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LETTER TO EDITOR

Assessing And Accessing Health Information On The Internet

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ABSTRACT

The internet is becoming an important source of health information. The quality of the information however, varies greatly. In this article, the authors enumerate the general principles to be followed for assessing the quality of health information and discuss a selection of health websites for prescribers and consumers.

The internet is increasingly becoming an important source of health information for both healthcare professionals and laypersons. The concerns raised about internet health information are, the sheer amount of information available, information which is misleading, the quality of information and as to which websites are trustworthy [1]. Even in developing countries like Nepal, people have increased access to the internet and to internet sources of drug and health information. The internet is widely used to promote herbal remedies, dietary supplements and alternative medicines and therapies. Most countries do not have laws and regulations to regulate content on the internet. In this situation, it is left to the individual user to form his/her opinion regarding the quality of information presented in websites. In this article, the authors enumerate the general principles to be followed while assessing the quality of internet health information and suggest a selection of health websites for prescribers and consumers.

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'Healthinsite' Criteria

'HealthInsite' (www.healthinsite.gov.au) was set up by the Australian Department of Health and Aging as a gateway to high quality health information on the internet. They have come up with five main questions to be asked while checking the quality of health websites.[2] The questions are:

1) *Why the site was created?* Who developed the site and whom is it aimed at? What was the purpose behind creating the site?

2) *Who is responsible for the information displayed on the site?* Does the site state who is responsible for the information? What are the author's qualifications? Are the contact details of the author/s available? Who approves the

information for the site and what are their qualifications?

3) *Is the subject coverage complete and in depth?* Does it include links to other reputable sites? Does it provide balanced and unbiased information? Is there help available, either by instructions on the site or by e-mail? For example, the information on treatments should cover their mode of action, their benefits and risks, their effects on the quality of life and the consequences of non-treatment.

4) *Is the information up-to-date?* How often is the site updated and is the date of the last update clearly visible on the site?

5) *How easy is the site to use?* Is navigating between sections and finding information within the site easy?

'Health On the Net' principles

The 'Health On the Net foundation' has evolved the HON Code of conduct (HONcode) for medical and health websites [3]. There are eight principles listed in the code. They are authority (advice will generally only be given by medically trained and qualified professionals), complementarity (the information on the site is designed to support, not replace, the existing relationship between a patient and healthcare provider), confidentiality, attribution, justifiability, transparency of authorship, transparency of sponsorship and honesty in advertising and editorial policy.

QUICK Guide

The Health Development Agency, the National Health Service and the Centre for Health Information Quality of the United Kingdom have produced a Quality Information CheckList (QUICK) guide for checking information on websites [4]. The questions to be asked are:
a) Is it clear who has produced the information?
b) Are the aims of the site clear?
c) Does the site achieve its aims?
d) Is the site relevant to me?
e) Can the information be checked?

f) When was the site produced?
g) Is the information provided suffering from any biases? Does the website mention potential sources of bias?
h) Does the site mention other options which are available? For example, other treatment and diagnostic modalities.

Evaluation criteria of the New Mexico State University:

The five criteria to be evaluated are authority, accuracy, objectivity, currency and coverage [5].
a) Authority: Is any author mentioned? Is the author qualified? Who is the sponsor and what is the reputation of the sponsor? Is information about the author and sponsor mentioned on the website?
b) Accuracy: Is the information reliable and error free? Is there an individual/s who verifies the information uploaded on the website?
c) Objectivity: Is the information biased in any way and designed to sway opinion? Is there any advertising on the webpage?
d) Currency: Is the page dated and is the date of the last update mentioned on the web? Are the links current and are they all accessible?
e) Coverage: What are the topics covered? What is the value of the material and the depth of coverage of the topics?

Iona College Evaluation Form

Iona College in the USA has created a comprehensive evaluation form for websites (http://www.iona.edu/library/help/wwweval uation/evaluationform.pdf) which mentions the parameters of currency, authority, coverage, objectivity, accuracy, speed, general appearance, ease of navigation and use of graphics/sound/video as the assessment criteria.

To summarize, the features to be looked for while evaluating a website are, authority, transparency of authorship and sponsorship, accuracy, complementarity of information (for patient/consumer websites), currency, coverage, caution statements, provision of

means to verify the information presented and ease of navigating the website.

Nepalese Health Sites On The Web

'Nepalnet' (www.nepalnet.net) is a guide to Nepalese websites on the net. The site has various features like site of the month and lists the best 51 websites. It is a portal to all Nepalese websites, including health websites. The portal lists the websites with best content, navigation, design, technology and progress. Indexing and archival services of sites are available.

