ORIGINAL ARTICLE

Using the internet to coordinate a teaching programme in accident and emergency medicine

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The internet permits inexpensive and rapid communication of multiple forms of information across geographical boundaries. The authors describe the development of an internet based mailing list and web site to coordinate the regionwide accident and emergency specialist registrar teaching programme. The process entailed in setting up these resources is explained. The initial experiences of implementing these technologies and the resulting advantages are discussed.

between host units. They are organised by a nominated trainee and are currently not formally funded. Each session requires each SpR to undertake some preparatory work and a summary is produced at the end. Traditionally this has involved multiple mailshots and telephone calls to each SpR and trainer. This programme has developed on a background of increasing SpR numbers spread over an expanding range of training units, and a requirement to improve the training value of the sessions.

To achieve these aims within the limited resources available a Northern Region A&E SpR mailing list and web site was established.

Most accident and emergency (A&E) specialist registrar (SpR) training programmes comprise relatively few registrars distributed between several units. Despite this many regions run regular regionwide activities such as teaching sessions, exam preparation, audit, and research. These are usually organised by trainees with limited secretarial support and funding.

The internet is now widely accessible, inexpensive, and permits rapid communication of multiple forms of information across geographical boundaries. Its role in medical teaching is expanding; it is already used for dissemination of teaching material in medicine and for forum discussions on topics of specialist interest,^{1–5} including the Acad-ae-med mailing list aimed specifically at A&E (see table 1).

We describe the use of internet technologies to facilitate A&E SpR teaching in the Northern region.

DEVELOPMENT

The Northern Region employs 18 registrars in 10 units in four counties. The SpRs attend regional teaching sessions every two weeks rotating

Mailing list

This permits easy dissemination to all SpRs and trainers of all news relating to the A&E SpR teaching programme via electronic mail (email).

Web site (www.northernaemweb.org.uk)

The primary purpose of the site was to coordinate the teaching programme and so a section of the site relates to the teaching meetings. A timetable for the academic term is displayed. For each session a preview is available, this provides details of the format and objectives of the session including the preparatory work required by all SpRs. Maps are provided to each host location. Subsequently a summary of the session is published on the site.

A separate section of the site contains other teaching resources relevant to SpR training, including guides to current Fellowship of the Faculty of Accident and Emergency Medicine examination (FFAEM) regulations, aids to critical appraisal, copies of clinical topic reviews, best evidence topic reviews (BETs), useful "PowerPoint" presentations, and links to other useful web sites.

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Table 1 Web sites relevant to accident and emergency training

National	
Acad-ae-med mailing list	www.baem.org.uk/acadae.htm
BAEM	www.baem.org.uk
BAETA	www.baem.org.uk/baeta.htm
FAEM	www.faem.org.uk
Regional	
North Thames region	www.teachingdocs.co.uk
SouthEast Thames region	www.baem.org.uk/setraitees/
Wessex region	www.users.globalnet.co.uk/~coyote/wraeta.htm
West Midlands region	medweb.bham.ac.uk/wmaet/
Yorkshire region	www.users.totalise.co.uk/~alockey/index.htm

BAEM, British association for Accident and Emergency Medicine; FAEM, Faculty of Accident and Emergency Medicine; BAETA, British Accident and Emergency Trainees Association.

Table 2 Sources of technical advice regarding web site and mailing list construction

General reference including internet tutorials and HTML tutorials	www.w3schools.com/ wdvl.internet.com/Authoring/Tutorials/ www.weballey.net
Mailing lists	www.topica.com/ www.coollist.com/
WYSIWYG Software tutorials for example, Frontpage Express DreamWeaver	www.webmasterbase.com/tutorials/index.php www.trainingtools.com/
FTP tutorials	cybered.uml.edu/tutorial/ftp/leech/cy_index.htm www.gj.net/reanet/support/leechftp/index.htm
HTML, HyperText Markup Language; WYSIWYG, What You See Is What You Get; FTP, File Transfer Protocol.	

