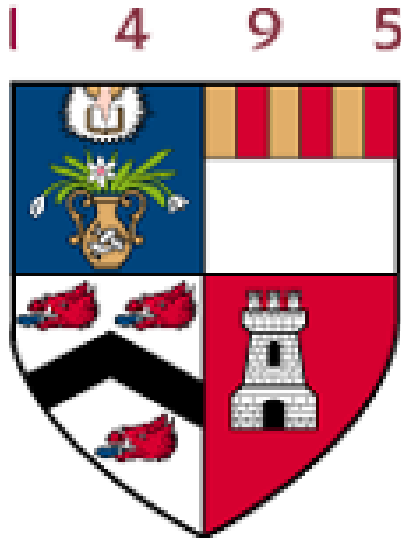# EBM for Medical Students

1 4 9 5

# Mike Crilly & Mandy Moffat

## Department of Public Health
## University of Aberdeen

# Medical School since 1495

- **Pope allows Bishop Elphinstone to establish Kings College**

- **Train clergy, doctors, lawyers & administrators to serve the local community**

- **First Chair of Medicine in the English-speaking world 1497**

- **185 students each year (~30 BScMedSci)**

UNIVERSITY OF ABERDEEN

# Tomorrow's Doctors ( GMC)

- **Essential factual information only**
- **Integrated core curriculum**
- **Evaluate & integrate evidence critically**
- **Evaluate evidence effectiveness of therapy**
- **Self-directed learning skills**
- **Assess curricular outcomes**
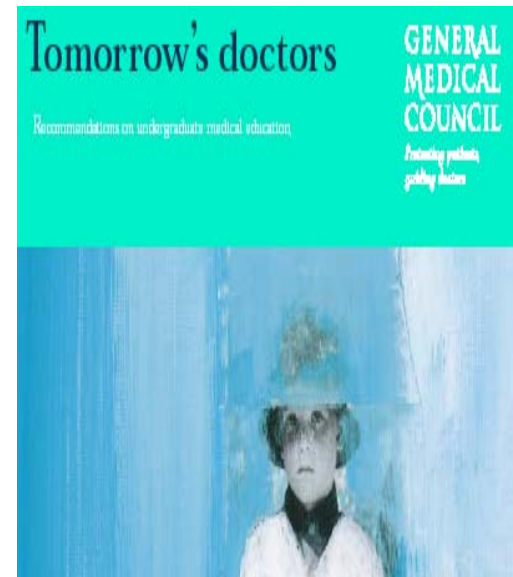
# Aberdeen Medical School
## External Assessment

- **Teaching Quality Assessment (TQA)**

- **General Medical Council ( 'visit' )**

- **Research Assessment Exercise (RAE)**

UNIVERSITY OF ABERDEEN

# Teaching & Research Quality

| Medicine | Teaching Quality | Research Quality | | |
|---|---|---|---|---|
| | | Community | Hospital | Laboratory |
| 1 Oxford | 21 | 5* | 5* | 5* |
| =2 Cambridge | 21 | 5* | 5* | 5* |
| =2 Glasgow | Exc | 4 | 5 | 5 |
| 4 Liverpool | 24 | 4 | 4 | 5 |
| 5 Newcastle | 24 | 5 | 5 | 5* |
| **6 Aberdeen** | **Exc** | **5** | **4** | **4** |

# Teaching Quality Assessment (TQA)
## March 1997 ('new' curriculum)

- **Integrated core curriculum**

- **Impressive ownership of curriculum**

- **Pervasive community component**

- **Early patient contact**

- **Strong Computer Assisted Learning (CAL)**

- **Comprehensive 'Handbooks & Guides'**


- **Reduce further 'didactic lectures'**

# General Medical Council (GMC)
## November 2000

- **Core curriculum ( 'integrated systems based' )**
- **Phase co-ordinators (I - IV)**
- **Clinical Skills Centre**
- **Extensive student input to evaluation (6,000)**

