

**Interactive support material
for medical students and
continuing professional
development**

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**1. Web-based Therapeutics
for medical students**

**2. Web-based CPD for
specialists in CPT**

**Web-based Therapeutics
for medical students**

Keele University Medical School

2002

- First cohort of 50 students from Manchester Medical School enrolled into Year 3 of course
- Course to be run according to Manchester design
- Problem-based learning during first 4 years of study
- Special study modules for learning in depth

Keele University

Medical School

Year	Modules
1	Nutrition & Metabolism (N&M) Cardiorespiratory Fitness (CRF)
2	Abilities and Disabilities (A&D) Life cycle (LC)
3	Nutrition, Metabolism & Excretion (NME) Heart, Lung & Blood (HLB)
4	Mind & Movement (M&M) Families & Children (F&C)

Keele University Medical School

Year	1	2	3	4	5	Total
2002/03	0	0	50	0	0	50
2003/04	50	0	50	50	0	150
2004/05	50	50	50	50	50	250

Keele University

Medical School

Year

Staff

2002/03

1 Senior Lecturer in CPT

2003/04

1 Senior Lecturer in CPT

1 Lecturer in Pharmacology
(non-clinical)

The challenge

Question

How to provide support for CPT in a PBL course for 150-250 students with minimal personnel?

Answer

Compile an interactive web-based resource reinforced by regular tutorials to discuss the web-based material

Method

- Scrutinize PBL cases
- Identify all learning objectives concerning medicines
- Write learning material on clinical management of conditions discussed in weekly cases
- Link to material on drug action, effectiveness, clinical use and hazards
- Present attractively and update annually

Design of 'Medicine Chest'

- Contents page listing topics
 - Introduction
 - Therapeutics
 - Factfiles
- Quiz Centre
 - List of questions on each topic likely to be posed
- Text files on each topic
 - Providing answers to every question, with references and suggestions for further reading
- Test Centre
 - 5 statements on each topic requiring T/F answers
 - Links back to relevant text, explaining answers

Factfiles – minimum data set

- How does the drug act?
- How effective is it by comparison with other alternative forms of treatment?
- What are its adverse effects?
- With what other medicines can it interact?

Face-to-face teaching

- Y1&2 Contribution to lectures on key topics
Attendance at Pharmacology practical classes
- Y3 Weekly tutorials (24) for all students, using Test Centre questions as basis for group discussion of drug action and use
- Y4 Monthly tutorials (3) for all students in M&M module using same format as in Year 3
- Y5 Workshops (4) to develop prescribing skills

Demonstration of Medicine Chest

Feedback

Information derived from student questionnaires and individual comments:

- Medicine Chest is viewed as the most useful of all the web-based resources available, scoring an average 4.3 out of 5
- Most students access Medicine Chest at least once a week and have no adverse comments on content or quality
- Recurring comment is 'More files, please'
- Regular attendance (20-30) at weekly tutorials (not compulsory)

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**Web-based CPD for
specialists in CPT**

CPD for specialists in CPT

'You must keep your knowledge and skills up to date throughout your working life. In particular, you should take part regularly in educational activities which develop your competence and performance.'

Good Medical Practice. GMC, 2001

CPD for specialists in CPT

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Good Medical Practice. GMC, 2001

What knowledge? Which skills?

Delphi study 2000

- 20/79 specialists in CPT with NHS commitment
- Competencies drawn from SpR training curriculum
- 78 statements considered in four domains:
 - Core of knowledge
 - Therapeutic skills
 - Educative skills
 - Investigative skills

Example

A competent specialist in CPT should be able to:

- Explain the principles of pharmacovigilance

Delphi study 2000

- 58 statements (74.4%) accepted by over two-thirds of expert panel, in four domains:
 - Core of knowledge 35
 - Therapeutic skills 11
 - Educative skills 4
 - Investigative skills 8

Delphi study 2000

Core of knowledge

- Pharmacodynamics
- Pharmacokinetics
- Pharmacogenetics
- Therapeutic drug monitoring
- Rational drug selection
- Evidence-based medicine
- ADRs and poisoning
- Drug interactions
- Concordance
- Pharmacovigilance
- Pharmacoepidemiology
- Pharmacoeconomics
- DTCs, APCs, NICE
- Clinical trial design
- Statistical analysis
- Ethical review

Delphi study 2000

Therapeutic skills

- Prescribe competently
- Select drugs rationally
- Optimize drug administration
- Optimize effectiveness and safety
- Prescribe cost-effectively
- Assess therapeutic and adverse effects of drugs
- Investigate and manage ADRs
- Advise on management of poisoning

Delphi study 2000

Educative skills

- Evaluate scientific papers
- Devise prescribing policies
- Develop formularies
- Develop guidelines

Investigative skills

- Interpret data on drug action
- Write subject information and consent forms
- Select and perform statistical tests
- Design case control study
- Investigate and report medication errors

BPS Clinical Section

Assist efforts of members to keep up to date by:

- Identifying best available reference sources of information to support each competency
- Signposting these sources on a dedicated website with a clear BPS identity
- Developing self-assessment material on website accessible to both specialists and trainees

Web site material

For each statement in the Delphi study, we asked:

- What should a specialist in CPT providing a service to the NHS be expected to know about this topic?
- To what published source(s) can the specialist turn to verify his/her knowledge and understanding of the subject in the most time-effective way?
- How might this knowledge and understanding be reliably assessed, either by the individual or independently?

Web site development

Collaboration with Blackwell Publishing

4 editors

26 contributors

42 competencies

Web site content

42 key competencies within 6 domains:

- pharmacological principles
- optimal choice and use of drugs
- hazards of drug use
- investigating drug effects
- investigating drug use
- managing drug use

**Demonstration of the BPS
CPD web site**

Web site access

Accessible to:

- Subscribing members of BPS
- Other national societies on payment of fee

Visits to CPD web site

Quarter	2/03	3/03	4/03	1/04	2/04
Total visits	255	165	69	71	77
Pages viewed	2195	1888	936	392	506
Total hits	17801	8702	4151	4479	4229
Unique visitors	201	123	47	55	48

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