

Expert Search Early Adopters Pilot Project

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Emily Hurt - Lancashire Teaching Hospitals NHS Foundation Trust

Vicky Price – Vicky Price Consulting Ltd.

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Expert Search Early Adopters Pilot Project

In mid-September 2020, Health Education England (HEE) began a pilot to understand how best to help library and knowledge services (LKS) in England move from using Healthcare Databases Advanced Search (HDAS) to using provider interfaces (EBSCOhost, Proquest and Ovid).

The pilot spanned six months, during which time participants were asked to switch from HDAS to using provider interfaces for the searches they carried out. They were offered training sessions and reference management software where requested. There were several data collection points across the pilot, with surveys and after-action reviews providing detailed information about the experience and challenges participants encountered. The following report is a summary of the qualitative and quantitative data collected, as well as recommendations for actions to take to ease the transition for other LKS in the run up to March 2022 when HDAS will be retired.

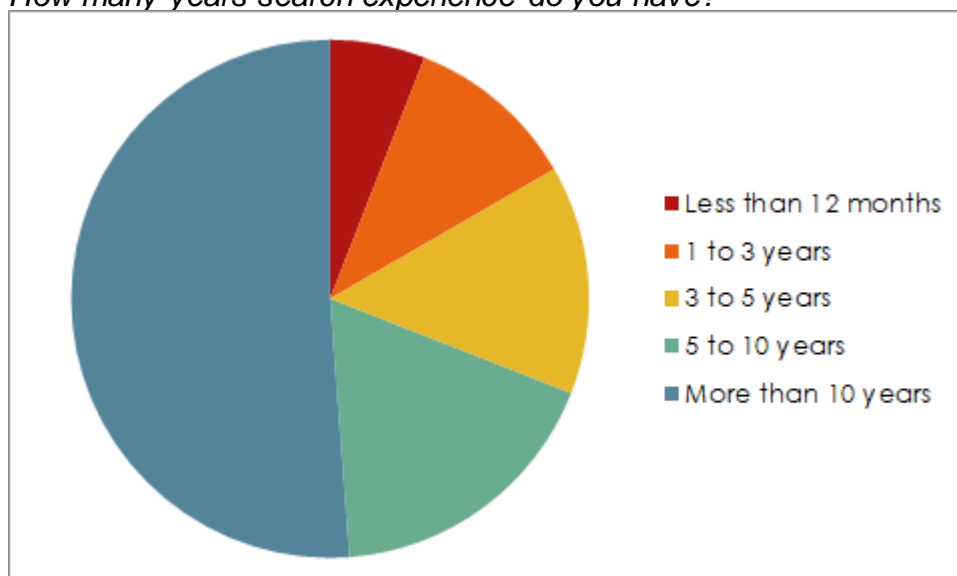
Pilot participants

Four regional groups were successful in their applications to become part of the pilot: East Midlands, Greater Manchester, East of England, and Kent, Surrey and Sussex. A total of 34 individual services took part. Two services withdrew from the pilot for staffing reasons, where managers were either redeployed or vacated their posts, leaving 32 services included in the final analysis for this report.

Participant demographics

There were 98 LKS staff taking part in total. Participants were asked to complete a baseline demographic survey to provide a snapshot of levels of experience, as well as capture what they perceived as the potential benefits and challenges of moving to provider interfaces. There was a response rate of 86% (n=84).

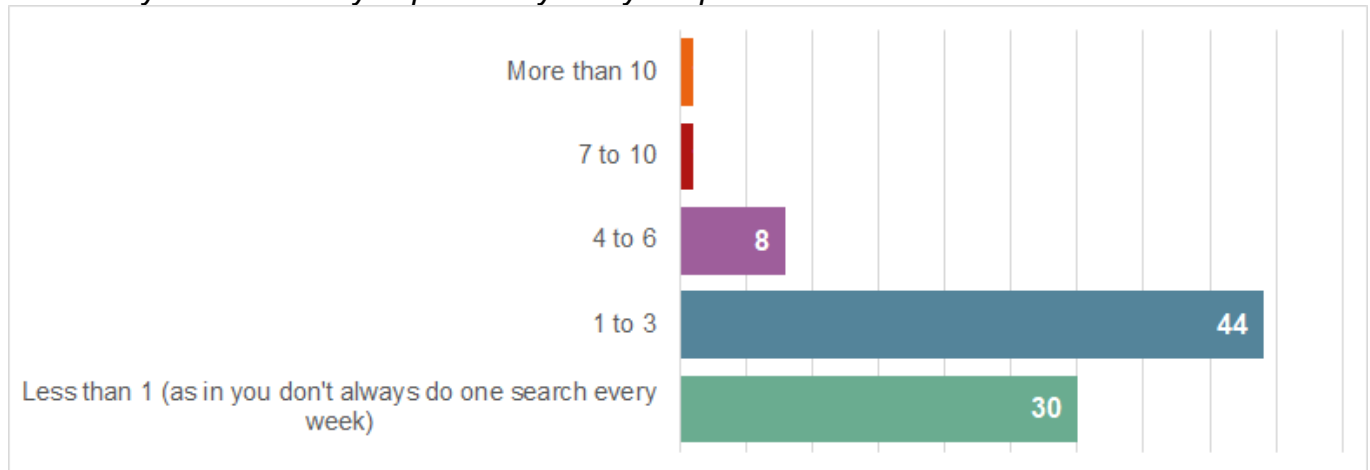
How many years search experience do you have?



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Just over two thirds of respondents had five or more years search experience (n=58), with just over half having more than ten years search experience (n=43).

How many searches do you personally carry out per week?



The high proportion of participants who carry out less than one search a week may be reflective of the number of library service managers who were taking part in the pilot.

When asked *'What do you expect to be the greatest challenges of moving away from HDAS to provider interfaces?'* Responses were analysed for themes and six were identified, in order of frequency:

- *Challenges relating to search results*
- *Challenges relating to using new products*
- *Challenges relating to helping library users*
- *Challenges relating to time*
- *Challenges relating to provider interfaces*
- *Challenges relating to using multiple interfaces*

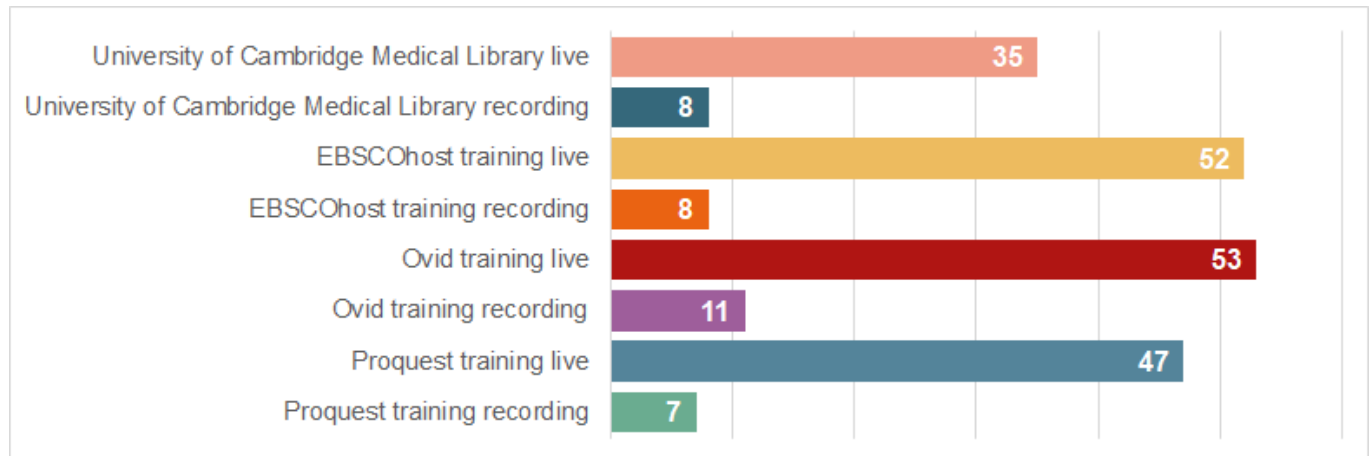
Participants were also asked: *What do you foresee as the biggest potential benefits of moving from HDAS to provider interfaces?* For this question there were nine themes identified, listed below in order of frequency:

- *Benefits relating to stability of the search interface*
- *No benefits*
- *Benefits relating to search results*
- *Currently unsure of benefits*
- *Benefits relating to the skills of library staff*
- *Benefits relating to library users*
- *Benefits relating to the development and improvement of interfaces*
- *Benefits relating to reference management software*
- *Benefits relating to the functionality of interfaces*

Participants mentioned challenges twice as many times as they mentioned benefits.

