The Royal College of Surgeons of England

*Ann R Coll Surg Engl* 2003; **85**: 44–46

Original article

# Finding the best from the rest: evaluation of the quality of patient information on the Internet

AD Gilliam, WJ Speake, JH Scholefield, IJ Beckingham

*Section of Surgery, University Hospital, Queen's Medical Centre, Nottingham, UK*

***Introduction*: Information is of utmost importance for patients at risk of developing cancer who require regular screening. Quality assessment is vital to ensure correct information is published on the Internet.**

***Method*: A postal questionnaire was sent to patients under follow-up for Barrett's oesophagus and colonic polyps. Questions related to computer/Internet access, where patients had previously sought information, whether web-sites would be of use, and what information they would like displayed. A review of on-line patient literature for Barrett's oesophagus and colorectal adenomas was performed.**

***Results*: Of the 200 questionnaires sent, 161 patients responded (80.1%). The majority of patients (88%, *n* = 141) wanted more information on their condition, with 45% (73) having home Internet access and a further 32% (52) having web access from other sources. Only 8% (12) had used the Internet as a source of information; however, the majority of patients (57%) would access a recommended web-site. The Barrett's search resulted in 10/200 sites with full information (*i.e.* score > 8/10 points). For colorectal polyps there were 12/200 sites.**

***Conclusions*: Accessing quality Internet health information is very time consuming. Recommended web-sites that provide the best information would help patients avoid being overwhelmed with irrelevant and confusing literature.**

*Key words*: Information – Internet – Barrett's oesophagus – Colorectal adenoma – Premalignant conditions

The Internet or World Wide Web is an international network of computers linked up to exchange information. This 'information superhighway' allows patients to seek, and usually find, answers to every medical question they have ever had in seconds.[1,2] As computer literacy increases and the cost of Internet access decreases, patients are increasingly obtaining medical information from the Internet.[3] Health care professionals are also seeking to make increasing use of the Internet for communication with patients.[4]

There are few regulations controlling web-site construction resulting in increasing concern that patients may find inappropriate, inaccurate and misleading information, causing at best, stresses and strain on the 'patient–doctor' relationship and at worst, medical misadventure.[5]

Quality assessment by surgeons is vital if one is to gain an overview of 'medically' published materials on the Internet, lending support to the distribution of recommended 'selected Internet viewings' in this journal.[6]

**Correspondence to**: Mr A D Gilliam, Surgical Research Fellow, Section of Surgery, E Floor, West Block, University Hospital, Nottingham NG7 2UH, UK. Tel: +44 115 924 9924; Fax: +44 115 970 9428; E-mail: andrew.gilliam@nottingham.ac.uk

*Table 1 Method of overall analysis of web-sites*

| | |
|---|---|
| Content | Number of pages |
| Statement of information source | Yes/No |
| Balance and bias | Sponsor declaration/product advertisement |
| Accuracy | Compatibility with general medical/surgical opinion versus misleading advice |
| Clarity/understandable | Use of lay terminology versus medical jargon. Use of pictures/diagrams/video. Use of frequently asked questions |
| Age of information | Creation date/regular updates |

Education and information are of utmost importance for patients at high risk of developing cancer. Barrett's oesophagus and colorectal adenomas are premalignant conditions that are kept under surveillance to prevent cancerous change developing. The aim of this study was two-fold. Firstly, to determine information resources used by patients with Barrett's oesophagus and colonic polyps; and, secondly, to evaluate the quality of this information available on the Internet using a 10-point scoring system.

## Patients and Methods

A postal questionnaire was designed and piloted. The questionnaire was then sent to patients under follow-up for Barrett's oesophagus and colonic polyps from January to August 2001. Stem questions related to computer/Internet access, where patients had previously sought information, potential use of web-sites, and what information patients would like to see displayed.

Five popular Internet search engines (Google, Alta Vista, MSN, Excite and Lycos) were used to find 'hits' for Barrett's oesophagus and colorectal adenomas (searched 18 October 2001).

