Original paper

Development of an Internet Search Strategy for use by Urologists to Identify New Technologies in Diagnosis and Treatment of Localised Prostate Cancer

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Abstract

Background: The Internet is becoming an important source of information for early identification of new, potentially significant health technologies. Early identification, or horizon scanning, can contribute to timely evaluation improving patient care, but tools to support clinicians in horizon scanning are lacking. In urology, diagnosis and treatment of localised prostate cancer is among the indications characterised by rapid technological change.

Objectives:

Objectives: The objective of this study was to develop a list of prioritised web sites that would be easy to search, and provide appropriate information to urologists on technological change in diagnosis and treatment of this condition.

Methods:

Methods: HON (Health on the NET), OMNI (Organising Medical Networked Information, run by the University of Nottingham Greenfield Library) and Google were used to find web sites. A checklist with in- and exclusion criteria was developed including criteria related to the specific clinical indication, criteria for user-friendliness and efficiency of searching web sites, and quality/reliability related criteria. Selected web sites were evaluated on the basis of overlap in hits, and the urologists in the team assessed the relevance of the identified technologies. Finally, a sample of six urologists who were not involved in the other stages of the project tested the strategy for user-friendliness and efficiency. The combination of findings resulted in a final strategy.

Results:

Results: Of 376 URLs considered, ten were included in the final search strategy, including guidance on how and where to search on the sites.

Conclusions:

Conclusions: It is possible to create an Internet search strategy to identify new health technologies for a well-defined clinical indication. The strategy should be updated regularly because of rapid changes of the Internet. The methods used may be generalisable to develop similar strategies in other clinical areas in urology and, most likely, in other specialties as well. The systematic approach secures users of the Internet search strategy access to trustworthy, accurate and valuable information on new health technologies.

KEYWORDS

Introduction

Methods

Several studies have explored and provide guidance for patient use of the internet for oncology-related health information [e.g. 5,6]. To our knowledge there are no publications aimed at guiding (specific groups of) health professionals in searching for new diagnostic- and treatment options in oncology. This study is aimed at identifying accurate and reliable information on the Internet for health professionals on new health technologies, including pharmaceuticals, medical devices, and surgical/medical procedures. Given the context of this study, Horizon Scanning in Health Technology Assessment, the starting point for a search is in the literature in this field. Three main sources including sets of relevant URLs were identified [7,8,9]. These sources were complemented with searches in two portals including accredited sites, HONcode and OMNI [10,11], using 'prostate cancer' and 'prostatic neoplasms' as main search terms. These portals were recommended by the university's information specialist as enabling a search with more precision. Furthermore, Google was searched using: 'prostate cancer' OR 'prostatic neoplasms' treatment OR drugs OR drug OR medical OR device OR method OR procedure OR pipeline. Both the Danish (with search terms in Danish) and the English version of Google were used. Secondly, criteria for in- and exclusion of sites were developed, including aspects of trustworthiness and quality [10,11] as well as user-friendliness of sites [9,12,13]. In the context of our study timeliness is an important aspect of the information as the aim was to find new health technologies and provide early notice to decision makers. Trindade et al [12] furthermore recommend that a site have a high percentage of relevant information about the new health technology, is easy to search, that a news archive is available, and that access to the site should be free. Some examples of newly developed criteria are: the availability of a news archive covering a period of at least three months, publication date of the news, at least 80% of the collective news items on the sites need to focus on prostate cancer, disclosure of public/private financing of the site, and the possibility to check all original sources of news items. Sites were excluded e.g. when prostate cancer was not covered, when another language than either English or Danish was used, or when the information could not be obtained for free. As a third step, these criteria were applied to sites, and included sites were then systematically scanned and studied for overlap in information. Fourthly, a short questionnaire was developed to consult urologists on the novelty and relevance of the identified new technologies for Danish health care. Two of us (MJ and KVP) applied the questions to the identified technologies, and one of us (SM) assisted in setting the standard for novelty, on the basis of his capacity as coordinator of updating a clinical guideline in treatment of localised prostate cancer. The assessment of MJ and KP was used to rank the sites on the basis of their relative contribution to the total number of potentially relevant emerging and new technologies. The rank-ordered list of sites was then tested in terms of user-friendliness and efficiency (defined as the time needed per site to identify one emerging or new, potentially relevant health technology) by a panel of six voluntary urologists. The involvement of general urologists was motivated by the idea that the search strategy should be user-friendly and helpful not just for expert urologists but also for the urological community in general.

