The NLH Primary Care Question Answering Service

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The background, process and methodology of the NLH Q&A Service <www.clinicalanswers.nhs.uk>.

In order to practise effectively, healthcare professionals need to ensure that their practice is evidence-based. Unfortunately, for a number of reasons, access to this evidence proves difficult. Therefore, if the NHS's call for 'evidence based practice' was to be something other than rhetoric, new systems needed be introduced to support the dissemination of the available evidence.

In November 2004, the National Library for Health (NLH) launched a pilot clinical question answering (Q&A) service for primary care. The service is based on the Welsh ATTRACT service <www.attract.wales.nhs.uk>. The success of ATTRACT (an all-Wales service running since 1997) was one of the reasons for the launch of the NLH service.

It is important to appreciate why there is the need for a primary-care Q&A service at all. Historically, primary care has been relatively poorly served by health libraries. Also, the diversity of scenarios encountered in primary care makes keeping up to date even more of a challenge. In more recent times, the use of the Internet has improved access to health information. This improvement was further helped by the launch of the National Electronic Library for Health (the former name for the NLH).

Unfortunately, a busy workload means that searching the literature is often difficult to fit in for primary care staff. Even when they do attempt a search, their efforts are frequently unsuccessful. Training in using these resources is crucial; e. g. analysis of the search patterns of the TRIP Database <www.tripdatabase.com>, a leading evidence-based medicine (EBM) search engine, is very revealing.

The commonest search terms used are broad terms such as 'diabetes', 'stroke' and 'asthma'. These patterns are mirrored in the NLH search engine. From a user perspective, these appear to be legitimate search terms. However, from a search perspective these terms are crude, resulting in a large number of search results. When someone searches on 'diabetes', what are they interested in? For something as unintelligent as a search engine it's impossible to tell. Is the person looking for details of diagnosis, retinopathy, leg ulcers? Training people to use search engines more efficiently would allow for better search results.

Another stumbling block is the actual research literature. The motivation for large sections of primary and secondary literature does not appear to be linked with improving clinical care. Analysis of the answers given by ATTRACT and the NLH Q&A service reveal that the vast majority of questions need multiple references to answer a single question fully. It should be noted that two resources are head and shoulders above others in terms of ease of answering primary care clinical questions: *PRODIGY* <www.prodigy.nhs.uk/> and *Clinical Evidence* <www.nelh.nhs.uk/clinical_evidence.asp>.

The creation of specialist Q&A services acknowledges the problems faced by busy health professionals. The important distinguishing feature of Q&A services is that they have a human component that can understand the question, contextualise it, design appropriate search strategies and ultimately write a suitable answer.

NLH Q&A service

Access to the NLH Q&A service is via the Web site <www.clinicalanswers.nhs.uk>. The Web site includes a list of all questions previously answered, and these can be viewed in their entirety or via clinical categories, e.g. cardiovascular disease, skin conditions, *etc*. A prominent button on the homepage 'Ask us a question' takes a user to a form where they can leave the question.

Once the question has been received by the NLH Q&A service, a number of stages are undertaken before the answer is posted. It should be noted that there is the need to return answers within a clinically relevant time-frame. In primary care, this appears to be 2–5 working days. Given this turnaround time and obvious resource implications, a systematic review cannot be undertaken for each question. Therefore, the Q&A process is a pragmatic compromise between clinical relevance and thoroughness.

Question clarification

Framing a question is probably the most crucial stage in the whole process. If those answering the question misunderstand it then the answer will invariably be wrong. Due to these potential problems, Q&A staff frequently contact the user requesting clarification. An example of an ambiguous question is: 'Are Selective Serotonin Re-uptake Inhibitors (SSRIs) effective?'. It may appear 'likely' that the question relates to depression. However, SSRIs can be used for more than depression. We encourage users to ask questions in the PICO format. PICO stands for Patients' Interventions Comparison(s) Outcome. So a better question (from our perspective) might be: 'In depressed adults (P) are SSRIs (I) more effective than Tricyclic antidepressants (C) in reducing depressive symptoms (O)'.

