

Designing a medical web site

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Abstract

Background A web site is a valuable shop window for any medical unit with something to sell or something to say.

Aims The aim of this report is to outline the basic steps of web page design for the individual or unit with limited financial resources.

Methods There are two ways of designing a web site. A reputable web design company can be employed, but this is usually expensive. Alternatively, a web site can be designed in-house using commercial software, following a few simple steps. The basic requirements are a personal computer, software that is available on most computers and access to a few peripheral items of hardware. An outline of the page design should first be put down on paper. This can be transferred to a computer file using a web page design program. This file is then sent to a server for publication on the World Wide Web (WWW).

Conclusion Designing and publishing a web page can take time and effort, but the rewards can be great and the results will reflect the message and motto of the unit.

Introduction

The Internet has become a popular medium for both the public and health care professionals in search of health-related information.¹ In America during 1998, 60 million people searched the Internet for health care information.² This compromised 68% of the 88 million people using the Internet.² The Internet supplies access to a virtual community of health support groups and information providers. Increased use of the World Wide Web (WWW) by health education professionals has heightened the need for web page construction.³

The volume of health information on the Internet is impressive; however, the quality of much is questionable. A recent study showed that organisations or individuals who may be providing biased or inaccurate information own more than half of the 160 randomly selected web sites.⁴ Kim et al⁵ suggest that authors agree on key criteria for assessing health care web sites including content, design and aesthetics, currency of information and maintenance. In addition, they suggest that these guidelines can help establish a simple set of criteria that the general public can understand and use.

Any institution that wishes to display its services needs a web site. Construction can be expensive, especially if commercial firms are employed. Creating a web site in-house is surprisingly easy, and many of the medical or student staff may possess the skills and indeed may already be involved in commercial web page design. We outline the key steps in setting up a web site and ensuring that it is visited.

Methods

The best web sites are carefully planned. The first step is to set down the outline on paper. This template can then be reconstructed on computer using a web design program. Whilst in the planning stage, consider the following essential points.

Authorship

While anyone can publish a web page, not everyone has the training necessary for responsible communication of health information. Author's/authors' credentials and qualifications

should be given on a medical web page. This is especially true of medical web sites representing doctors and the services they provide.

Purpose

Decide on the purpose of the web site and what the audience will want to see. Are you trying to sell a product, a service or a point of view? Designing a web site for a hospital implies that general information on the services provided and increasing public awareness of the hospital are being relayed. Does it need to be interactive? Will it be used to make appointments? Will it be used for requesting personal information or health-related handouts? This will influence design and departmental involvement.

Current information

Information provided on the Internet is often considered by the public to be the most up-to-date available, but health information changes rapidly. Material should be dated once it is posted. High quality sites provide the date of the last update so the currency of the information can be evaluated. In designing a hospital web site, one person from each department should be designated to contribute the content for each of their pages.

Materials

The tools needed to create a web site are listed in Table 1. The software is available in most institutions. Currently, the best software is Microsoft Publisher and comes as part of Office 2000. Microsoft Publisher is user-friendly and is similar to programs

Table 1. Computer hardware and computer programs for web page design

Hardware	Software
Personal computer	Microsoft Publisher
Scanner	Microsoft Paint
Digital camera	Adobe Photo Deluxe
Printer	Dreamweaver

Table 2. Commonly used phrases and abbreviations

Abbreviation/phrase	Meaning
WWW	World Wide Web
HTML	Hyper Text Mark-Up Language The computer language of the web
PC	Personal computer
Links/hyperlinks	An electronic means of connecting two pages on the World Wide Web
Icon	A symbol or graphic representation on the web site
Log on	The process of connecting to the Internet
Home page	The first page that the browser should see when logging on to your web site
Browser	The individual connecting to your web site
Server	The computer responsible for publishing your web site on the World Wide Web
Domain name	The name you have registered that represents your institution
URL	Uniform Resource Locator This means literally the full web site address, i.e. www.jcmh.ie
.ie	Portrays an Irish domain name

such as Powerpoint. It can be used to develop any level of web site — either a simple home page or an organisational web site. It is limited, however, and cannot perform more of the advanced aspects of web design. For advanced design, there are a number of commercially available programs.

Putting the pieces together — basic format

The home page

Once a template has been decided upon, putting it together is relatively easy. Begin with a home page. This is the opening or welcoming page that browsers see when they 'log on' to the web site. It must look professional and aesthetic. First impressions last; they should encourage another visit.

The institution's name and logo should be clearly visible at the top of the page. The address should be placed underneath in smaller font. A picture or image of the institution can be inserted here, to make the page more recognisable to visitors.

Navigation bar

The next step is to create a navigation bar (see Figure 1). This consists of a horizontal or vertical line on the web page with different departments or facets of the institution that the browser will see on the page. For people who browse on the Internet, this will be an instantly recognisable feature. Only the most important topics should be placed on your navigation bar, as too many will lead to confusion. Once the navigation bar titles are decided, they should be present on every single page of the web site. This prevents the visitor from getting lost as they surf between pages. The most important item on your navigation bar is the home page.

Icons

Another aspect to the home page should be the presence of icons (see Figure 1). These are images that represent the institution or other institutions with which the web site has an affiliation. Listing other institutions is a professional courtesy. The other institution may reciprocate, thus providing free advertising. Icons also give a refreshing and colourful presence to your web site and will be visually pleasing to the browser.

