

## Conclusion

This brief survey of sites has identified that there is a wide variation in both the design and quantity of content of sites that offer information about GPs. There are sets of guidelines that developers are encouraged to follow. However, consistent application of them appears to be wanting. This applies to both the sites created by GPs and those hosted by NHS organisations. The sites created by GPs have particular problems in terms of mechanisms for remaining current and having a simple, memorable URL. NHS-based sites seem to be inconsistent with their policy of providing information and in some cases a Web presence.

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## News item

### National Library of Medicine (NLM) Databases

Internet Grateful Med (IGM) is being phased out <<http://igm.nlm.nih.gov/>>. It is being replaced by the new NLM Gateway <<http://gateway.nlm.nih.gov/gw/Cmd>>. The details are given in the NLM Technical Bulletin article at <[http://www.nlm.nih.gov/pubs/techbull/jf01/jf01\\_igm\\_phaseout.html](http://www.nlm.nih.gov/pubs/techbull/jf01/jf01_igm_phaseout.html)>. PubMed <<http://www.ncbi.nlm.nih.gov/PubMed/>> will become the point of access for MEDLINE. The technical bulletin gives the new access routes for other NLM databases.

A new tutorial is available for help with searching PubMed. It is located on the left-hand menu bar of the home page.

MeSH (Medical Subject Headings) is the thesaurus used by NLM for indexing articles and for searching databases such as MEDLINE. It has its own Home page at <<http://www.nlm.nih.gov/mesh/meshhome.html>>.

MEDLINEplus, NLM's consumer health web site, has added a series of interactive modules for patient education <<http://www.nlm.nih.gov/medlineplus/tutorials.html>>. These take about 10 minutes and use animated graphics and sound. The text can also be printed as a pdf file.

Downloadable search filters for PUBMED can be found at GIMBE, the Evidence-Based Medicine Italian Group

<<http://www.gimbe.org/Praticare-EBM/PubMed-Strategies.do>>.

## Internet Medicine 2001

### 14 March 2001, British Library, London Meeting report

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Internet Medicine 2001 was a conference hosted by doctorsworld.com and chaired by its CEO, Dr Doron Junger FRCS. A copy of the programme can be viewed at <<http://www.doctorsworld.com/bannerlinks/draft.asp>>. All of the speakers' slides and also an audio stream of the conference are also accessible to registered members of doctorsworld.com.

As soon as I arrived in the British Library for the conference I felt a little out of place. The conference was primarily geared towards the average GP but my interest in computers led me to register. I turned out to be the only medical student to attend. The conference was split into three sessions, each being moderated by a doctor with extensive experience with medicine and the Internet.

The first session, entitled '**The Internet and the Future of Clinical Practice**' dealt with issues relating to development of current platforms already in place, such as NHSNet, and their integration into general practice. A surprising statistic supplied by Dr Junger in his introduction was that currently only 13% of US doctors use the Internet to communicate with their patients<sup>1</sup>. The session moderator was Dr Simon Wallace, a GP who has worked in information and communication innovations (for example, telemedicine and iDTV) for the last ten years.

Carrie Armitage of the NHS Information Authority gave the day a flying start with a passionate talk on '**NHSNet**' and the aims of the NHS for the next few years. She has only been in charge of the NHS Intranet system since January of this year but has been working for the NHS since 1993. She got involved with NHSNet after deciding that she could not just sit by complaining about the shortfalls of the system and facilities being provided.

So she switched sides. More information on NHSNet can be found at <<http://www.nhsia.nhs.uk/nhsnet/>>.

Dr. Stuart Barton, editor of *Clinical Evidence* at the BMJ Publishing Group <<http://www.clinicalevidence.com>>, also contributed to the session with a talk on the '**Application of online evidence-based knowledge**'.

Dr Tony Delamothe is responsible for the second most highly visited medical Web site in the world, <<http://www.bmj.com/>>, and spoke on the influence of the Internet on scientific publications. Access to online journal articles versus paper forms of the same was an issue that cropped up more than once. Concerns had been aired by publishers that free online versions of their publications would cause subscription numbers, and hence revenue, to drop considerably. However, the numbers seem to suggest that despite the availability of papers free online, doctors do not intend to drop their subscriptions to the traditional paper form.

It was in session Two, '**Practical Applications in Daily Practice**', focussing on the development of Web sites for general practices, when the major issue of security was initially addressed. Expansion and recursion of security issues infiltrated topics throughout the rest of the conference. Doctor-patient confidentiality is of course a primary concern where the possibility of information insecurity exists. Web site interactivity was also a topic much discussed in this session, moderated by Dr Keith Barnard, Medical Advisor to *GP Magazine* and author of the *A-Z of Medical Websites*. The idea of patients being able to contact their GP, make appointments, even order repeat

prescriptions online, through the Web site, was something that many of the conference attendees were wary of, simply because of security issues centring on the problem of doctor-patient confidentiality.