Training and skills development

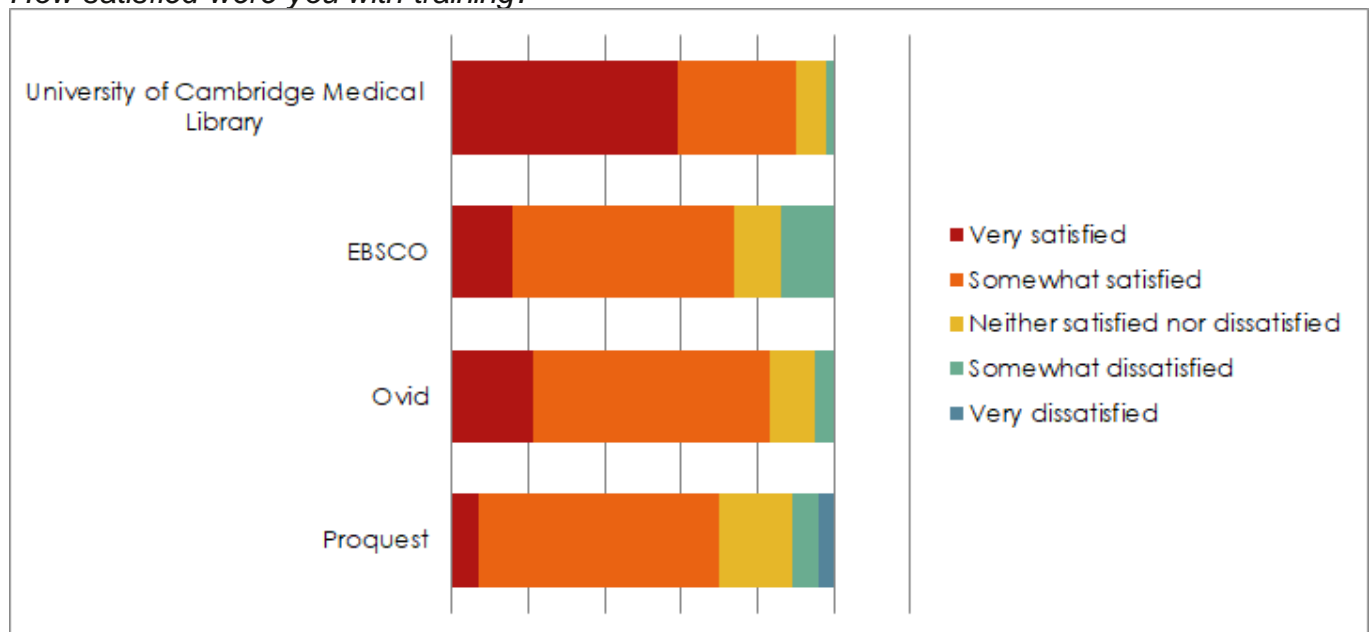
Training was offered remotely by all three interface providers (EBSCO, Proquest and Ovid). The team at University of Cambridge Medical Library also very kindly provided online training for all interfaces and Endnote. This was open to all pilot participants, regardless of geographical region. All of the training sessions were recorded and made available to those who couldn't attend the live sessions. The attendance figures for each provider were as follows:



Satisfaction with training

The training evaluation survey was completed by 68 participants (69% response rate), with 93% (n=63) having attended some training as part of the pilot.

How satisfied were you with training?



Levels of satisfaction were highest for the training provided by the University of Cambridge Medical Library. When asked to elaborate on satisfaction levels, respondents highlighted the benefits of having training from fellow librarians, rather than provider representatives.

'The Cambridge training was in a lot of ways the best - from a user's perspective of 'this is how I do it and this is how I get around what it can't do' rather than a

sales perspective of 'this is what the software can do, but I won't talk about what it can't do"

There was a feeling that the providers were demonstrating what their interfaces could do, whereas the team from Cambridge were showing participants how the interfaces worked.

'I preferred the UoC training because it was based in practice. The librarians know the kind of searches we deal with. We could ask them questions which they could answer based on their experience of having to do proper searches for clinical staff.'

When asked if the training meant participants felt ready to switch from HDAS to provider interfaces, 51% (n=32) said yes and 49% (n=31) said no. Of those who answered 'yes' 38% (n=12) said that the training sessions were a good starting point, and that they were ready to dive in and start practicing. Another 34% (n=11) said they already had some familiarity with provider interfaces and so the training acted as a refresher. The responses for those who answered 'no' were more difficult to categorise. There was a feeling that the training on its own was not enough, that people needed time to consolidate their learning and practice. There were also comments about the need for follow up sessions so that there was an opportunity to ask questions and share experiences after the initial sessions.

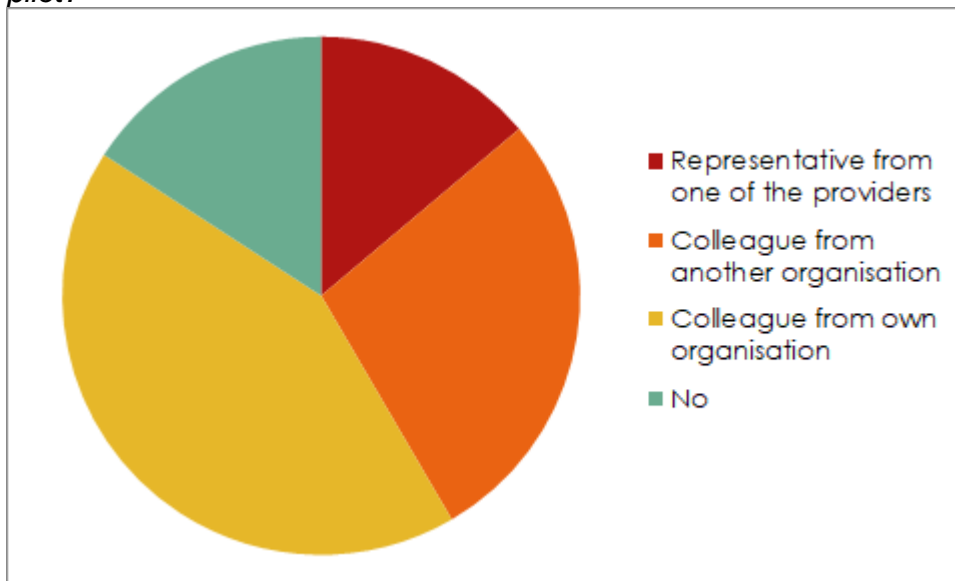
Post-training support

There was no formal support provided for participants once the training had taken place. A section of the Knowledge for Healthcare website was used to collate recordings of training sessions and help sheets etc. (<https://kfh.libraryservices.nhs.uk/resourcediscovery/database-native-interfaces/#adopter>). Regional groups approached support in different ways including:

- Creating an MS teams sharing space that included several channels/spaces for discussion, sharing and learning.
- A YouTube channel to create a training list that allowed access to training videos.
- Regular weekly meetings that allowed space for updates, checking in, discussion, outlet, support etc.
- Dedicated LibGuides, mainly to act as a hub to signpost to other resources.
- Using a specialist network as a forum to discuss the pilot, where members were able to share best practice and raise queries that were fielded by a regional group lead and answered by the pilot project team.
- Reflective sessions towards the end of the pilot that were facilitated by a regional group lead and used Knowledge Management tools to help capture learning.
- Informal support from colleagues via email.

