CPD for GPs using the THOR-GP website

Kevan Thorley, Susan Turner, Louise Hussey, Nazia Zarin and Raymond Agius

Background
An estimated 3200 UK general practitioners (GPs) practise occupational medicine on a sessional basis.

Aim
To assess the educational needs of GPs practising occupational medicine and participating in The Health and Occupational Reporting (THOR) network.

Methods
A questionnaire survey of GPs participating in a national reporting scheme, recording occupational ill-health from general practice (THOR-GP). The questionnaire used scales derived from the syllabus for the Diploma of the Faculty of Occupational Medicine to assess the use of the THOR-GP website for continuing professional development (CPD). Questions were also asked concerning the attitudes and experience of these doctors to CPD in occupational medicine.

Results
The response rate was 73% (213/291). Only 22% of responders used the THOR-GP website for CPD. Lack of time was the most frequently cited reason for not using the site. The topics provided on the website which were rated least interesting also appeared as requests for further information in questionnaire returns.

Conclusion
Online learning has the potential to fulfill the needs of GPs practising occupational medicine. The designers of material for online learning should actively manage and modify the material available in response to educational needs. Further research is required into the clinical and business outcomes of online learning for these doctors.

Key words
Continuing medical education; continuing professional development; e-learning; general practitioners; occupational medicine; web-based learning.

Introduction
Approximately 3200 general practitioners (GPs) practise occupational medicine in the UK [1], working on a sessional basis in addition to their primary care commitments. Most of these GPs hold the Diploma of the Faculty of Occupational Medicine (D. Occ. Med.). Web-based learning has the potential to fulfill the needs of these doctors for continuing professional development (CPD) in their occupational medicine practice. A number of web-based resources are now available to GPs for their general medical practice.

Despite the rapid growth of the Internet as a source of continuing medical education (CME), or perhaps because of its recent development and rapid growth, there has been little work in evaluation of web-based learning in terms of outcomes relating to performance change and the effect on patient or health outcomes. Most studies evaluate learner satisfaction only. A review of peer-reviewed literature related to the use of the Internet as a means of providing CME found 25 (81%) included evaluations of learner satisfaction, 16 (52%) an evaluation of learning outcomes and 2 (7%) studies evaluated performance change in clinical practice. No studies reported any evaluation of patient or health outcomes [2]. A review of studies of the effectiveness of Internet-based CME found that e-learning was as effective in imparting knowledge as traditional forms of CME, but identified a paucity of knowledge as to whether positive changes in knowledge resulting from e-learning are translated into practice [3].

Traditional CME has not been demonstrated to be successful in influencing clinical practice [4]. Studies of web-based learning which have evaluated post-learning performance demonstrate significant improvement. Such studies include a course on nutrition in public health, a programme on dermatological outpatient procedures and a primary care course [5–7].

A needs assessment for CPD of specialist occupational physicians has been developed but not validated [8]. The appraisal package for occupational physicians developed...
by the Society of Occupational Medicine (SOM) is
generic and applicable to all occupational medicine prac-
titioners; however, there is no published literature on the
uptake of this package [9].

The Health and Occupational Reporting (THOR) net-
work based in the University of Manchester Centre for
Occupational and Environmental Health (COEH) com-
prises a range of specialist and occupational physicians’
reporting schemes for work-related ill-health [10–12].
Within THOR, a designated reporting scheme for GPs,
THOR-GP, is unique in collecting cases of work-related
ill-health seen in general practice and breaks new ground
in collecting data about certified sickness absence, time
lost from work and referral patterns.

THOR-GP is a project, partly funded by the Health &
Safety Executive (HSE) for the ‘Collection of GP-based
work-related ill-health data: 2004–08’. Its website
provides information and resources for GPs who are par-
ticipating in the project, reporting details of cases of occupu-
tionally related disease. The website is also the portal for
the free CPD available to GPs participating in the project.

When planning THOR-GP, it was decided to recruit
GPs who have undertaken an occupational medicine course
organized and delivered by the COEH at the University of
Manchester and have thus qualified to take the exam for the
D. Occ. Med. as the primary ‘population’ in this project.
These ‘COEH alumni GP diplomates’ have thus completed
a definitive syllabus and shown both the level of competency
in the discipline and the motivation to participate in the
THOR-GP scheme. A small number have achieved the
higher qualification of Associateship of the Faculty of
Occupational Medicine (AFOM) and an even smaller
number hold the Membership of the Faculty (MFOM).

GPs participating in THOR-GP can access material
for their CPD in occupational medicine via the COEH
website. There are two sources of CPD material available
on the COEH website:

(i) Freely available information.
(ii) Interactive material for GPs who participate in
THOR-GP. This interactive resource has been
launched with six case studies that are intended to
be both of interest and a useful medical education
resource for the reporters. Each exercise equates to
1 h of CPD activity [13,14].