Dr Philip Koczan presented the case of the 'Paperless Practice', advocating digitalisation of information. Particular emphasis was placed here on backing-up data amassed in digital form. The effect on a practice if medical records and patient data were to be destroyed would be phenomenal. At his own practice, in Chingford, he impressively estimates that in the event of a server crash he could restore patient records from back-ups to another location in 30 minutes.

A talk by Dr. Alun Price on 'The Do's and Don't of Practice Websites' covered basic Web site design, with a particular emphasis on simplicity and ease of navigation, the important aspects for any good Web site. To view the largest and most up-to-date collection of GP Web sites, compiled and maintained by Dr. Price, go to <http://www.internet-gp.com/gpsites>.

The session also included a talk entitled 'The Virtual Classroom' by Dr Alan O'Rourke, who is a lecturer at Sheffield University's Institute of General Practice & Primary Care <http://www.shef.ac.uk/uni/academic/D-H/gp/>. Although the use of the Internet in training medical students, which seems to me a fairly obvious application of the technology, was conspicuously absent from the plot, the talk did give a very comprehensive view of online education for adults.

Session Three, after lunch, was entitled 'Challenges of the Internet' and moderated by Dr Dan Rutherford, Medical Director of [netdoctor.co.uk](http://www.netdoctor.co.uk) <http://www.netdoctor.co.uk/>.

The first speaker in this session came from literally the other side of the world. Currently practising in New Zealand, Dr. Andrew Humphrey trained in Britain and returned to share with us his experience of running a practice that utilises not only the conventional face-to-face scenario for consultations but also employs email correspondence and even Internet chatrooms for his patient

interviews. Most of these services are provided through his Web site, <http://www.fraserstreetdocs.co.nz>.

Before you fire up your Web browser for a consultation with him, however, you should know that for obvious security reasons he will only correspond in this way with patients registered with him personally at his own practice. These security issues were reviewed in depth. Naturally all this electronic correspondence is encrypted, using PGP ('Pretty Good Privacy') encryption techniques. This technique requires that each party have a 'public key' that is not hidden and a 'private key' that is kept secret. For more information on this kind of encryption a good Web site to have a look at is <http://www.mindspring.com/~aegreene/pgp>.

Andrew Tucker, Head of Communications at Pharmacy2U <http://www.pharmacy2u.co.uk>, spoke about the coming trial implementation of the e-prescription, due to start in July this year. The aim is to have the concept in full use by 2004, the same time as patient records are due to be fully available to doctors via NHSNet. In fact, there are plans to link the two to provide a kind of error-checking system that checks patient records for contraindications, for example an allergy to penicillin, against the prescription ordered. Foreseeable advantages of the e-prescription over the current FP10 form are, for example, transference of prescription management from the GP to the pharmacist and reduced fraud due to increased security provided by encryption as well as digital signatures. For those who do not know how a digital signature works, once the document is 'signed' by inputting a PIN number and a long number generated by a personal encryption algorithm, not only is the author of the document uniquely identifiable but the document content is frozen. Any subsequent editing attempts will result in data corruption of the message.

The final speaker was Dr Paul Lambden who is both Medical and Dental Principal of the St Paul, the newest of the medical defence organisations <http://www.stpaulinternational.com>. He outlined the legal issues surrounding the security problems touched on over the

course of the conference and how by careful use of adequate security measures doctors can protect themselves and prevent misplaced accusations from patients.

I attended the conference merely hoping to bring myself up-to-date with current efforts to integrate the Internet with medicine. Not only was this expectation fully realised but I also came away with a slightly deeper insight into the practical world of medicine, which pre-clinical medical students such as myself are often unaware of until they begin clinical work in hospitals and general practice. For a long time I have been hearing about projects being prepared for implementation and proposals for Internet integration schemes in hospitals and general practice and yet seeing nothing on the outside. It was therefore somewhat satisfying to see that internally at least, the wheels have been set in motion and aims set for the near rather than distant future. I feel that for any programme relating to something so fickle as the Internet and computer technology, to have a distant long-term goal is complacent and may even suppress technological evolution, which is really the last thing we want in the *Age of the Internet*.

Even though medicine's plunge into computers is still in its infancy and quite far behind other fields, tremendous advancement has been achieved to date and, thanks to forums like this conference, will continue to be achieved. Who knows, pretty soon we may be going to see our virtual e-doctor at the e-clinic at [www.myclinic.nhs.uk](http://www.myclinic.nhs.uk) for an e-consultation, getting an e-prescription sent directly from the doctor to the pharmacy by email and the medication to our door, all without setting one foot outside the front door of our home. Perhaps it will make my job easier too!

**Note:** Doctorsworld.com is a private company at <http://www.doctorsworld.com>. Content is accessible only to GMC members and medical students (you must have either a student number or GMC membership number to register).

## References

1. Computing in the Physicians' practice; A Harris Interactive survey. *Harris Interactive Health Care News* 2001. 1(8):1-3 [http://www.harrisinteractive.com/about/healthnews/HI\\_HealthCareNews2001Vol1\\_iss8.pdf](http://www.harrisinteractive.com/about/healthnews/HI_HealthCareNews2001Vol1_iss8.pdf) [Accessed 20 April 2001]