Participants were asked whether they approached someone for help with using the provider interfaces at any point during the pilot. The majority had, with 77% (n=52) using one or more sources of support, predominantly colleagues from their own organisation or within their wider network. When asked if they had used supplementary training materials from provider websites, 62% (n=42) had.

Did you need to ask someone for help with using the provider interfaces at any point during the pilot?



Recommendations for training roll out

The timing of training was key for participants, and unfortunately the project did not arrange sessions with enough room for consolidating new skills and a chance to practice before switching to provider interfaces. Future training programmes should be launched as soon as is feasible, and offered repeatedly to ensure that people have multiple opportunities to attend sessions. The participants in the pilot found that once they began using provider interfaces for searching, they had further questions and queries. These were a combination of technical queries, as interface functionality wasn't necessarily set up to meet user requirements, and more general instructional queries that were about how best to use interfaces. To help reduce the number of technical queries there is work that can be done to improve the provider interfaces and ensure they are fit for purpose for a skilled library workforce (see specific recommendations on p.25). For more general queries around best practice, there is the scope for HEE to facilitate the sharing of hints and tips via a variety of methods.

With regards to the content of training, both sessions by providers and library staff had value. Trainers from interface providers sometimes struggled to understand the needs of the pilot participants and had difficulty pitching content at the right level. However, they were able to answer questions about interface functionality. Trainers from University of Cambridge Medical Library were far more in tune with what their audience wanted, but sometimes were unable to answer questions from participants about different options within interfaces if they were features that they didn't use frequently.

The participants of this pilot were a very specific professional group within NHS LKS, in that 69% of them had 5+ years search experience. According to the HEE national statistics return for April 2020, there are 1149 NHS LKS staff across England. 38% of these staff are employed at bands 1-4, and it is conceivable that the majority of this group will not use databases for complex searches at all. Therefore, there will be a market for basic training sessions, as well as a requirement for 'Expert search' sessions to meet the needs of those staff who do undertake comprehensive searches on a regular basis. A combination of these can be offered by provider trainers and an existing library service that routinely uses provider interfaces for searching.

The finalised training offer needs to be communicated to the NHS LKS community repeatedly, with a clear outline of what is available and how to take part in sessions. There also needs to be communication about the time implications involved in switching, so that services can allow space for staff to consolidate training and practice searching.

Search experience

There were two phases of search data collection:

Phase one: All searches carried out in a short period before participants switched to provider interfaces (n=68)

Phase two: Selected searches carried out after the participants switched to provider interfaces (n=296)

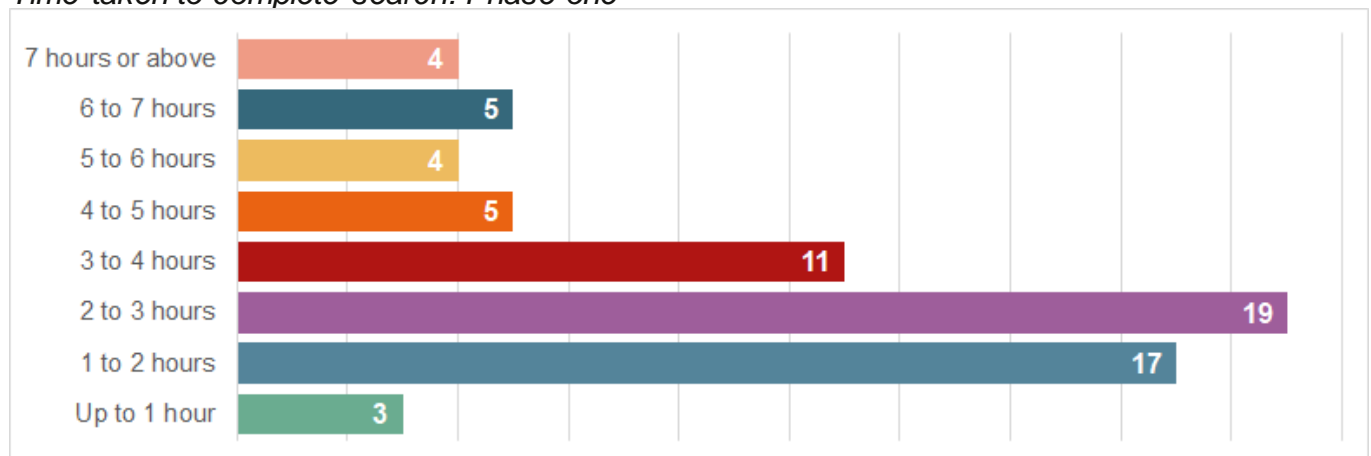
Phase one was an opportunity to get a snapshot of search behaviour pre-switch and provide a small data set to compare and contrast with post-switch searches. Responses were low as the data collection period was just 4 weeks long and some services had already switched to provider interfaces.

Phase two was a longer data collection period (12 weeks), and participants were asked to choose one day a week where they completed the phase two form for the search(es) they carried out that day. This sampling technique was employed to ensure data collection didn't become too onerous or an administrative burden on already busy individuals.

Phase one

The 68 searches were from 17 different services and covered a broad spectrum of topics. Participants reported that 51% (n=35) of searches were carried out over multiple sessions and 49% (n=33) carried out in a single session. The time it took to complete a search varied between 20 minutes and 15 hours. The average time to complete was 3 hours 9 minutes, with most taking between 1-2 hours or 2-3 hours (25% and 28% respectively).

Time taken to complete search: Phase one



Resource use showed that 94% of searches used at least one database via HDAS (n=64). The three most frequently used resources were HDAS Medline (75% n=51), HDAS CINAHL (62% n=42) and HDAS EMBASE (49% n=33).

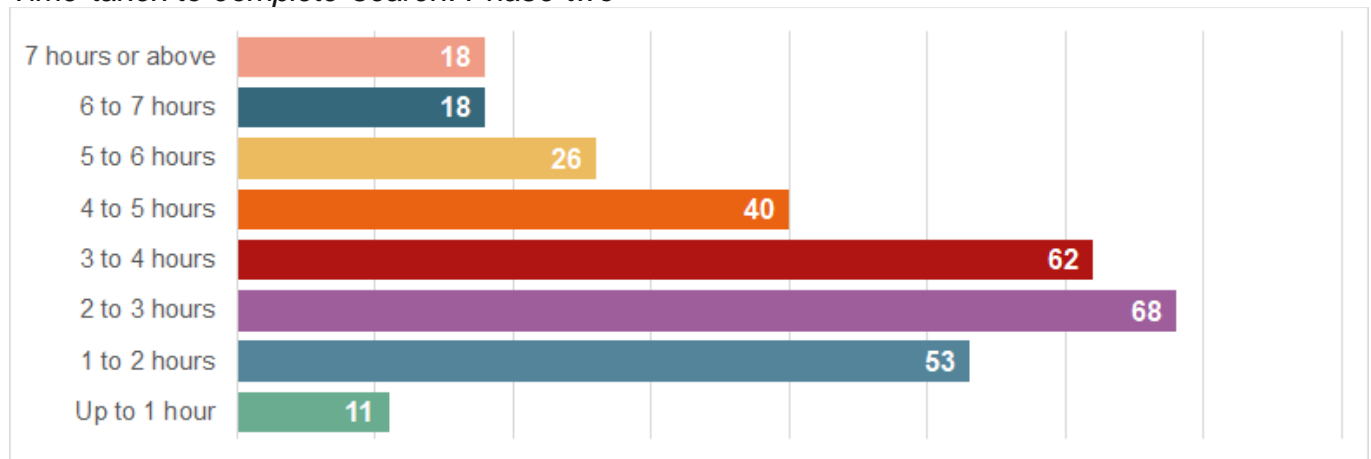
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Finally, we asked people to rate their search experience a star rating, where 1 is poor and 5 is excellent. The average rating was 3.7, with 1% rating 1 star (n=1), 1% rating 2 stars (n=1), 34% rating 3 stars (n=23), 42% rating 4 stars (n=29) and 21% rating 5 stars (n=14).