Dos and don'ts

An example of how a home page might look is provided in Figure 1. Apart from the navigation bar and logos, other important information about your web site should be put on this page. This may consist of a welcome greeting, special features and how the browser may benefit from their visit. A standard theme should be continued throughout the pages so that the web site looks familiar to the visitor and is easier to navigate. The home page should not be too crowded, with plenty of free space. This is more pleasing to the eye and will take less time to download.

Spelling errors reflect poorly on the institution, so all site material should be carefully proofed before publication. The material should be presented to the individuals concerned, or the medical board of a hospital, to ensure that it meets their approval before being formally launched.

Digital images

Digital images may be used to convey a message or to describe a section. If these images contain pictures of staff, permission must be sought. Graphic file sizes should be small in order to download rapidly.

Hyperlinks

As pages are being sketched out, links between various pages or pieces of information should be indicated as desired. A link or hyperlink is a connection that links items on one web page to other pages on your site or to other sites on the WWW. Clicking on an icon on one page will open another page of information.

When all the necessary information for each department is ready for publication, the navigation bar is hyperlinked to the various sections of the site and all the information for that department is inserted in the appropriate page.

Publishing your web pages

In web design, the aim is to publish your web site on the WWW. This is done in a format called HTML (Hyper Text Mark-up Language). To publish your web pages, the data must be sent by e-mail to a server who will display it on the WWW. A server is a central administrator with a very large hard drive for storing web sites for public access. An example of such a server is Ireland-on-Line or iol.ie

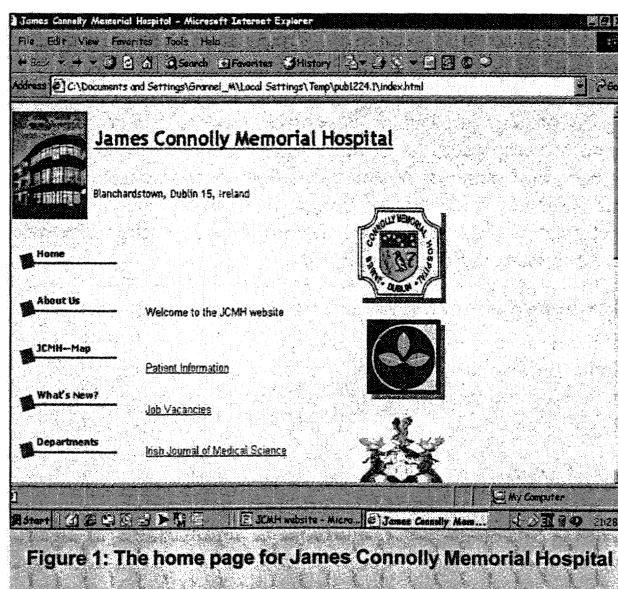


Figure 1: The home page for James Connolly Memorial Hospital

Registering a domain name

It is necessary to register a domain name. This will be your web site's address. In the case of James Connolly Memorial Hospital, we chose www.jcmh.ie. The domain registry for Ireland is located at University College Dublin and can be contacted at the following address: www.domainregistry.ie

Web site upkeep

Management and upkeep of the web site is of fundamental importance. Following the launch to the WWW, the site must be updated on a regular basis, ideally weekly. A designated person with web site experience should perform this task.

Quality assurance

People who browse this web site may send their comments, which can be used in re-evaluating the web site's content and purpose. This quality assurance will help in maintaining the web site's reputation and validity.

Legal aspects of web design

Before placing information on the WWW, it should be copyrighted. A disclaimer should be included to protect the institution from proceedings against it should any misunderstandings or complications arise from use of the web site by the general public. This is especially true for health care web sites.

References

1. Hettler B, Randolfi EA. Association for Worksite Health Promotion, Summer 1999: 46-7.
2. Taylor H. Harris poll: most net users want health info. Explosive growth of a new breed of 'cyberchondriacs'. (Press release), Louis Harris & Associates, New York, February 1999: 1-6.
3. Pealer LN, Dorman SN. Evaluating health-related web-sites. *J Sch Health* 1997; 67: 232-5.
4. International Food Information Council (1997). IFIC Review: How to understand and interpret food and health-related scientific studies (on line).
5. Kim P, Eng TR, Deering MJ, Maxfield MA. Published criteria for evaluating health related websites: review. *Br Med J* 1999; 318 (7184): 647-9.

Useful Irish medical web sites

Some useful Irish medical web sites	Web site address
National Library of Medicine, PUBMED (Allows free access to Medline)	
www.ncbi.nlm.nih.gov/PubMed	
Irish Medical Organisation	www.imo.ie
The Irish Medical Directory (Guide to medical health care and the medical profession in Ireland)	www.imd.ie
Irish Journal of Medical Science	www.ram.ie/ijms
Health Research Board	www.hrb.ie
Web site designed to aid doctors and other health care professionals travelling to conferences	www.healthcareconferences.com
Irish Medical Times	www.imt.ie
Department of Health and Children	www.doh.ie
Eastern Regional Health Authority	www.erha.ie
Southern Health Board	www.shb.ie
South-Eastern Health Board	www.sehb.ie
Western Health Board	www.whb.ie
Midland Health Board	www.mhb.ie
Mid-Western Health Board	www.mwhb.ie
North-Eastern Health Board	www.nehb.ie
North-Western Board	www.nwhb.ie
Royal College of Surgeons in Ireland	www.rcsi.ie
Royal College of Physicians in Ireland	www.rcpi.ie

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