An electronic forum, consisting of all participating GPs
and staff from the COEH is used to disseminate feedback
from the THOR-GP project. Participating GPs are able
to send queries to the forum related to specific or general
issues on occupational medicine. The aim is that the
forum can make a useful contribution in improving the
likelihood of diagnosis of an occupational-related illness
and hence improve the quality of care of the patients.

The online CPD, developed from the University of
Manchester Diploma course, permits assessment and
further survey of the participating ‘diplomates’.

The aim of this study was to assess the educational
needs of GPs practising occupational medicine and par-
ticipating in THOR-GP.

Methods

The design of this study was a questionnaire survey to all
participants in the THOR-GP scheme. In May 2006,
postal questionnaires were sent to 291 GPs participating
in THOR-GP. The questionnaire was also made available
on the THOR-GP website for completion online. These
291 GPs had free access to CPD material available on
COEH’s website, both resources exclusive to THOR-GP
reporters and those freely available to non-participants.

The first part of the questionnaire asked for demo-
graphic information—age, gender, year of full registration
with the General Medical Council (GMC) and year of
completion of training in occupational medicine.

The main section of the questionnaire aimed to inves-
tigate two areas:

(i) The educational needs of the participating GPs, not
covered by existing CPD material.
(ii) Awareness of and use of the CPD material provided
on the website for GPs participating in THOR-GP.

Sources for the questionnaire design were as follows:

(i) The syllabus for the D. Occ. Med. from the Faculty
of Occupational Medicine (FOM) [16].
(ii) The content headings of the CPD material available
on the COEH website.
(iii) Feedback sections of the bmjlearning and doctors.
net websites.

The questionnaire was piloted by sending the postal ver-
sion to 10 GPs participating in THOR-GP. Only minor
changes in layout and syntax resulted from the GP pilot.

The competencies required of GPs practising occupa-
tional medicine may be divided into ‘principles’ and
‘management’. The educational effectiveness of the web-
site was therefore assessed to investigate:

(i) Understanding the principles of occupational medi-
cine.
(ii) Competence in assessment and management of spe-
cific conditions relevant to occupational medicine,
covered by the case studies.

The design of the questionnaire involved yes/no answers,
free text and a five-point scale for questions relating to
training needs and effectiveness of the website. For training
needs, this scale applied a score from 1 ‘no training needed’
to 5 ‘I definitely need more training’, while questions about
the website rated interest in the material between 1 ‘very
interesting’ and 5 ‘not very interesting’. For the effective-
ness of the website in fulfilling educational needs, the scale
was between 1 ‘very effective’ and 5 ‘very ineffective’.
Recipients of the questionnaire were sent a reminder 1 month after the first mail shot in the case of non-response.
Completed questionnaires were returned by post to the COEH and the data were extracted manually and analysed using a standard statistical software package (SPSS 13.0 for Windows).
Outcome measures for this study were as follows:
(i) The proportion of doctors contributing to THOR-GP who used the site for CPD.
(ii) The proportion of non-users reporting each of a list of possible reasons for not using the site.
(iii) Ratings of each component of the site in terms of effectiveness as an educational tool and interest to the user.
As no patient data was sought or included in the questionnaire, ethical approval was not considered necessary for this study. THOR-GP has been given ethical approval by the North West Research Ethics Committee.

Results
Two hundred and thirteen completed replies were received from 291 questionnaires sent to THOR-GP reporters.
The responders comprised of 166 males (78%) and 47 females (22%). The average age of responders was 44.8 years (SD 6.7, range 28–60).
One hundred and fifty-four responders (72%) had achieved the D. Occ. Med., 16 (8%) had the AFOM and 1 had the MFOM. Forty-two (20%) had completed their training but remained unqualified.
The mean scores for the self-assessment of educational needs as defined by the syllabus for the D. Occ. Med. are shown in Table 1. One responder failed to complete this part of the questionnaire. The part of the syllabus identified as that in which most training was required was ‘the law in occupational health employment organizations, industrial relations and trades unions’. The next most frequently identified was ‘the HSE’. In comparison, the topics in which responders felt the least need for training were the definition and scope of occupational medicine, occupational health services and ethical and communication issues.
Only 46/213 (22%) of participants in the THOR-GP scheme reported that they had looked at the educational material available to them on the website. Men appeared more likely to use the website for educational purposes than women (23% of males compared to 15% of females), although this difference is not statistically significant (P = 0.2). Age did not appear to affect website use. The mean age of those responders who used this resource was 44.4 (SD 0.96) years and of those who did not 44.9 (SD 0.53) years. The 42 responders without a FOM qualification (D. Occ. Med., AFOM or MFOM) were significantly more likely to have used the educational material on the website. Seventeen of 42 (40%) of ‘unqualified’ practitioners reported that they used the website, while of the 163 qualified practitioners, only 29 (18%) used the website (P < 0.05).
Reasons given for not using the CPD material on the website are listed in Table 2. The most frequently given reason was lack of time. One hundred and nineteen of 165 (71%) of those who had not used the website gave lack of time as the reason. One respondent did not answer the question. Sixty of 166 responders (36%) were not aware of the material available to them.
The section of the website that responders rated the most interesting was that containing the interactive case studies. Forty-two responders said that they had looked at this part of the site. The majority, 36/42 (78%), of users rated this section ‘very interesting’ or ‘interesting’, while only 2/42 (5%) rated this section as not very interesting. The least interesting section of CPD web-based