UNIVERSITY OF ABERDEEN

# Student-Staff Liaison Meetings

**"Students again asked for more guidance on critical appraisal".**

**February 2003 (Community 3M)**

**Epidemiology teaching consistently gets lower ratings than other elements**

UNIVERSITY OF ABERDEEN

# General Medical Council (GMC)
## November 2000

- **Low profile Public Health Medicine**

  **( *Population Health, Epidemiology, EBM* )**
- **Promote 'self-directed small-group learning'**
- **Active curiosity-driven learning**
- **Reduce passive didactic lectures**

  **[ Students told GMC they "preferred lectures to problem-orientated small groups" ]**

# Tomorrow's doctors

Recommendations on undergraduate medical education

## GENERAL MEDICAL COUNCIL

Protecting patients
guiding doctors

UNIVERSITY OF ABERDEEN

# The Scottish Doctor

search    comment

# Learning Outcomes for Medical Informatics

## Level 1 - What the doctor is able to do

## Level 2 - Outcomes for Medical Informatics

Collecting, storing and using information has always been an integral part of the practice of medicine. It has, however, become more complex and technology-based thereby creating an increasing need for medical graduates to be competent in information handling skills ranging from simple record-keeping to accessing and using computer-based data. As well as having the technical skills to undertake such tasks it is important that graduates appreciate the role of informatics in the day-to-day care of patients and the advancement of medical science in general.

| Level 3 | *This could include:* Level 4 |
|---|---|
| Keeping patient records | Maintaining high quality of recording (whether in writing or on computer); accuracy and data quality; legibility.<br><br>Knowledge of:<br><br>the different types of records and how records are stored and retrieved (manually and electronically);<br><br>coding and classification;<br><br>confidentiality – including legislation governing access to medical records and data. |
| Accessing data sources | Using library and on-line information sources, including internet and intranet systems accurately, systematically and in sufficient depth.<br><br>How routinely collected health information is used in service planning and delivery of care.<br><br>Using information in evidence-based practice.<br><br>Identifying and using professional guidelines. |
| IT Skills / Computing skills | Use of E-mail, word-processing, databases, statistical packages, spreadsheets, Medline, Cochrane, Embase, Cinahl, Web of Science, on-line journals, etc.<br><br>Participation in videoconferencing.<br><br>General principles of telemedicine |

Log in:

User Name:

Password:

# the Scottish Doctor  (2002)
### www.scottishdoctor.org

- **Learning outcomes- Scottish Med. Students**

- **'Competent & Reflective' House-Officers**

- **12 domains ….** *including:*

    - **Clinical Decision Making**

    - **Medical Informatics**

    - **Health Promotion / Disease Prevention**


- **Next stage 'assessment' of outcomes**

UNIVERSITY OF ABERDEEN

# the Scottish Doctor

## Clinical Decision Making

- **Define problems**

- **Seek best evidence & keep up to date (EBM)**

- **Analyse & Interpret evidence (EBM)**

- **Critical thinking & cope with uncertainty (inquisitive, questioning & rational)**

- **Appreciation of research methods**

- **Decisions in partnership with patients**

- **Limitations of (EBM)**

UNIVERSITY OF ABERDEEN

# the Scottish Doctor
**www.scottishdoctor.org**

## Medical Informatics

- **Collecting, storing & using information**
- **Accessing data sources**
- **Information for (EBM)**
- **Databases (eg Medline, Cochrane, Embase)**
- **eJournals**

UNIVERSITY OF ABERDEEN

# the Scottish Doctor
**www.scottishdoctor.org**

## Health Promotion & Disease Prevention

- **Risk reduction individual patients (EBM)**
- **Effective interventions (EBM)**
- **Appropriateness of screening programs**

UNIVERSITY OF ABERDEEN

# the Scottish Doctor

## Other Domains also include:

- **Interpret History, Physical & Investigations**
- **Normal (e.g. BP, PEFR)**
- **Effectiveness of therapy**
- **Acute & Chronic medical management**
- **Knowledge basic theories learning/teaching**
- **Lifelong learning**