Phase two

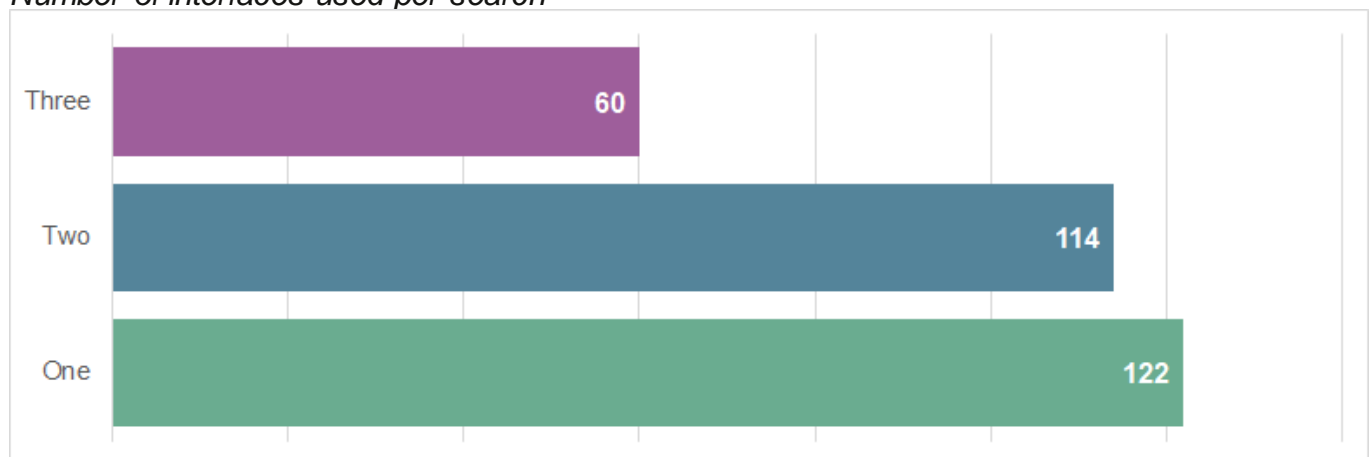
Data on 296 searches from 32 different services was collected. A greater number of searches were carried out over more than one session, with 57% (n=168) taking place over multiple sessions and 43% (n=128) in a single session. Time to complete a search varied between 20 minutes and 17 hours. The average was 3 hours 18 minutes, with most taking between 2-3 hours or 3-4 hours (23% and 21%).

Time taken to complete search: Phase two



The three most frequently used resources were Ovid Medline (70% n=206), Ovid EMBASE (61% n=181) and EBSCO CINAHL (40% n=118). Where searches were carried out using a single interface (n=122), 62% used Ovid (n=75).

Number of interfaces used per search



As part of the qualitative data collected, participants were asked '*Thinking about the overall search experience, what worked well?*' Responses were grouped together by theme, and the following were the top seven, listed in order of frequency:

- *The use of reference management software* – for amalgamating results, de-duplicating, and producing an output for the end user.

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- *Subject headings* – ease of use, the way they are displayed, finding relevant terms to use.
- *Using one interface* – where the search is carried out in multiple databases but in a single provider interface.
- *The search topic* – the search was simple as the topic was straightforward (therefore not related to the interfaces or other aspects of the search experience).
- *Interface functionality* – specific features in interfaces that added value.
- *Developing skills or increasing confidence* – the searcher felt they were becoming more adept at using the interfaces.
- *Interface reliability* – websites didn't crash.

Participants were then asked '*What didn't work well? What issues or challenges did you face?*' The following were the top seven, again listed in order of frequency:

- *Difficulty producing outputs for end user* – creating a document of a standard suitable to share was problematic for some, whether using reference management software or provider outputs.
- *Time* – searches, collating results and formatting outputs took longer.
- *Reference management software* – problems importing, errors in records, unable to format in desired style, unable to sort in date order, differences in functionality between desktop and web version.
- *Links to full text* – inconsistency in the way they were displayed, unable to tell from the reference whether full text was available or not, links often absent in outputs, didn't always pull through when references exported to reference management software.
- *Unable to save / no autosave / timed out* – search activity lost.
- *Deduplication* – interfaces either didn't offer deduplication or didn't deduplicate adequately, reference management software didn't deduplicate adequately, resorting to deduplicating by hand.
- *Issues with accounts* – cumbersome having to log in to multiple accounts if searching across providers, some accounts having limited functionality.

Again, we asked people to rate their search experience using a star rating, where 1 is poor and 5 is excellent. The average rating was 3, with 10% rating 1 star (n=29), 18% rating 2 stars (n=54), 42% rating 3 stars (n=126), 21% rating 4 stars (n=61) and 9% rating 5 stars (n=26).

Recommendations for improving the search experience

It became apparent very early on during the pilot that not all library services had the same default settings behind the scenes for provider accounts. Participants were frustrated with technical issues that occurred as a result, with some being unable to create personal accounts, having limits placed on the number of references they could download, or not having full text access to their own e-journal holdings. The project team worked with providers to resolve some of these issues, but it is expected that there may be some similar problems as other services begin to use the interfaces. LKS staff should be encouraged to test out functionality with all three interfaces well in advance of HDAS retiring, so that any problems can be fixed in a timely manner. Further recommendations are reliant on improvements being made to the functionality of provider interfaces, and are detailed on p.25.

Reference management software

Introduction

The reference management software market has developed significantly in recent years, with the development of open source software (e.g. Zotero) and software that is made freely available to end users (e.g. Mendeley) in addition to licenced software. There are also different delivery models.

A review was undertaken to determine which software to provide to pilot participants and which to recommend for national roll-out. Products reviewed were:

- EndNote
- RefWorks
- Zotero
- Mendeley

Pilot participants were also asked to indicate a preference for software they would like to trial and this was factored in when deciding which software to purchase for the pilot.

Overview of products and delivery models

Endnote

EndNote is provided by Clarivate and the UK distributor is AlfaSoft.

Endnote is a desktop client application which must be installed locally. Each licence key allows for installation on up to three PCs. There is a free web version which has reduced functionality but which does enable licensed users of the desktop version to share EndNote reference libraries.

Volume discounts are available for purchase of the desktop licences but there is no subscription model for EndNote Web.

Self-service support and training materials are available on the Alphasoft website and on the Clarivate website at https://clarivate.libguides.com/endnote_training/home. Individual licence holders may log support requests via the AlphaSoft service desk at <https://support.alfasoft.com/hc/en-us> or the Clarivate website at <https://support.clarivate.com/Endnote/>.

