

Doctors, patients and the Internet: time to grasp the nettle

Sanjay Sastry and Peter Carroll

ABSTRACT – The Internet, the fastest growing technology in society, has been driven by the public's hunger for fast, cheap communication. The modern patient increasingly presents to their doctor with an Internet diagnosis and treatment plan, obtained from a website with inaccurate or highly biased information. Doctors have limited access to the Internet in the workplace and often find it difficult to answer specific medical questions using routine search engines. The Internet provides an unparalleled opportunity to revolutionise medical education, bedside decision-making, patient records and communication between professionals and patients. Co-ordination between government, the Royal Colleges and the healthcare industry is required to develop the necessary software and hardware to help doctors and patients use the Internet to their advantage.

KEY WORDS: access, doctors, Internet, on-line, patients, search engines

Introduction

The Internet is the INTERnational NETwork of computers that are linked up to exchange information¹. Born of two mothers, the US military and the international scientific community², the network was conceived thirty years ago to serve as a method of exchanging scientific information and intelligence that would be resistant to nuclear attack. Since commercial constraints were lifted in 1991, its rate of growth has eclipsed all preceding technologies (ie radio and television)³. The general public has driven the Internet revolution through its hunger for information, and nowhere is this more true than in the health arena, with 54% of the adult on-line population searching for health information⁴. This has created an unrivalled opportunity to improve the communication of health information to the masses and the provision of relevant resources to hard-pressed doctors.

In this article, we examine the health of the Internet medical engine room and look at where

improvements in Internet access and use, and the creation of relevant technologies, could bring tangible benefits to doctors and patients.

Patients and the Internet

Historically, patients presented to their doctor with a symptom complex that required careful consideration to determine its aetiology. This would be followed by a discussion with the patient and the implementation of an action plan or, perhaps, a period of inactivity. It is becoming increasingly common for patients to present to their doctor with an 'Internet diagnosis', a request for treatment courtesy of a 'virtual consultation' or a print-out from a 'health website' which they want to have explained to them. This presents a new challenge for those incumbent of the Hippocratic oath, and one that is not specifically addressed during undergraduate or postgraduate training.

It has been estimated that there are 7 million websites, of which 100,000 pertain to health⁵. These are of dubious quality as research has shown^{6,7} and can be dangerous, even fatal⁸. Kite marks, ethical standards and 'cool tools' have been devised to help protect patients from misleading information. By 1997 there were 47 different kite marks for healthcare websites⁹; on close inspection they had few objective similarities, their presence serving to amplify rather than to solve the problem of improving health information on the Internet¹⁰. The recent failure of the World Health Organisation to secure a 'health' domain standard sadly reflects the status of a unified approach to solving the problem of branding an easily recognisable standard for e-health information.

Several international ethical boards have agreed codes of practice for healthcare websites^{11,12}, although there is little public awareness of their existence. Department of Health funding led to the emergence of two 'cool tools', DISCERN and QUICK, designed to help Internet users evaluate websites. Again, most users are unaware of such tools, or do not have the time to evaluate a website in such detail. NHSDirect, the government-funded NHS website aimed at a public audience¹³, enjoys

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significant numbers of users, but we were unable to find reference to these 'cool tools' on their website.

Central to any assessment of a website is information on who owns and authors it. Healthcare professionals have the health needs of the patient as their primary concern, whilst commercial sites are the servants of their share price. This dichotomy of interest is of concern to patients, healthcare professionals and policy-makers alike. Whilst there is a significant number of not-for-profit websites authored by doctors¹⁴, the majority of sites are commercial.

The Internet patient therefore represents a mixed blessing for the modern doctor; patients motivated to look into their illness using the Internet may be more compliant with agreed treatment¹⁵, yet patients with little medical knowledge, who are prejudiced in favour of a particular treatment after reading a glossy but flawed website, will add considerably to the doctor's workload.

Doctors and the Internet

Over 80% of doctors are now on-line¹⁶; 50% use the Internet daily, but only 20% feel that it is essential to their professional practice¹⁷. A doctor's medical Internet user requirements are information, information, information. That is: information that answers the clinical question; information that is evidence based; and information that is available at the point of clinical decision-making.