Table 1. Mean scores on self-assessment of training needs

<table>
<thead>
<tr>
<th>Core area of syllabus</th>
<th>Self-assessment mean score (SD) (n = 212) (score range 0–5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law in occupational health employment organizations, industrial relations and trades unions</td>
<td>3.67 (0.94)</td>
</tr>
<tr>
<td>HSE, appointed doctor system</td>
<td>3.01 (1.0)</td>
</tr>
<tr>
<td>Effects of work on the musculoskeletal system</td>
<td>2.95 (0.94)</td>
</tr>
<tr>
<td>Effects of work on mental health</td>
<td>2.92 (0.97)</td>
</tr>
<tr>
<td>Effects of work on cancers</td>
<td>2.89 (0.94)</td>
</tr>
<tr>
<td>Effects of work on skin</td>
<td>2.88 (0.95)</td>
</tr>
<tr>
<td>Effects of work on the respiratory system</td>
<td>2.85 (0.93)</td>
</tr>
<tr>
<td>Effects of work on infectious diseases</td>
<td>2.83 (0.92)</td>
</tr>
<tr>
<td>Ethics and communication</td>
<td>2.76 (0.93)</td>
</tr>
<tr>
<td>Occupational health services, the Occupational health team, functions and management</td>
<td>2.32 (0.91)</td>
</tr>
<tr>
<td>Definition and scope of occupational medicine</td>
<td>2.25 (0.95)</td>
</tr>
</tbody>
</table>

Table 2. Reasons for not using the educational material on the THOR-GP website

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number of responders (n = 166) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not have the time</td>
<td>119 (71)</td>
</tr>
<tr>
<td>Not working in occupational medicine</td>
<td>30 (18)</td>
</tr>
<tr>
<td>CPD in occupational medicine is not a priority</td>
<td>31 (19)</td>
</tr>
<tr>
<td>Unaware of the material available</td>
<td>60 (36)</td>
</tr>
<tr>
<td>Unable to access the site</td>
<td>9 (5)</td>
</tr>
<tr>
<td>Other reasons</td>
<td>9 (5)</td>
</tr>
</tbody>
</table>
material appeared to be that entitled ‘other aspects’ which contains supplementary material not directly relevant to a consultation in general practice. Twenty-three of 42 (57%) rated this section as ‘interesting’ and 4/42 (10%) rated it ‘not very interesting’. No user rated any section as ‘not very interesting’ (the extreme of the scale). The mean scores are reported in Table 3.

Ratings of ‘very effective’ or ‘effective’ were given by 35/46 website users (76%) in respect of meeting their educational needs about the principles of occupational medicine. Thirty-three of 46 (71%) rated the material ‘effective’ or ‘very effective’ on occupational dermatoses and on musculoskeletal conditions. Thirty-one of 46 (67%) gave a rating of ‘effective’ or ‘very effective’ for their needs in managing occupational asthma. Less highly rated in terms of effectiveness appears to be material relating to stress for which 26/46 (57%) rated it ‘effective’ or ‘very effective’ and that relating to the assessment and management of occupational cancers and to occupational infectious disease for both of which 25/46 (54%) gave a rating of ‘effective’ or ‘very effective’. No website user gave a rating ‘very ineffective’ in any of the sections.

The website users were asked to rate the user-friendliness of the website on a five-point scale, 1 equating to ‘not very—I could not find my way around’ to 5 ‘very user-friendly, no problems’. The frequency of responses is shown in Table 4.