'HealthNet Nepal' is a non-governmental organization (NGO) that serves the Nepalese health community by providing affordable internet services, access to health information and information-sharing initiatives [6]. 'HealthNet Nepal' (www.healthnet.org.np) provides access to a wide range of locally generated medical and public health information resources. Databases, full text journals and health statistics are available. A drawback may be that some of the features are restricted to subscribers of the internet service.

The Kathmandu University Medical Journal (www.kumj.com.np), Journal of the Nepal Medical Association (www.jnma.com.np) and Nepal Journal of Neuroscience (www.neuroscienceforum.org.np) are among the many Nepalese journals which allow full text access.[7] 'XenoMed' (www.xenomed.com) is another discussion forum for Nepalese doctors. Medical news room, jobs and opportunity, Ask Doctor (to get online help) and Medical admissions are a few sections. There is a section for medical and dental students and information about Nepalese medical colleges is available. The lounge and medical exams are other highlights.

The website of the 'Mountain Medicine Society of Nepal' (www.mmsn.org.np) may be of interest to people who are interested in high altitude medicine or the wonderful mountains of Nepal and the health problems of the people who live there. Different

medical colleges, hospitals and government agencies in Nepal have their own websites. However, some of the websites are not updated regularly and some of the hyperlinks may not be functional. Visual content may be poor (though it is rapidly improving) and navigation may not be easy.

Indian health sites on the web

'MedIndia' is a portal which provides links to Indian medical journals, medical conferences and doctor's home pages. 'MedIndia' (www.medindia.net) has sections for both doctors and patients. This health helpline gives emergency numbers and helps to locate doctors, hospitals, chemists, health NGOs and eye banks. 'Health News' and 'Medical Humour' are added attractions. The Health encyclopaedia is useful. The site is updated regularly and the organization responsible for the information content is clearly delineated. It is a good one stop shop for health information.

The 'Health and Medical Section' of the Government of India directory (http://goidirectory.nic.in/health.htm) provides links to hospitals, medical institutions, research councils/centres and other health institutions. 'WebHealth Centre' (www.webhealthcentre.com), which is maintained by the Tata Consultancy Services (TCS), is a good site. The telemedicine station, online consultations, the ECG heart line, expert speak, spiritual support and health centres make it a useful site for both doctors and patients. The student centre contains MCQs, online tests and study material for PG entrance exams.

Other Medical Sites On The Web

'HINARI' (www.who.int/hinari/en/) provides access to over 6400 leading journals. Full text articles before 1995 may not be available. 'Web' (www.webMD.com) advertises itself as, 'What you need when you need it'. 'Doctor's Guide' (www.docguide.com) provides access to news and webcasts and people have a chance to receive news and updates from

his/her area of specialization. 'E-Medicine' (www.emedicine.com) provides instant access to the minds of medicine. Spotlight, drug of the month, resource centres, CME and patient education are different sections. 'Pubmed' (www.pubmed.com) and the sites of the Centers for Disease Control (www.cdc.gov) and 'National Cancer Institute' (www.cancer.gov) are very useful.

Drug Information Sources For Prescribers On The Web [9]

The 'Australian Prescriber' website (www.australianprescriber.com) provides access to full text articles. 'Medsafe' (www.medsafe.govt.nz) provides detailed product monographs on drugs. 'Medscape' (www.medscape.com) and 'Evidence Based medicine' online (www.ebm.bmj.com) provide access to reviews on therapeutics. The 'Turning Research Into Practice (TRIP)' database (www.tripdatabase.com) and the 'Cochrane database of systematic reviews' (www.cochrane.org) are good sources of information on evidence based medicine. 'No free lunch' (www.nofreelunch.org) and 'Healthy skepticism' (www.healthyskepticism.org) are two sites promoting the disentanglement of prescribers from the pharmaceutical industry.

Medical Sites Primarily For Patients

These sites may be of interest to prescribers also. 'Medline Plus' (www.nlm.nih.gov/medlineplus) is a good information source for laymen. The interactive health tutorials use animated graphics to explain a procedure or condition in simple terms. The website of the Mayo Clinic (www.mayoclinic.com) is a source of quality information on the web. The 'Merck source' (www.mercksource.com) is maintained by the pharmaceutical giant, Merck. Virtual body tours and links to the Merck manual and ADAM encyclopedia are useful. 'You and your doctor' informs patients about how to obtain maximum benefit from a visit to the doctor. The

website of Centers for Disease Control, Atlanta, USA, may be of use to patients also. 'Medicine Net' (www.medicinenet.com) is a comprehensive site, but it does contain sponsored links. 'Diseases Explained' (www.diseases-explained.com) explains common diseases in a step-wise manner, using beautiful colored diagrams and pictures.