Alphasoft run 6-hour training sessions for individuals at a cost of £360 per session and can provide bespoke training for groups at a negotiated price. Free Clarivate training sessions may be booked at: <https://clarivate.com/webofsciencegroup/training/?wpv-training-class-product=endnote>. Timings are optimised for US users.

RefWorks

RefWorks is provided by Ex Libris (a Proquest Company).

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RefWorks is only available via a web browser and annual, institutional subscription. There is no desktop client to install and no option for individual subscriptions. On first use of an institutional subscription, users sign up using their email address; sign on via OpenAthens account is also an option for authentication. Users are assigned to a RefWorks "Institution" (which may be a single organisation or a consortia) managed by one or more administrators via a web interface.

Pricing is based on volume banding for eligible users.

User Support is provided via the RefWorks support portal at <https://knowledge.exlibrisgroup.com/RefWorks>. There is also a RefWorks LibGuides site at <https://proquest.libguides.com/newrefworks>. Support requests may be submitted via an online form at <https://supportcase.exlibrisgroup.com/s/refworks> or via a live chat box (when agents are available, typically Monday to Friday 08:30 - 17:00 in the US Central time zone). System administrators must be registered for an account with the Ex Libris Support portal in order to submit a support case.

Training is provided as part of the product subscription fee and targeted training can be made available on request.

Zotero

Zotero is open source software which has been developed and is maintained by the [Corporation for Digital Scholarship](#), a non-profit community dedicated to the development of software and services for researchers and cultural heritage institutions.

It is available as a desktop client for Windows, Mac and Linux and as a web client.

Although the software is free, there is a charge for storage above 300MB and for service support. Individual subscriptions range from US\$20 to \$120 per annum, and institutional plans start at US\$2000 per 500 users and US\$0.40 per user thereafter.

User support is provided via a community-led support forums. No training is offered, but there is extensive documentation to support self-directed learning on the Zotero website, along with training materials produced by Zotero institutional users.

Mendeley

Mendeley is provided by Elsevier as part of their suite of research products.

It is available as a desktop client for Windows, Mac and Linux and as a web client. Individuals may sign up for free, with upgrades to premium options available when the free storage limit of 2GB is exceeded. Collaboration is possible by up to 5 groups of 25 users.

There are no institutional subscription options.

User support is provided via the Elsevier Support Hub, which covers all Elsevier products, and the Mendeley Support Center. A knowledge base of product updates and FAQs is at <https://service.elsevier.com/app/home/supporthub/mendeley/> and a large collection of user guides, including videos is available at <https://www.mendeley.com/guides>.

Mendeley has a supported developer community and a network of Mendeley Advisors, registered users who have become accredited Mendeley experts.

Pilot set up and software distribution

The pilot evaluated two contrasting modes of service delivery, one entirely web-based and the other primarily desktop client-based. Pilot participants had a choice of either EndNote or RefWorks, both of which were purchased centrally.

Participants were also encouraged to sign up for an individual Zotero account and trailing this as a secondary system. Mendeley was discounted: as there is no institutional licence option, it was considered unlikely to be suited to central procurement and distribution.

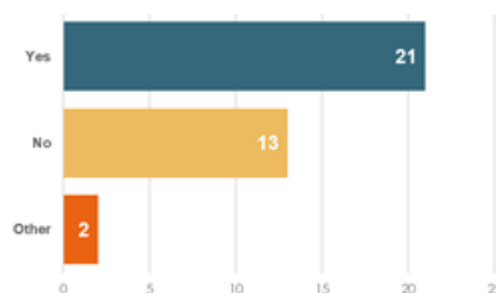
here participants expressed a pre-pilot preference for a particular product, this was overwhelmingly in favour of EndNote, which was also the most popular of the reference management solutions used prior to the pilot.

Pilot User Evaluation

The user evaluation comprised a survey of participants who had made use of either EndNote or RefWorks during the pilot period. Questions were designed to draw out issues, challenges, and preferences. 36 individuals (37% of pilot participants) completed the survey, a response rate reflecting the timing of the survey (this was the final data collection exercise of the project) and potentially levels of engagement with the software itself.

Did you make use of reference management software prior to this pilot?

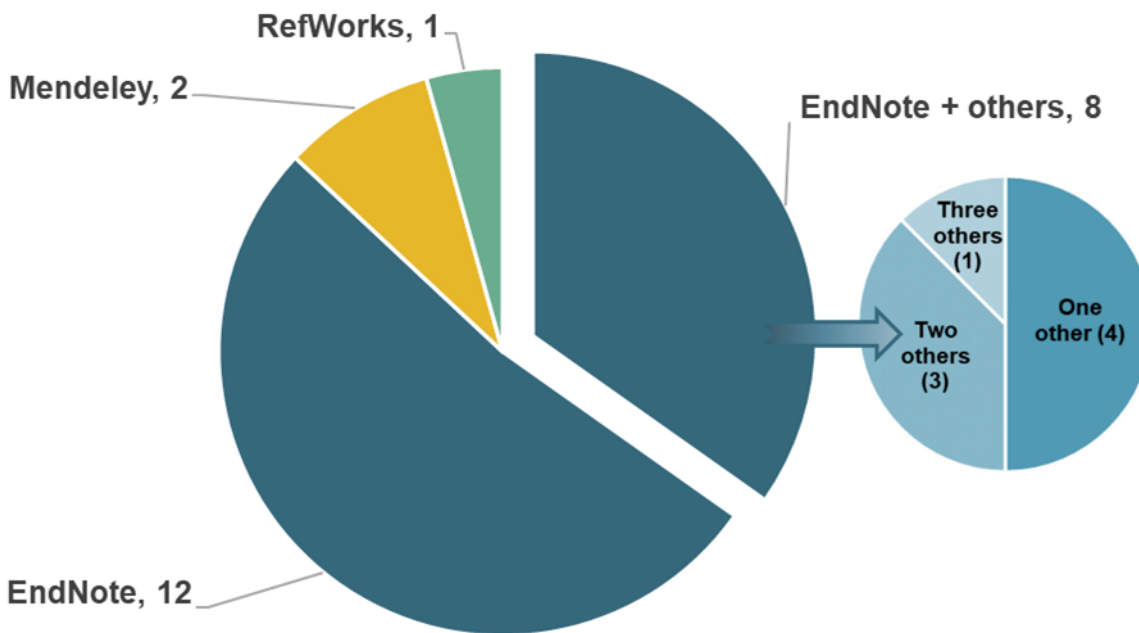
Most of the respondents ($\frac{23}{36}$) had used reference management software prior to the pilot. The two who chose "other" had also used reference management software; one not for many years and one not for providing literature search results.



If yes, which reference management software did you use?

The vast majority of respondents ($\frac{20}{23}$) had previously used EndNote with a minority using either Mendeley or RefWorks. Of the 23 EndNote users, eight were also using other reference management software.

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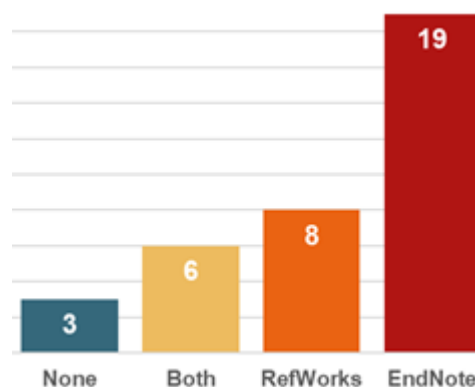
Why did you choose to use this reference management software (select all that apply)?

The most commonly given reason was that it had been provided by the organisation worked for; the next most common reasons related to functionality, cost and recommendation by a colleague. Reasons in the “other” category included exporting in different formats and use so that support could be provided to other users.