All Uniform Resource Locator (URL) addresses of the top-forty 'hits' of each search engine were visited, after duplicates were removed. These sites were analysed with an overall analysis and a 10-point scoring system, designed by us, to assess objectively the quality of information provided (Tables 1 & 2).

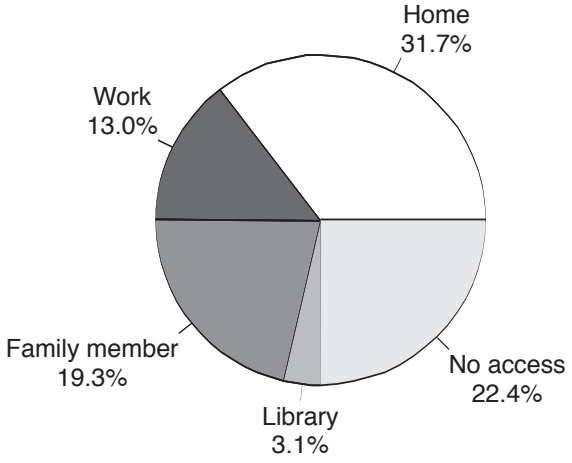


**Figure 1** Location of Internet access.

*Table 2 Quality assessment – the 10-point scoring system*

| | | |
|---|---|---|
| Background/introduction | Yes/No | 1/0 |
| Aetiology of the disease process | Yes/No | 1/0 |
| Preventative measures | Yes/No | 1/0 |
| Symptoms of the disease | Yes/No | 1/0 |
| Diagnostic process | Yes/No | 1/0 |
| Treatment | | |
| Explanation of drug/procedure | Yes/No | 1/0 |
| Potential Side effects | Yes/No | 1/0 |
| Duration of treatment | Yes/No | 1/0 |
| Links/recommended reading/ support agencies/E-mail interactivity | Yes/No | 1/0 |
| Future developments/research | Yes/No | 1/0 |
| TOTAL SCORE | | 0-10 |

## Results

Of the 200 questionnaires sent, 161 patients responded (80.1%). The majority of patients (88%, $n = 141$) wanted more information on their condition, with 45% (73) having home Internet access and a further 32% (52) having Web access from other sources (Fig. 1). Most patients had previously sought and received information from medical staff (56% general practitioners and 53% hospital doctors); fewer had obtained information from nursing staff (15%) as shown in Figure 2. Only 8% (12) had tried the Internet as a source of information; however, the majority of patients (57%) would use a recommended web-site to see up-to-date information on current treatment, new developments, and clinical trials (Fig. 3). No patient had previously telephoned NHS Direct for information.

The Barrett's search resulted in 10/200 sites with full information (*i.e.* score > 8/10 points). The total numbers of 'hits' on Barrett's from each search engine were 691, 1270, 52, 40, 117; total 2170. For colorectal polyps, total hits were much higher (174, 3615, 48,938, 5830, 3771; total 62,328), but