Search

The search can be a relatively straightforward process. Given the turnaround time for each question, only a limited number of databases are searched. These are principally the TRIP Database, Cochrane Library <www.nelh.nhs.uk/cochrane.asp> and Medline (via PubMed) <www.ncbi.nlm.nih.gov/entrez/query.fcgi>. However, we frequently resort to Google <www.google.com>, which is invaluable in two main areas. First, we are frequently asked questions about harm and Google regularly returns documents on sites such as the US Food and Drug Administration (FDA). Second, we often use Google to search PubMed. The flexibility/power of Google often means we find articles in PubMed using Google that we would not have found using the native PubMed interface.

Identifying material

With a clearly defined question, it is generally straightforward, with experience, to understand exactly the material the user is after. If the material is available in a secondary review (systematic review, clinical guideline, *etc.*) then we can be reasonably assured of the quality of the material. However, in over 50% of questions we need to include primary research. Given the turnaround time, we do not have the luxury of full text to appraise and, therefore, limited critical appraisal is carried out on the abstract. Using the abstract we can identify if the correct methodology has been used (e.g. a randomised control trial [RCT] for a therapy question), if the research question and outcome are clearly defined, *etc.* However, we are unable to comment on issues such as intention-to-treat and if randomisation has been carried out appropriately.

Question synthesis

Given the users' desire for nuggets of evidence, there is a need to keep the answers succinct and clinically relevant. The ideal length is around one side of A4 paper and this is kept to in the vast majority of cases. Generally, the NLH Q&A Service provides a brief introduction and uses a narrative to link the key points raised in the literature.

Publishing the question

One of the fundamentals of the NLH Q&A service is transparency and all the questions+answers are posted on the Web. In addition to allowing a form of external peer-review, it also allows others to re-use the answers. Feedback from GPs suggests that they like to look at our archive of questions, and this tends to be for two reasons. First, they like to see what others have asked and they feel good if they know the answer. Second, they often don't know that they didn't know the answer!

Question statistics

Currently, the site receives 25–35 questions per week and due to increases in capacity this will rise to 65 by October. The questions received are varied and cover issues such as disease management, therapeutic efficacy, diagnosis, harm, *etc.*

Example questions

What is the current evidence-based recommendation for managing simple hand warts?

Is there good evidence for the use of simvastatin 10 mg in the treatment of someone with hypercholesterolaemia?

Can high-dose inhaled steroids cause adrenal suppression?

User feedback

Each answer is emailed to the user and within the email is a link to an online evaluation form that asks a number of questions relating to the service. Due to the pilot nature of the service, feedback is important and will help with future development of the service. Some of the statistics from our most recent review include:

Q: Overall how would you rate the service?

Average = 2 (3.5%); Good = 9 (15.8%); Excellent = 46 (80.7%)

Each evaluation that reports less than 'good' is followed-up. In one case, the question was a contract issue, which we do not answer. The other was a GP asking a poorly defined question, so getting a 'wrong' answer. Once clarified, the question was re-answered and the GP received an answer they were happy with.

Q: Are you likely to use NLH query answering service again in the future?

Maybe = 2 (3.5%); Likely = 3 (5.3 %); Very likely = 52 (91.2%)

Q: Did you receive your answer quick enough

Yes = 57 (100%)

The Future

The NLH Q&A Service is a pilot project and is due to run until mid-2006. Although the service is well used and liked by the clinicians, that is no guarantee of a continuation.

Currently, the National Knowledge Service (NKS) is undertaking a review of question answering <www.nks.nhs.uk/background.asp>. This will cover issues such as what services are currently in operation, quality standards for question answering and training users and those answering questions. Progress in this area will naturally feed into any development of the NLH Q&A Service. In addition to developments gained from the NKS work, a number of other challenges await the NLH Q&A Service, for example:

Fully engaging with primary care

Given the relatively small scale of the pilot the majority of members of the primary-care team will not have used the service. To fully engage with primary care the service will need to develop awareness and increase capacity.

Identifying research gaps

By answering 'real life' questions, the research must be matched to the question. This gives us an insight as to where the research gaps are in both primary and secondary research. This knowledge is currently being used in a project led by Sir Iain Chalmers called DUETs (Database of Uncertainties about the Effects of Treatments) </www.update-software.com/projects/JamesLind/>. DUETs is looking to create a database of clinical questions, both patient and professional, investigating which are poorly answered by the current research. The end result will be a refinement in the research agenda to

give more patient and clinician-focused outcomes.