TECHNICAL DEVELOPMENT: AN OVERVIEW

The electronic mailing list was secured free of charge from one of the mailing list providers on the web (table 2). Membership can be open to all or restricted to those who are considered eligible. The electronic mailing list enables members to send and receive emails via this coordinated list. One simply sends an email to a single email address and the message is disseminated to all on the list. This saves people from needing to keep a record of all members of the list or changes in email addresses. A record of every email sent is kept on the mailing list web site.

The web site was also secured free of charge. There are many free internet service providers (ISPs) available in the UK at the present time. Each offers an amount of web space, which can be accessed via local phone calls. Because of the nature of the internet business there is an inherent element of risk in using any free web space provider. This may be avoided by asking a local university or trust to host the web site. To maintain editorial independence, we chose to use a free ISP and have had trouble free access to an unlimited amount of free web space for over a year.

The most time consuming part of the project was the initial construction of the web site. We developed this project using widely available software without outside assistance. There are several excellent sources of information concerning the basic principles available on the internet (table 2).

In terms of site appearance, it is worth noting that a simple layout without too many elaborate graphics is the most sensible option to start with. Most of the material on the site is text based. Preparation of this material for the site involves either a word processor (for example, Word 97) or a web page publisher (for example, Front Page Express, free with Windows 98, or other WYSIWYG (What You See Is What You Get) Editor). Using these tools, the material can be converted to HTML (Hyper Text Markup Language) format very easily. HTML is the basic language of the internet. These HTML documents are then published on the site by a process called FTP (File Transfer Protocol), using one of the many freely available FTP programmes (for example, LeechFTP). Aside from the text based material, we also publish graphics based material on our site. PowerPoint 97 can convert presentations to a web based format. Other graphics can be manipulated using one of the widely available image manipulation software packages (for example, Adobe PhotoDeluxe). The difficulty with graphics based material is balancing resolution (quality) and file size. The better quality the picture, the bigger the file size. Graphics based web sites can be attractive but are cumbersome; as graphics tend to occupy relatively large file sizes they take a long time to download and may be frustrating to users.

Because of concerns regarding general access to regional intellectual property (for example, clinical topic reviews) some

of the site has been protected by password access. The site does not contain confidential clinical information.

The cost of the development, in terms of time, in order to secure a suitable web site and set up its layout and design, equates to several hours. The ongoing upkeep of the site requires at least half an hour per week. Though there are no direct financial costs as such, depending on your web space provider, the cost of connecting to the internet to update your files may need to be taken into account.

DISCUSSION

The mailing list is now used to disseminate regular notices regarding the teaching programme, eliminating the cost of mailshots and telephone calls that were necessary before the commencement of this project.

All regional SpRs and trainers have access to the internet, and the web site has been enthusiastically embraced. To monitor the amount of traffic to the site we have added a simple counter to our site. Since the web site was developed the teaching programme has undergone several revisions, all have been managed by electronic communication. The coordinating SpR spends no more than two hours per month, and requires no secretarial support to administer the programme. The teaching resource is rapidly expanding. Those new to the grade have information on training regulations and a library of PowerPoint presentations for SHO teaching. Those nearing the FFAEM examination have access to recent clinical topic reviews and summaries from "management" teaching sessions. Future applications may include coordinating regional SpR research projects and recruitment.

There are many other sources of information relevant to A&E training available on the internet. Nationally, there are web sites produced by both the British Association of Accident and Emergency Medicine and the Faculty of Accident and Emergency Medicine. Acad-ae-med is a popular mailing list for discussion of all topics relevant to A&E. Our regional web site is only one of several web sites that are being developed by A&E trainees nationwide (table1).

CONCLUSION

It is our experience that the internet offers technologies that can be inexpensive yet effective resources to facilitate the training of SpRs, based in multiple units within a single programme. We hope that our own efforts at web site development may serve as an example of the potential that the internet has to offer the specialty of A&E.

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Contributors

Tony Shannon initiated the project, developed the web site, and co-wrote the paper. Mike Fenwick contributed core ideas and co-wrote the paper. Tony Shannon is the guarantor for the paper.

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