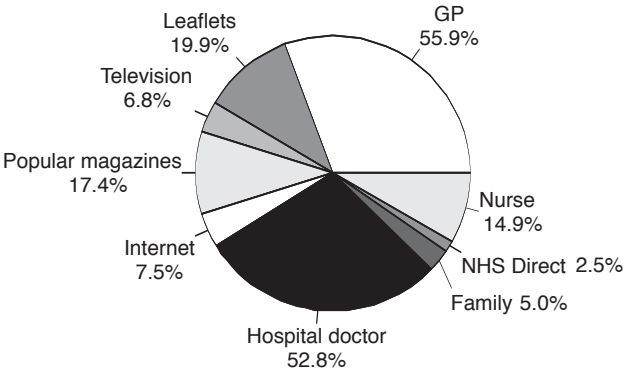


**Figure 2** Sources of information previously used.

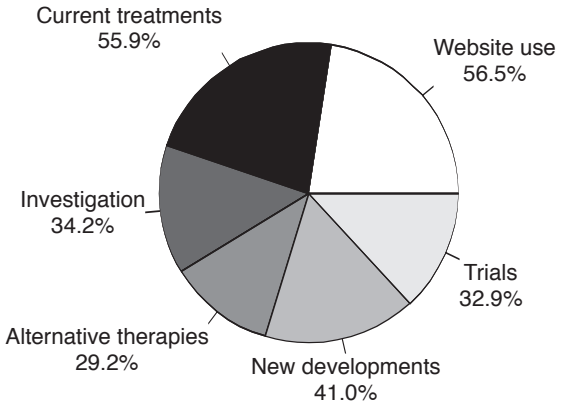


**Figure 3** Information requested on web-site.

quality sites were similar (12/200). Three of the best web-sites for each condition are listed below:

*Barrett's oesophagus*

<www.fhcrc.org/science/phs/barretts/pubs.htm>
<www.medical-objects.com/bgc/Handouts/barretts.htm>
<http//www.gastro.net.au/diseases/barretts.html>

*Colonic polyps*

<http://www.findarticles.com/cf_dls/g2601/0007/2601000766/p1/article.jhtml>
<http://www.omni.ac.uk/browse/mesh/detail/C0009375L0009375.html>
<www.healthybowel.com/diseases/colon_polyps.shtml>

## Discussion

Accessing Internet health information is very time consuming and coverage of key information for patients is usually poor. Doctors could recommend web-sites to patients that provide them with the best information. This selection of information would help patients avoid being overwhelmed with irrelevant and often conflicting literature. Patients currently receive most of their information from medical staff, but potential exists to use the Internet for re-inforcement and repetition of important information, especially if certain sites were recommended for their balanced, unbiased coverage by health-care teams.

On-line information has several advantages over leaflets. These include ability to update information quickly, easily and cheaply, as new developments in treatment and investigation occur. E-mail interactivity can also be built into these web-sites so that if the patient has any questions or feedback, they can easily be answered and addressed. Furthermore, web-sites can also be 'personalised' by health-care teams. For example, members of the team could have their names and photographs on the web page so that patients will know who they will be meeting prior to their appointment and official introduction. Use of a frequently asked question section may reduce consultation time by advising patients what they can expect to happen during investigation or treatment. In addition, detailed questionnaires could also be included on the web-site allowing patients to print them out and answer them before their clinic, endoscopy or GP appointment.

In the future, there will be greater reliance on the Internet medium for health information and healthcare as computer literacy and access increase. The emerging ethical issues, however, associated with medicine on the Internet (*e.g.* confidentiality and security of medical information) are beyond the scope of this paper.

It is important that doctors grasp the benefits that the Internet can offer to improve their practice.

## Acknowledgement

This paper was presented, in part, to the British Association of Surgical Oncology, Glasgow, November 2001. It has been published in abstract form (*Eur J Surg Oncol* 2001; **27**: 810)

## References

1. Huntley AC. The need to know. Patients, e-mail and the Internet. *Arch Dermatol* 1999; **135**: 198–9.
2. Watson R. The new patient power. *Newsweek* 2001; **137**: 54–8.
3. Sherman L. The World Wide Web: what physicians should know when patients are surfing the net. *World Med J* 1998; **97**(11): 31–2.
4. Prady SL, Norris D, Lester JE, Hoch DB. Expanding the guidelines for electronic communication with patients: application to a specific tool. *J Am Med Inform Assoc* 2001; **8**: 344–8.
5. Ellamushi H, Narenthiran G, Kitchen N. Is current information available useful for patients and their families? *Ann R Coll Surg Engl* 2001; **83** 292–4.
6. Cheshire N. Selected Internet viewings: a new website review forum for the *Annals*. *Ann R Coll Surg Engl* 2001; **83**: 225.