Evolution of the service

The core components of the service have changed little since ATTRACT was set up in 1997. The NLH Q&A service has a higher profile than ATTRACT and has received considerable attention already. This has resulted in a number of innovative suggestions, for example, the creation of a *BMJ*-style 'rapid responses' feature.

Discussion

To date, the NLH Q&A Service has been a great success, with the users of the service giving very positive feedback. Given the success of ATTRACT in Wales, this is not unexpected. With ever-increasing time constraints in primary care, GPs lack the time and skills to search and answer many of their clinical questions. Therefore, a system that takes away the more labour-intensive components of the process and gives 'nuggets of evidence' is likely to prove popular.

However, it's important that users are aware of the process and potential shortcomings. The NLH Q&A Service tries to be as transparent as it can reasonably be. Our methodology is clear from the site and all our answers are clearly available for others to see and comment on.

The growth and development of the service in the future is exciting and difficult to predict. However, with the continued backing of the NLH and the enthusiasm of the users the service will surely go from strength to strength.

New NeLH specialist library

<http://libraries.nelh.nhs.uk/palliative/>

The new **NeLH Palliative & Supportive Care Specialist Library** has been recently launched. An email discussion group <www.jiscmail.ac.uk/lists/ palliative-supportive-nelh.html> is also available to support the development of the library.

Current literature

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An annotated bibliography of articles relevant to the study and use of the Internet in the healthcare environment.

Aula A *et al*. Less is more in Web search interfaces for older adults.
First Monday 2005 Jul;10(7) <http://firstmonday.org/issues/issue10_7/aula/>.
This observational study compares the usability of Google and an elderly-friendly search interface, Etsin, designed by the authors to address usability problems faced by older adults. Major problems previously identified relate to editing the search text, not understanding the terminology and confusion caused by different types of documents (e.g. PDFs). Etsin, meaning Finder in English, was designed using the Google API. The Etsin interface includes a large emboldened font in the text box with larger spacing between letters and an extra button for clearing the search text, while an icon appears alongside documents that require an external application. Otherwise, it provides simplified functionality compared to Google: the advanced search option is hidden, the results listings do not display the size of documents, or the Cached or Similar pages links, nor are the URLs displayed by default, and the summary sentences are bulleted. On average, the ten participants encountered 40% more problematic situations when using Google, although two experienced searchers missed useful functionality offered by Google. The authors conclude that a simple design makes the search interface more usable for older adults and draw attention to the importance of conducting observational studies with the target user group.

Glenton C *et al*. Portals to Wonderland: health portals lead to confusing information about the effects of health care.
BMC Med Inform Decis Mak 2005 **Mar 15**; 5(1):7 <www.biomedcentral.com/1472-6947/5/7>.
The goal of this study was to evaluate four English-language government-run health portals as compared with the results of systematic reviews. The four portals – the Canadian Health Network, HealthInsite, MEDLINEplus and NHS Direct Online – were used to find information about the effects of interventions for eight health conditions, for which Cochrane reviews could be identified. 155 Web pages that referred to both the condition and the intervention were selected for inclusion and, of these, 92 presented information about effect, with 77 providing qualitative information and 15 providing quantitative information. Few of the Web pages were found to be consistent with the results of the systematic reviews and in some cases the portals offered contradictory information. The report concludes that health portals are only as good as the information to which they lead and recommend that investment is made in producing relevant, valid and understandable information to which the portals might lead.

Hajjar I *et al*. Quality of Internet geriatric health information: the GeriatricWeb project.
J Am Geriatr Soc 2005 May;**53**(5):885–90.
In this article the authors record the development of GeriatricWeb, a collaborative project between librarians and geriatric specialists initiated in 2003 to provide access to health information for geriatric clinical practice and professional education. They describe a three-level assessment process, which involved resource discovery by librarians, and further screening and detailed assessment by geriatric specialists, concluding with GeriatricWeb providing links to those resources that attracted favourable evaluations. An editorial review board undertook to review the resources providing a summary for each resource and using an online assessment tool. The tool was developed as a result of a review of tools and initiatives relating to Internet health information quality and included 20 attributes divided into four domains (credibility, accuracy, design and educational aspects). Medical organisations and academic institutions contributed the majority of