A brief tour of medical information on the Internet directed at doctors will take you through a variety of resources including on-line versions of medical journals¹⁸⁻²⁰, quick reference texts²¹, major reference texts²², medical databases²³, evidence based resources²⁴⁻²⁶, medical news wires^{27,28}, government guidelines²⁹ and advice on how to communicate with your patient by email³⁰⁻³².

Despite this vast array of resources available on the Internet, there are significant difficulties in its use for research or quick

reference. Two particular problems facing doctors are poverty of access to the Internet, and the inability of search engines to answer specific medical questions.

Access to the Internet

The government has mandated that all GP practices will be connected to the Internet by 2002³³. Their vision was to achieve this through connecting all doctors to the NHSnet and thus provide access to the Internet. Despite a slow initial uptake of NHSnet, 80% of GPs are now connected, although it remains to be seen how many become regular users. The integration of commercial practice management systems with NHSnet terminals may help this process.

Hospital doctors are the poor cousins of GPs when it comes to access to the Internet, with fewer Internet connections per doctor. Internet access is not provided on a per capita basis, is often funded from departmental budgets and is frequently only available during office or library hours. Despite these handicaps, some specialists are providing their patients with online medical advice, and even trying to develop 'cyberclinics'³⁴.

Search engines

Characteristically, a doctor uses multiple resources when researching a subject. Although numerous electronic resources are available on the Internet, finding the answer to a specific question can be extremely challenging. This is partly because search engines have no understanding of medicine. Also doctors tend to be poorly-trained in this area. Thousands of results are typically returned from a single search, and many of the references returned are not freely available on-line. A notable exception to this is Organising Medical Networked Information³⁵, which is a gateway to evaluated, quality Internet resources in health and medicine.

Whilst a small number of doctors have embraced the Internet and use it for patient communication, speedy specialist referral and rapid access to up-to-date clinical information³⁶, the majority, particularly in the UK, do not have the necessary access to or knowledge of this growing resource. These problems, combined with poor quality health websites and ill-advised patients, contribute to the modern doctor's cyber health frustration.

What needs to be done – a vision

The Internet is unparalleled in allowing rapid communication between users in a low-cost and easy-to-use format. Software and hardware technologies will continue to progress, driven by industries other than healthcare. This provides an opportunity for doctors, the government, medical schools and the Royal Colleges to collaborate with industry to develop quality resources. A co-ordinated approach to the Internet is essential, as allowing the process to be driven by market forces may not lead to the best outcome for patients and their doctors.

In practical terms, harnessing this technology will allow

Key Points

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The Internet is the fastest growing communication medium in society today
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Patients increasingly present to their doctor only after consulting Internet websites, many of which provide inaccurate or highly biased information
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Doctors have limited access to the Internet in the workplace and often find it difficult to answer specific medical questions using routine search engines
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The Internet could be used effectively in medical education, bedside decision-making, patient records and communication between professionals and patients
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Co-ordination between government, the Royal Colleges and the healthcare industry is required to develop the necessary software and hardware to help doctors and patients use the Internet to their advantage
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doctors to communicate rapidly with their patients regarding results of investigations, treatment options, management plans and prescriptions. It will also enable doctors to communicate more efficiently with each other for education, support and research. Specific short-term goals would be to:

- provide consolidated, approved modules for undergraduate and postgraduate training on-line
- develop software to answer clinical questions, perhaps by merging resources such as the Cochrane Library and Clinical Evidence to compile a central resource of 'frequently asked questions'; or by creating intelligent search engines that understand the medical domain, which could offer personal reviews of resources or recommend search pathways that other users have found useful (similar approaches have proved popular in other industries, eg, Autonomy, Amazon³⁷)
- develop secure hospital networks through which doctors can transfer patient information to facilitate patient referrals, discharge letters to GPs, and results of investigations.

Doctors will also need an appropriate tool to help them to use these resources. One possibility is an electronic, pocket-sized Vade Mecum which can be taken to clinic and on ward rounds, and which interfaces with electronic patient records and pathology and radiology services.

Conclusion

In today's climate of unprecedented media reporting of medical errors, and a General Medical Council that has lost the public's confidence, the doctor-patient relationship is in need of a revival of trust³⁸. The Internet is a great opportunity for the profession to achieve this 'new start' by revolutionising the communication process. Doctors, their professional bodies and the government must come together to shape the medical Internet world in order to benefit doctors and their patients.

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