Which reference management software did you use during the pilot?

EndNote was used by a total of $\frac{25}{36}$ respondents, of which six also used RefWorks. RefWorks was used by $\frac{14}{36}$ respondents, of which six also used EndNote.



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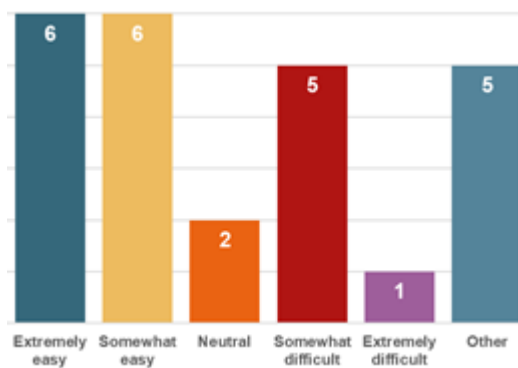
If you have not used any reference management software as part of this pilot, please state why.

Three respondents reported not using any reference management software: one had decided to “manage without”, one was still using EndNote as part of a legacy agreement, and the last was uploading results into KnowledgeShare so a reference manager was not considered necessary.

Feedback on EndNote

How easy was it to install the EndNote Software?

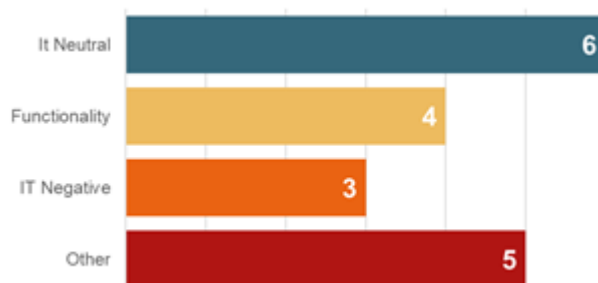
EndNote users mostly found it extremely or somewhat easy to install the software, with only 6/25 reporting it to be somewhat or extremely difficult. Of the five “other” responses, one person had EndNote installed prior to the pilot and the other four were not involved in the installation process.



It is worth noting that three respondents using RefWorks only were doing so as they had, or anticipated having, issues gaining permission or IT support to download it.

Please describe any issues encountered setting up EndNote.

Half of commenters reported that their IT department installed EndNote. Of that half, two-thirds stated there were no issues; the remaining third described issues around the length of time it took to get the software installed, and one issue with the internal process. Around a quarter of commenters had issues with functionality, mainly focused around the usability of the output. Finally, “other” issues included: concern around the number of licenses purchased being enough; speed, as the library was stored on the C drive; lack of training; the need for a personal account when using the desktop app; and separation of processes (licence details controlled by the library and software installation controlled by IT) making it complicated.

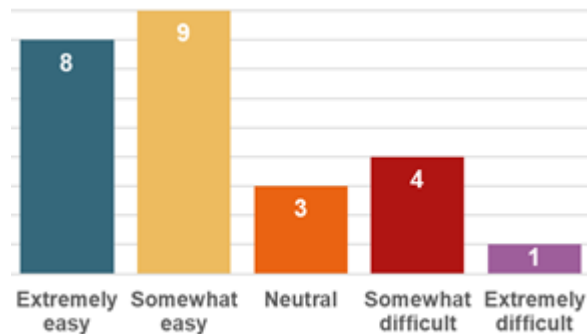


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How easy was it to start using EndNote?

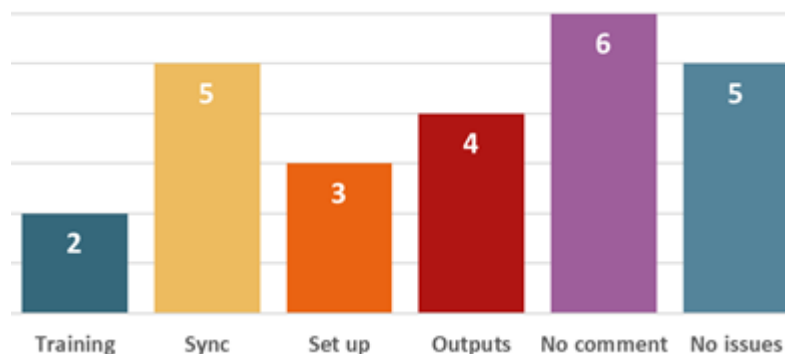
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The overwhelming opinion appears to be that, once installed, it was not difficult to get started using EndNote with around two-thirds reporting that it was either extremely or somewhat easy.



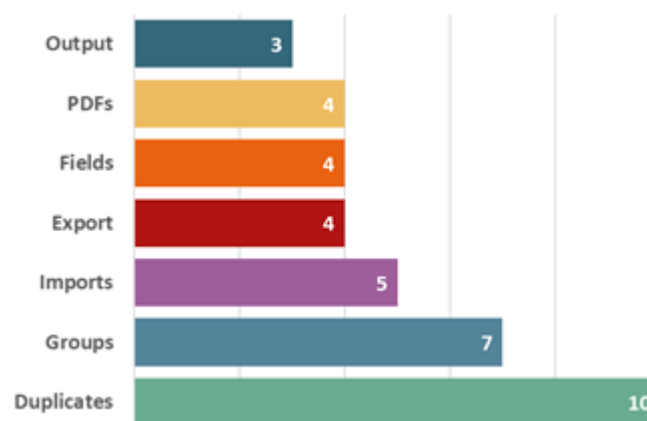
Please describe any issues encountered using EndNote.

¹¹/₂₅ respondents did not comment or had no issues, the two main negative points raised related to syncing and outputs. There were problems noted both with syncing between different machines and syncing from web to desktop. The main problem with outputs was being able to format them in a way that was considered useful to respondents.



What do you like about EndNote?

There was a myriad of responses to this open-ended question, but some common themes. The ability to de-duplicate results was frequently mentioned, along with being able to organise references into groups and share these. Ease of importing references from a range of databases, ease of export, being able to set up and customise fields, the ability to upload pdfs of papers, and having multiple output styles (to which respondents could also add their own) were also mentioned.



What do you dislike about EndNote?

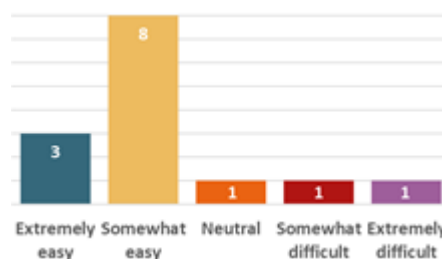
While there were fewer dislikes than likes for EndNote, the dislikes were more disparate, so themes were harder to pick out. The most common dislike was around outputs, which could be jumbled and were “not what we or our clients want”. It was mentioned more than once that outputs were not comparable with that which HDAS produced. Issues around functionality were raised - mainly there being so much functionality that it was easy to become overwhelmed and not all functionality being consistent between desktop and web. Syncing between web and desktop versions was also perceived to be overly complicated.



Feedback on RefWorks

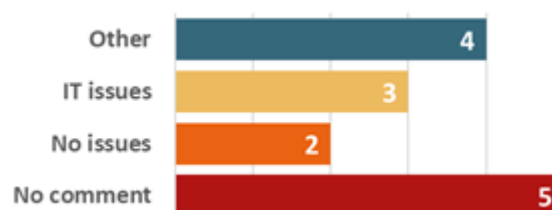
How easy was it to get set up with RefWorks?

As with EndNote, the overwhelming majority of users reported RefWorks being either extremely or somewhat easy to get set up with.



Please describe any issues encountered getting started using RefWorks.

