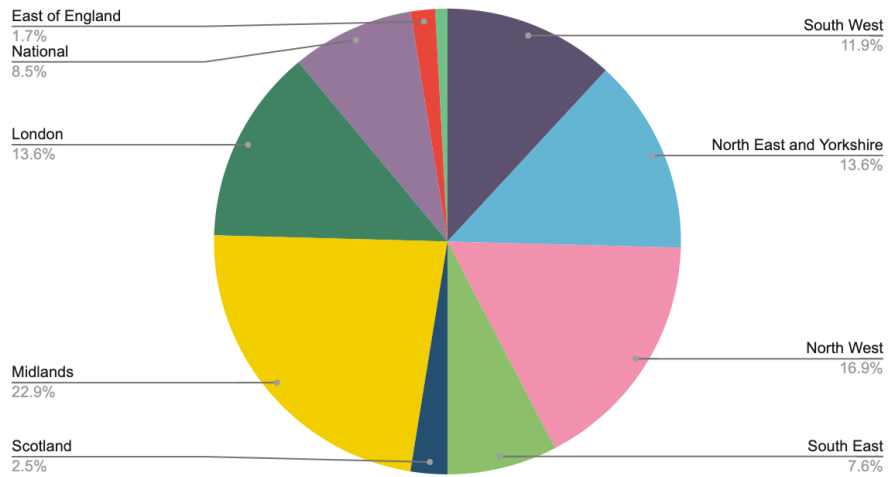
Pie chart: Which region respondents worked in.

Which of the following best describes your digital skills?

Category	Value
I am learning the ropes of being online/using digital technology	~2
I am task specific when online/using digital technology	~7
I have basic digital skills when online/using digital technology	~7
I am confident when online/using digital technology	~67
I am an expert when online/using digital technology	~35
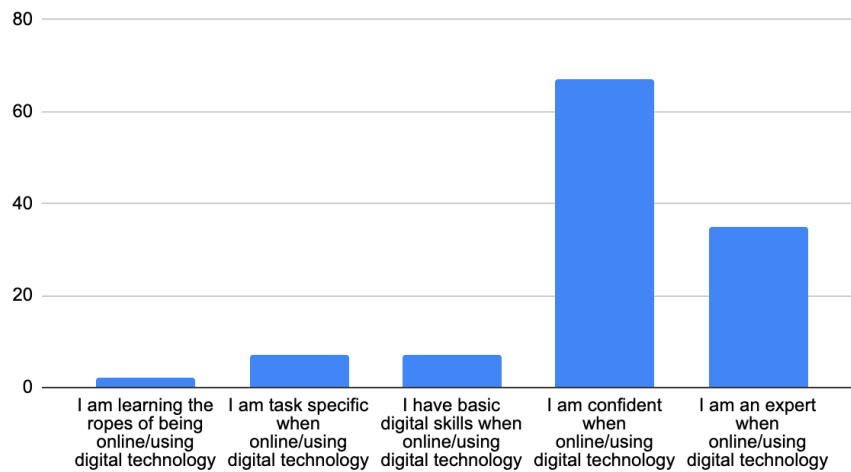
Bar chart: Reported digital skills level