**Table 3. Mean scores for ‘interest’ in the CPD sections of the THOR-GP website**

<table>
<thead>
<tr>
<th>Website topic</th>
<th>Number of responses</th>
<th>Mean score (range 0–5)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>43</td>
<td>2.02</td>
<td>0.7</td>
</tr>
<tr>
<td>Occupational history</td>
<td>41</td>
<td>2.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Effects of work on health</td>
<td>40</td>
<td>2.13</td>
<td>0.6</td>
</tr>
<tr>
<td>Hazards and risk</td>
<td>40</td>
<td>2.18</td>
<td>0.7</td>
</tr>
<tr>
<td>Sickness absence</td>
<td>41</td>
<td>2.17</td>
<td>0.8</td>
</tr>
<tr>
<td>Musculoskeletal disorders</td>
<td>42</td>
<td>2.24</td>
<td>0.8</td>
</tr>
<tr>
<td>‘Other aspects’</td>
<td>40</td>
<td>2.4</td>
<td>0.6</td>
</tr>
</tbody>
</table>

**Table 4. Frequency of responses on ‘user-friendliness’ of the THOR-GP website, n = 46**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency of response n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3 (7)</td>
</tr>
<tr>
<td>2</td>
<td>3 (7)</td>
</tr>
<tr>
<td>3</td>
<td>9 (20)</td>
</tr>
<tr>
<td>4</td>
<td>20 (43)</td>
</tr>
<tr>
<td>5</td>
<td>10 (22)</td>
</tr>
<tr>
<td>Not answered</td>
<td>1 (2)</td>
</tr>
</tbody>
</table>

Occupational medicine journals were reported as an additional resource for CPD by 140/205 (66%). Fifty-eight of 205 (27%) said that they attended courses in occupational medicine and 60/205 (28%) that they attended occupational medicine meetings. Twenty-six of 205 (12%) reported the use of other sources of CPD such as in-house training. Other e-learning resources such as bmjlearning and doctorsnet were used by 100/205 (47%) to maintain their occupational medicine CPD. Those who reported using other sources of e-learning for CPD were significantly more likely to have used the THOR-GP website for that purpose (28/46 reporters, \( X^2 = 4.43, P = 0.04 \)).

The responding GPs made 56 written suggestions of topics which could be included in the educational material on the website to meet their needs. Fifteen GPs identified occupational health law as an educational need and four of these specifically requested information about the Disability Discrimination Act (1995). Four wanted information relating to hand–arm vibration syndrome. Three asked for information on occupational medicine relating to general practice. Three requested information on how to relate to management or employers and two requested material about workplace assessment.

Two responders suggested the inclusion of material relating to hazard and risk which was already available on the website. It is of note that this material was in the section receiving the lowest score for interest. The remaining 27 topics suggested were either non-specific statements, for example ‘Book Reviews’ or were single topics about which information was already available in the website.

**Discussion**

The THOR-GP website offering free CPD material in occupational medicine to participants has a low rate of use by the members of the scheme. Lack of time was the most frequently cited reason for non-uptake of this free CPD resource.

Doctors trained to at least diploma level practising their special interest, and motivated sufficiently to join a national reporting scheme, should provide a useful group in which to study learning behaviour. The low level of use of the web-based resources made available to them was a surprising finding and the resulting small numbers involved limit the conclusions to be drawn relating to the content of the educational material provided on the website.

As far as is known, the only source of broad-based online CPD material in occupational medicine, currently directed specifically at GPs in the UK, is the distance learning web-based package developed by the COEH at the University of Manchester [14,15]. The Department of Work and Pensions produces web-based CPD material
for GPs which is designed to address educational needs, related specifically to sickness absence certification. The FOM encourages all those working in occupational medicine, both specialists and non-specialists, to participate in its CPD scheme consisting of approved courses, meetings and conferences and some written material available from the FOM website [16].

The educational material on the THOR-GP website is a potential source of continuing training for GPs practising occupational medicine. The low use of the site by apparently well-motivated practitioners remains a concern for the medical educators involved in the design and maintenance of the site. Refinements have now been made to the site, aimed to make it more easily accessible to users and additional material has been added as a result of the comments made on the returned questionnaires. A further questionnaire survey is planned to evaluate these changes and to initiate a cycle of response to educational need.

Protected time is recommended for e-learning in health care organizations [17,18]. Unfortunately such protected time may not be available to GPs and e-learning may be seen as a time-saving method. However, lack of time was the reason most frequently given for non-uptake of the free resource on offer to THOR-GP contributors. In a different context, lack of time was given as a reason for non-use of Internet resources by primary care staff in Nottingham and Rotherham [19].

One strategy successfully used to increase participation in online learning is the use of e-mail reminders [20]. The centre (COEH) maintains regular contact with its contributing GPs by e-mail and we plan to encourage THOR-GP contributors’ use of the available e-learning resources following modification of the website and implementation of e-mail reminders. Further research is needed into the use of online learning materials, especially in terms of its effect on clinical outcomes and benefits to the employers of occupational physicians.

Key points
- A website offering free CPD material in occupational medicine to participants in a national research project has a low rate of use by the members of the scheme.
- Lack of time was the most frequently cited reason for non-uptake.
- Further research is required into ways of encouraging GPs to use web-based CPD material.

Funding
The Health and Safety Executive with core academic support from the Higher Education Funding Council for England.

Conflicts of interest
None declared.

References