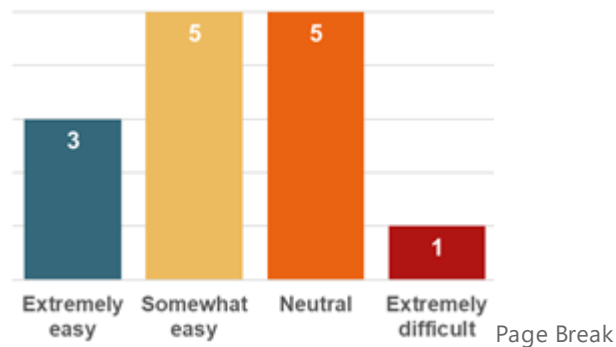
Half of the respondents either had no comment to make or no issues to report. Issues that were reported were either linked to IT and difficulty with allowing plugins, or to RefWorks running slowly.



How easy was it to start using RefWorks?

Only one respondent found it extremely difficult to start using RefWorks, with just over half finding it extremely or somewhat easy and the remainder feeling neutral about the process.

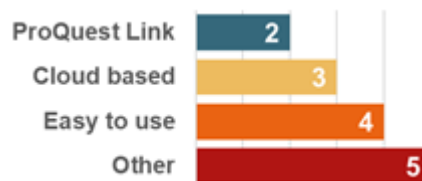
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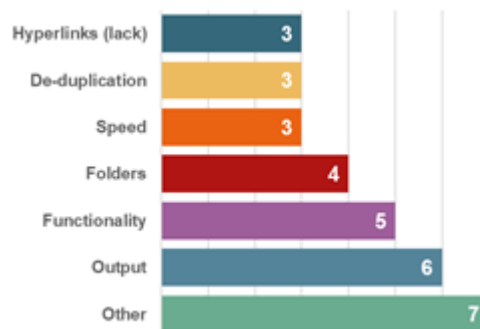
What do you like about RefWorks?

The main positive aspects reported around RefWorks were the ease of use and the fact that it is cloud-based. The integration with ProQuest, which allows searcher to sync their “My Research” account for saving and exporting searches, with their RefWorks account, was also brought up more than once. Other comments included: a useful plug-in browser, the citation view, folders, saving references and being able to save references from open internet pages.



What do you dislike about RefWorks?

Over a third of respondents commented that output formats were not useful and needed amendment or that functionality was “clunky” and lacking in useful features. There were some comments about folders being difficult to use, RefWorks being slow and de-duplication being unwieldy. Lack of hyperlinks in the results output was an issue (as it was for EndNote as well). Other comments were made around a perceived lack of training and support, difficulty in using the bookmarklet, imports not containing all the required data, and multiple copies of RefWorks opening when importing serially.



Any further comments?

There were only a few further comments, including around lack of training and support, the pilot not providing enough time to get the best results from the software, and reference management software being less satisfactory than HDAS.

Considerations for national implementation

Functionality

Taken together, the data from the user survey, feedback from the search reports, and feedback from colleagues in Scotland and Wales point to a key set of functionality issues. These are summarised below, with potential mitigations.

Software	Issue	Mitigation
Endnote	Inability to pull full text links through from search results	Link Resolver holdings integration
RefWorks	Inability to pull full text links through from search results	Link Resolver holdings integration
EndNote	Difficulty generating an HDAS-like results set	Generate a standard CSL output style (based on work already done by Matt Holland) and signpost to EndNote users for local import.
RefWorks	Difficulty generating an HDAS-like results set	Generate a standard CSL output style (based on work already done by Matt Holland) and import to RefWorks. Make this an NHS house style available by default to all service users.
RefWorks	Slowness	Limited ability to influence regarding general network speeds. Review system performance SLA with Ex Libris and monitor case numbers via incident management reports.
EndNote	Slowness	Limited ability to influence regarding general network speeds.
EndNote	Syncing between desktop client and web	Targeted training. Product feedback to vendor.
EndNote	Inconsistency between web client and desktop	Targeted training. Product feedback to vendor.
Refworks	Deduplication	Targeted training. Product feedback to vendor.

Costs

For EndNote, there is a cost per licence, with slightly discounted prices available for volume purchasing. The licence fee covers the cost of the current version of the software in perpetuity; those wishing to upgrade to the newest version of the software need to purchase a new licence. This means that any purchase made centrally will potentially need to be renewed whenever the product is upgraded.

It is estimated that to provide EndNote to all NHS library staff who routinely undertake searches would cost in the region of **XXXXXXX**. This cost would be re-incurred for software upgrades. Training costs would be additional to this.

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An annual RefWorks subscription for up to 1500 users would cost **XXXXXXX**. An annual subscription for up to 5000 users - which would cover all NHS OpenAthens accounts with a role of “library staff” and allow extension to advanced search users in non-library roles - would cost **XXXXXXX**.

Implementation at scale

EndNote would need to be distributed to local library services and installed (generally within the support of local IT) onto Trust PCs. As a web-based ‘Software as a Service’ (SaaS) product, RefWorks would be much easier to implement for a distributed national user base.

The key cost and implementation issues associated with both EndNote and RefWorks are summarised below, with potential mitigations.

EndNote

Issues	Mitigations
Endnote Client will need to be installed on Trust PCs	Central guidance can be issued to IT depts by HEE in order to support local installation.
Per licence cost means that central licensing beyond the library is unlikely to be possible.	End users requiring Reference Management software can be sign-posted to EndNote Web (free). An option for additional purchase at Trust level (in order to support roll out to additional users) could be facilitated via a central call off-contract.
Bespoke Training for NHS user community will come at additional cost.	Budget for training within the total cost of the service.
No way to see usage data centrally.	EndNote usage could be self-reported via central data collection. Explore options for reporting on user sign up for EndNote Web
No option to provide a reference management service to users who aren't directly serviced by a local library service.	These end users requiring Reference Management software can be sign-posted to EndNote Web (free) or other self-registered reference management software.

RefWorks

Issues	Mitigations
Not all Athens users will need to access Reference Management software so access will need to be granted to a subset of Users,	Allocate to Athens users by role (using the role attribute) to restrict to library staff.

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otherwise we will pay a large fee for a service most Athens users won't need to use.	
The service should be available to NHS users who need it access it, regardless of role	Use the Athens "entitlement" attribute to create a RefWorks entitlement option. Adapt the Athens registration process to identify relevant users and assign this attribute.

Conclusions

There are benefits and disadvantages to both evaluated services. EndNote has a higher user satisfaction rating amongst pilot participants and is the more robust and fully-featured solution, reflecting its position as a long-term market leader. As a desktop client, it is not dependent on a consistent network connection and may therefore be more robust. The key challenges with EndNote would be the mechanism for distribution of licences, the likely dependence on Trust IT departments for installation, and costs.

Being web-based, RefWorks is more scalable and access and usage is easier to monitor, but it has fewer features, and some participants commented on slowness and instability when handling large outputs.

Both services would require additional work to make full-text linking from outputs available as standard and to create a sharable, standard output format in CSL format (work on this has already commenced).

It is suggested that a hybrid approach could be optimal.

A national subscription to RefWorks would deliver a base level of service to all eligible NHS users and could be managed and maintained centrally. This would be a cost effective and relatively low maintenance way of making a service that can be configured to provide as 'HDAS-like' an output format as is possible. This would also enable HEE to provide a service to users beyond library staff.

In addition, it should be possible to make central provision for local purchasing of EndNote at an advantageous price, so that NHS library staff and others engaged in very frequent and/or complex searching could benefit from having the more powerful tool available.

