Information in practice



Just in time information for clinicians: a questionnaire evaluation of the ATTRACT project

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General practitioners generate many clinical questions during consultations. However, when they seek answers to these queries they tend to rely on colleagues and "desk top" references rather than searching the literature themselves. 1-3

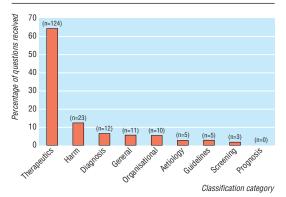
ATTRACT was created in 1997 to provide rapid, evidence based summaries to clinical queries. All general practitioners in Gwent were invited to send their clinical queries to ATTRACT. For each query an information manager (JB) undertook a rapid search of the literature. The information found was appraised, summarised onto one side of A4 paper, and faxed to the requestor within six hours (see appendix on the *BMJs* website for more details on the search, appraisal, and summary process). Examples of the questions received include "Do decongestants help in people with eustachian tube dysfunction?" and "What are the risks of flying while pregnant?" (see *BMJs* website for list of most popular questions). We report here an initial evaluation of this service.

Participants, methods, and results

We developed a brief anonymised questionnaire to seek doctors' views on the usefulness of ATTRACT. We sent this to the first 15 general practitioners to use the service and, one year after the initial survey, to the general practitioners who had asked the 35 most recent questions. In addition, we analysed the clinical queries received during that period (1 January 1997 to 31 January 1998).

Forty two (84%) of the 50 general practitioners replied. Of these, 29 (69%) rated the service "very useful" and 13 (31%) rated it "useful." All the respondents rated the service as "very quick" or "quick," and all reported that they would use it again. For the 40 doctors who replied to the question about the effect of the supplied information, nine clinicians were already practising in line with the evidence supplied, 24 changed their practice as a result of the information, six did not change practice because of the weakness of the presented evidence, and the remaining one asked a question about prognosis so that change in practice was not relevant.

Of the 193 questions received by ATTRACT in 13 months, 124 (64%) related to therapeutic issues and 23 (12%) related to harm, the next most prevalent category (figure).



Classification of 193 queries to ATTRACT from 1 January 1997 to 31 January 1998

Comment

Our study shows that Gwent general practitioners use and value the ATTRACT service. Although our assessment is based on a small number of users, it merits reporting because of the strength of the opinions expressed and our clear impression that fast answers to clinical questions actually change practice. This study is the first to evaluate a fast, evidence based query answering service for doctors in the NHS, and our results support McColl et al's conclusion that doctors want summaries of evidence rather than the skills to produce them themselves.⁴ Our results also confirm Smith's and Ely et al's reports that most clinical queries relate to therapeutic issues.^{1 2}

The reported changes in practice are encouraging. This is probably because, instead of "pushing" information towards clinicians in the (usually false) hope that they will change practice, ⁵ ATTRACT allows doctors to "pull" information as and when they need it.

Clinicians need rapid access to valid information in an easy to use format if the ideal of an evidence based service is to be achieved. The ATTRACT approach has the advantage of using less expensive staff to conduct the process and using well validated databases and protocols. Policy makers and managers in the NHS must think carefully about how to respond to the information needs of clinicians. Our study suggests that, by removing some of the more laborious stages of evidence based practice, important changes in practice can be realised.

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A table listing the most popular questions to the ATTRACT project and details of the process for answering them appear on the BMJ website

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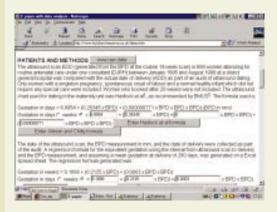
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INFOPOINTS

Publishing raw data and real time statistical analysis on e-journals

Authors of medical publications rarely provide their readers with the full raw data from their work but provide only the summarised statistical analysis. Indeed, publishing the raw data in a paper journal would usually be impractical and of little help to readers as transcription from the printed paper to a computer for further analysis would be laborious and prone to transcription errors. Without raw data, however, peer reviewers are unable to check the statistical analysis, and further work on the data by others is not possible.

I demonstrate a method of including the raw data within a web version of an audit project that includes real time data analysis (see details below). The raw data for this paper amounts to only 1526 data items, but even this much data could not normally be included in a paper journal. The internet and most modern computers can cope with much larger datasets.



In the demonstration version I have included software to provide the database for readers to view. From here the data can easily be copied and pasted into another application. The data can also be easily viewed within the HTML code with any browser such as Internet Explorer that allows users to view source code. The statistical analysis is carried out with JavaScript within the browser software, and all the algorithms are available for inspection by readers within the HTML code if desired.

The demonstration paper is a simple audit cycle, but any publication involving a considerable amount of raw data could be published in this form with considerable advantage. Potential advantages of providing raw data and statistical software within the web version of a published paper include

- Raw data remain available in the foreseeable future for other workers to analyse further
- The data can be easily copied into other applications, making analysis by others a practical proposal
- The data are available for effective meta-analysis
- The statistical analysis is available to be checked by peer reviewers and readers
- Internet publication has in practical terms unlimited capacity for data storage
- Most journals will support a web version in the next few years.

Some of the advantages of electronic publishing have been realised with the launch of web versions of major journals such as the *BMJ* and *Lancet*. The practical limitations of sharing large amounts of data have been overcome with internet technology. Presently, raw data from most research are likely to be filed away or lost in the depths of a hard disk once the paper is published.

If raw data were published with the original paper they would remain available, with appropriate permission and acknowledgement, to other workers in the specialty. Furthermore, if the data were published within the electronic version of a paper they could not become separated or lost as they would be an integral part of the paper. Meta-analysis of published evidence would be more effectively combined if the raw data were available. Also readers could easily add to or alter the database and rerun the statistical analysis in the knowledge that the analysis would be identical with that performed in the published article.

The demonstration paper, "A complete audit cycle of ultrasound estimation of the date of delivery," is available at www.hutchon.freeserve.co.uk/demo.htm

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