'MedIndia' (www.medindia.net) provides a section for consumers. 'Doctor NDTV', maintained by the news channel, NDTV (www.doctorndtv.com) contains information on diseases, drugs, fitness, first aid, nutrition and travel and health. 'WebHealth Centre' also contains sections which may be useful to laymen. 'HealthNet Nepal' also contains a consumer forum which may be of interest.

The 'Australian portal HealthInsite' (www.healthinsite.gov.au) provides access to quality information on the web. Health topics, international health information, medicines, personal queries and questions to ask your health professional are highlights. The site mainly sources articles from Australia. The 'Kidshealth website' (www.kidshealth.org) is useful for parents who struggle with the difficult task of raising children. The American Academy of Family Physicians maintains the website (www.familydoctor.org) which has sections for different age groups. There is a link to the Harvard newsletter. The National Health Service (NHS) website from the United Kingdom (www.nhsdirect.nhs.uk) has features which may be of interest to patients in South Asia [8].

The search engines, Google (www.google.com), Lycos (www.lycos.com), Hotbot (www.hotbot.com) and Mooter (www.mooter.com) provide links to a good selection of health websites. However, the information contained, should be verified against the criteria listed. The websites 'MSN' (www.msn.com) and 'Yahoo' (www.yahoo.com) also offer a good selection of health related sites.

The sites mentioned above are just a small selection of websites for health professionals and patients. The most frequently mentioned features of a good site are, ease of access and navigation, clear presentation, use of appropriate language, completeness of information and ways to assess the credibility of the information provided [1].

These guidelines will be helpful for healthcare professionals to assess the quality of information presented in health websites. These principles should also be disseminated among patients so that they can access reliable good quality information. In this age of information technology, it is imperative to develop critical appraisal skills [Table/Fig 1] [Table/Fig 2].

(Table/Fig 1) Examples of websites for medical professionals

Website	URL
Nepalese	
HealthNet, Nepal	www.healthnet.org.np
XenoMed	www.xenomed.com
Indian	
MedIndia	www.medindia.net
WebHealth Centre	www.webhealthcentre.com
Other countries	
Doctor's Guide	www.docguide.com
E-medicine	www.emedicine.com
HINARI	www.healthinternetwork.net
Pubmed	www.pubmed.com
Centers for Disease Control & Prevention	www.cdc.gov

(Table/Fig 2) Examples of health sites for consumers

Website	URL
Nepalese	
HealthNet Nepal	www.healthnet.org.np
Indian	
MedIndia	www.medindia.net
Doctor NDTV	www.doctorndtv.com
WebHealth Centre	www.webhealthcentre.com
Other countries	
Medline Plus	www.nlm.nih.gov/medlineplus
Mayo Clinic	www.mayoclinic.com
Merck Source	www.mercksource.com
Medicine Net	www.medicinenet.com
Diseases Explained	www.dieases-explained.com

References

[1] Hopkins H, Fogg S. Assessing health information on the internet. The Australian Health Consumer 2002; 2: 21-23.

[2] How to assess health information online. http://www.healthinsite.gov.au/topics/How_to_Assess_Health_Information_Online. Accessed on 24/07/09.

[3] HON code of conduct (HONcode) for medical and health websites. http://www.hon.ch/HONcode/Patients/Conduct.html. Accessed on 24/07/09.

[4] The QUICK guide to checking information quality. http://www.avon.k12.ct.us/enrichment/Enrich/quickgr4-0.htm. Accessed on 24/07/09.

[5] Beck S. why it's a good idea to evaluate web sources, 1997. http://lib.nmsu.edu/instruction/eval.html. Accessed on 24/07/09.

[6] Pradhan MR. Health resources and internet with reference to HealthNet Nepal. Kathmandu University Medical Journal 2003; 1: 297-304.

[7] Magar A, Jaiswal S, Shrestha S. What's on the net? - Review of Nepalese medical websites. Kathmandu University Medical Journal 2004; 2: 77-79.

[8] Shankar PR. A critical appraisal of drug information sources for prescribers. Drug Information Bulletin 2005; 3(1):2-3.