Many universities take a 'mixed economy' approach to reference management software to cater for a range of levels of need. Our pilot revealed that there is a wide variation in expert search practice amongst library staff and services, with some delivering high volumes of searches undertaken by staff in specialist roles, for whom a powerful application like EndNote would be an essential tool, and others with much lower search volumes, where RefWorks would be adequate and installation issues and the functionality sophistication of EndNote could serve as a barrier.

Learning from Scotland and Wales

Reference management software

NHS Education for Scotland (NES) funds a national subscription to RefWorks, ExLibris having been the only supplier to respond to the tender for a reference management service for the NHS in Scotland. One Health Board also funds a local EndNote subscription.

The NES Team is aware of some issues with RefWorks performance and processing of very large results sets, but report that the service meets the requirements of the bulk of library users and consider the service to be very cost effective. Access to user support was a challenge in the early days of the contract, but has improved.

There is no central provision of reference management software for the NHS in Wales. EndNote is purchased locally by some organisations. EndNote training was been investigated, but Alphasoft's costs were considered prohibitive, so there is reliance on peer-to-peer training. Some library services use KnowledgeShare for reformatting results.

Service support for expert searchers

In both Scotland and Wales, a central support desk is provided. In Wales this is provided by the e-Library for Health Team via a ticketed helpdesk system. Colleagues from Wales stressed the importance of having the service desk staffed by librarians who are familiar with the databases. They also highlighted the benefits of cross-referral from the central service desk to local library services.

In Scotland, the NHS Education for Scotland Knowledge Services Group provide a central service desk via a monitored email box. This is staffed on a rota basis by a team of four. Colleagues stressed the importance of having dedicated time for this. Referral of queries from end users to their local library service is a key component of this service.

Single interface alternatives to HDAS

During the project, time was spent with the HEE DiTAG Team (which manages requests for new digital and technology projects) to consider requirements for a potential new service to replicate the single interface advanced search functionality provided by HDAS. This included a review of the findings from the advanced searcher user discovery research undertaken on behalf of HEE by Lagom Strategy in 2020.

Key Requirements include:

- Explicit search strategy
- Uniform outputs
- Subject headings mapping
- Simple search across multiple resources
- Advanced search across multiple databases
- Advanced search on specific databases

There is appetite within HEE to explore AI-driven search tools. The challenge of applying AI in an expert search context is that, when searching structured bibliographic databases, an

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essential requirement is that search strategies and search terms are explicit, documentable and replicable. AI is not likely to deliver these key requirements and it is recommended that HEE should instead explore how AI-enhanced searching to augment the national discovery service currently being implemented by the HEE.

For expert searchers, it would more effective to invest in support and training for use of the provider interfaces and take advantage of the competitiveness in that market, and the now direct relationship between database suppliers and expert searchers, to influence interface development.

After action reviews

Five After Action Review events for the library teams involved in the pilot were held during March 2020, facilitated by the HEE Knowledge Management Team. All 32 LKS were represented, with at least one member of staff from each service attending a session. In total across five sessions there were 63 participants (64% of pilot participants).

When asked '*What can we learn from this to improve the experience for others?*', themes included:

- Training for LKS staff: this needs to be rolled out well in advance of HDAS retirement.
- Support for LKS networks: there should be collaborative space and peer support.
- Communication: clear messaging is required to ensure there is shared understanding and to manage expectations and there must be a swift responses to queries.
- Reference management software: IT departments will need to be on board if there is national roll-out; a shareable standard output style should be created.
- Training for end users/ training materials: there should be a single source of information for help and access to the native interfaces, and nationally-provided training materials available for local adaptation.

Recommendations

Training

1. Work with interface providers to help them understand the intended audience(s) for training and their development needs.
2. Work with trainers from interface providers to ensure they deliver a rolling programme of online training which covers basic and advanced searching of the interfaces.
3. Commission a set of 'Expert Searcher' training sessions for LKS staff who carry out complex searches. It is recommended that these are provided by a library service that routinely uses provider interfaces for searching.
4. Communicate guidance about the amount of time LKS staff should consider allowing for transition to provider interfaces, from attending initial training through to moving permanently away from HDAS.

Technical

5. Request a 'Title / Abstract' search field in all provider interfaces.
6. Work with providers to produce a standard 'house style' output across all interfaces and available in Microsoft Word, PDF and Microsoft Excel and RIS as a minimum.
7. Work with providers to reduce the number of accounts needed across interfaces by linking OpenAthens accounts with provider accounts.
8. Request an autosave function in all provider interfaces.
9. Ensure that full-text linking is reliable and consistent in all provider interfaces, including over the next period during which full-text holdings data is being transferred between national link resolvers and Libkey is being implemented.

User Support

10. Ensure that there continues to be a single point of contact for user support. This is currently available for HDAS via the NICE enquiries service. With a move to multiple provider interfaces, advanced searchers will still need to be able to direct enquiries to a single service desk and be triaged and referred to provider support services and/or or local library services as appropriate.
11. Identify resourcing for this service desk support. As above, the NHS Education for Scotland knowledge services team maintain an equivalent of 1 WTE staff for a help desk support for their centrally provided services.
12. Build in an onward referral route for end users queries so users can be directed to support available via their local LKS.
13. Consider AI-enabled user support such as automated chat bots to help provide a real-time user support across the multiple provider platforms.
14. Investigate service desk software options to deliver an optimum enquiry management experience and provide necessary management information.
15. Develop a service knowledge bank/standard answer bank/FAQs.
16. Review the current database provider contracts to consider any modifications required to reflect the move away from primary access being via HDAS.

Peer Support and Collaborative Working

17. Facilitate sharing of best practice through blog posts, case studies, online workshops, a forum for peer support and other appropriate methods.

18. Investigate options for providing a single platform to enable sharing.
19. Facilitate co-creation of support materials and training resources for end users, using expertise from pilot participants and those services already using provider interfaces for end-user training.

Reference Management

20. Implement a baseline web-based reference management service (RefWorks) that can be delivered to all eligible NHS advanced search users.
21. Implement OpenAthens authentication for this service.
22. Explore options to include holdings data (and links to full-text) in references by implementing link resolver and/or LibKey integration with this service.
23. Signpost reference management user support via the single, central service desk (recommendation 10) and online support materials.
24. Work with pilot participants to produce a 'HEE house style' output in RefWorks, in a format that can also be deployed in other reference management solutions, and make this available to all users.
25. Agree a bulk procurement deal for EndNote to enable LKS to purchase this at reduced cost where the advanced features of EndNote are required for library staff who undertake very frequent or complex searching.
26. Develop a reference management community of practice to share and develop good practice and inform service development.

Supplier Management / Engagement

27. The move from HDAS to provider interfaces presents greater opportunities for engagement with database providers. Set up or utilise existing expert searcher communities of practice/user groups to feed back suggestions for interface improvements.
28. Ensure there is ongoing HEE participation in provider service review meetings, with the opportunity to monitor supplier performance against standards relating to interface functionality, training and support and feed back issues raised by service users.
29. In future National Core Content procurement, investigate the possibility – and cost implications - of reducing the number of interfaces needed to access bibliographic databases.

Single Interface Alternatives to HDAS

30. Use the nationally provisioned Knowledge and Library Hub discovery service for simple search ensuring as much cross coverage with bibliographic databases as possible.
31. Specify that the ability to index bibliographic database content in Integrated Library Search (ILS) systems is a requirement specified at contract re-procurement.
32. Ensure an export option is available from the Knowledge and Library Hub discovery service to RIS format (i.e. the generic reference management format) and RefWorks / EndNote specifically, is available for exporting results sets directly into reference management software.
33. Explore AI-driven search enhancements available to enhance the core Knowledge and Library Hub discovery service.

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