In the final step the joint input of these urologists was analysed and, while taking into account overlap of information between sites, this information was used to determine the final order of the sites in the strategy, starting with the site that contributes most efficiently to the total number of new technologies identified.

Results

In total 376 URLs were found. After applying the in- and exclusion criteria 10 web sites were included in the strategy. These sites were ranked in a prioritised order based on information documenting overlap between the sites and the feedback from the urologists in the team.

The test of the rank-ordered sites for searching efficiency, expressed as the average length of time (minutes) scanned per identified new and relevant health technology, which was carried out by six voluntary urologists, resulted in a new ranking. It was for example found that scanning Yahoo Health was most efficient, with only 3 minutes used per identified new and potentially relevant health technology. The number of technologies identified was highest on CancerPage (n=7) with the six urologists spending a total of 46 minutes of scanning. Yahoo Health provided 3 new technologies after a total of 18 minutes of scanning. Again, overlap of identified technologies between sites was taken into account and a final ranking was created, which is shown in figure 1.

1. Yahoo Health [14]. The news items can be found in the middle of the site.

2. DoctorsGuide [15]. The news items can be found in the middle of the site.

3. The National electronic Library for Medicines [16]. The news items can be found in the middle of the site if the following prescription is followed: Write 'prostate cancer' in the field "Search For" and select "News and Updates" in the field "In" . Select sort by date in the column to the right.

4. CancerPage [17]. The news items can be found in the middle of the site.

5. Medscape [18]. The news items can be found in the middle of the site.

6. MedlinePlus [19]. The news items can be found in the middle of the site.

7. HealthAndAge [20]. The news items can be found in the middle of the site if the following prescription is followed: Top left you will find a search box. Write"Prostate cancer" and click "Go".

8. CancerConsultants [21] A listing of news items can be found right at the top of the screen.

9. EurekAlert [22] The news items can be found in the middle of the site.

10. Oncolink [23]. The news items can be found in the middle of the site.

Figure . The 10 sites included in the search strategy, with guidance on where to find the items that might contain information about new health technologies in the area of prostate cancer

These ten sites provided information on new health technologies but also on new indications of existing health technologies in treatment of prostate cancer. We identified 9 new technologies by scanning these sites in the period March-May 2005, of which 6 were judged potentially relevant for Danish health care by the urologists in the team. More information on these technologies is available with the corresponding author.

Discussion

We developed an Internet search strategy that provides information on new health technologies for a well-defined indication in urology, diagnosis and treatment of localized prostate cancer. The sites included are mainly geared towards health professionals. The strategy proved easy to search by urologists. The systematic approach secures users of the Internet search strategy access to trustworthy, accurate and valuable information on new health technologies. Future developments could include a systematic review of the literature on quality criteria for web-sites containing health information, as this is a field that rapidly develops. The current strategy needs to be adopted either by a medical society (e.g. the Danish Urological Society), or by a Health Technology Assessment agency to ensure that the links remain up-to-date and accessible. The approach to further develop the strategy could be harmonized in order to function as a blueprint to the development of search strategies in other specialties.

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HV supervised the project and wrote the English language manuscript, MT carried out the study and wrote a project report in Danish, KD co-supervised the project, assisted in the development of methods used, and reviewed drafts of the manuscript. MJ, KP and SM were involved in the application of selected methods, provided feedback and reviewed drafts of the manuscript.

Conflicts of Interest

None declared

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17. CancerPage http://www.webcitation.org/5GvcEsHHw [accessed 2006 June 26]
18. Medscape http://www.webcitation.org/5GvcIHymj [accessed 2006 June 26]
19. MedlinePlus http://www.nlm.nih.gov/medlineplus/ProstateCancer [accessed 2006 June 26]
20. HealthandAge http://www.healthandage.com/ [accessed 2006 June 26]
21. CancerConsultants http://professional.cancerconsultants.com/anchor2 [accessed 2006 June 26]
22. EurekAlert http://www.webcitation.org/5Gvd8VtWG [accessed 2006 June 26]
23. Oncolink http://www.webcitation.org/5GvdBE40c[accessed 2006 June 26]