UNIVERSITY OF ABERDEEN

# Aberdeen Outcomes

J. **Outcomes for decision making skills and clinical reasoning and judgement**
  1. the ability to recognise and define clinical problem, interpreting all available information and recognising personal limitations and the limitations of current knowledge.
  2. familiarity with the principles of evidence based medicine and how to put it in to practice.
  3. the development of critical thinking skills, applying rational processes with a questioning and inquisitive attitude.
  4. knowledge and understanding of quantitative and qualitative scientific research methodologies
  5. understanding of the basic principles of statistical analysis
  6. the ability to demonstrate creative thought, self-reliance and resourcefulness.
  7. recognition that uncertainty exists and that errors in decision making will occur.
  8. appreciation of the need to prioritise in patient care and with one's own time.

# Curriculum Map - Aberdeen
## Decision Making & Clinical Reasoning

| Year 1 (Phase I) | Course | J 1 | J 2 | J 3 | J 4 | J 5 | J 6 | J 7 | J 8 |
|---|---|---|---|---|---|---|---|---|---|
| ME 1007 | Systems I | | | | | | | | |
| ME 1008 | Basic Science for Medicine | | | | | | | | |
| ME 1504 | Systems II | | | | | | | | |
| ME 1505 | Special Study Module I | | | √ | √ | | √ | √ | |
| ME 1507 | Community Course I | | | √ | | | √ | | |

UNIVERSITY OF ABERDEEN

# Epidemiology Teaching: Student and Tutor Perceptions

## Mandy Moffat; Hazel Sinclair; Jennifer Cleland; Cairns Smith; Ross Taylor

Being submitted to 'Medical Education' 2003

UNIVERSITY OF ABERDEEN

# Epidemiology Teaching:
## Student and Tutor Perceptions

- **Middle-MB students**
- **Understanding, Attitude, Relevance & Style**
- **Qualitative interviews (with 7)**
- **Two focus groups (with 4 & 3)**

- **Community Course GP tutors (phase 2)**
- **Focus group with 5 GP tutors**

UNIVERSITY OF ABERDEEN

# Epidemiology Teaching: Student Perceptions

*"When is there a good time to discuss epidemiology?"*

*"reading epidemiology is even more dry than doing it"*

*"it made absolutely no sense at the time whatsoever"*

*"very tedious … it is nothing to do with medicine"*

*"hard to have big discussions on it unless you have got a paper in front of you"*

*"understand that some of the things are very important later on although it is hard to realise that at the time"*

*"you use it not just in General Practice but in every aspect of medicine, for any treatment of anything"*

# Epidemiology Teaching:
# Tutor Perceptions

## Demonstrate Practical Clinical Relevance

*"… try and get away from maybe the science and how we use it in medicine"*

*"… try and make it relevant to them but in a clinical setting"*

*"… difficult to try and tie it in"*

*"I feel a bit unconfident about epidemiology"*

# GP Tutors (P2) comments

- **Start with the patient (expand to 'practice')**
- **Relevant topical examples:**
  **eg SARS, HRT, Statins, OCP, MMR**
- **Avoid 'big words' (closes down minds)**
- **Communicating risk to patients**
- **Synopsis of teaching given elsewhere**
- **Assessment needs higher profile**
- **GP tutors generate their own materials**
- **"Amateur [ 'clinical' ] epidemiologists"**
- **Students don't (will not prepare) in advance**

# Some EBM issues

- **EBM is not just 'critical appraisal'**
- **Teaching EBM from 'day one'**
- **Clinical relevance of EBM**

- **Integrated 'Vertical Theme'**
- **'Incremental' versus 'Big bang'**
- **Assessment EBM competency**
- **'Terminology'**

# Clinical Decision Making Group

- **Clinical decision making & critical thinking**
  - Academic GP (with PHM background)
  - Medical Information Specialist
  - Medical Statistician
  - Clinical Epidemiologist (PHM & GP background)
- **Define a 'core curriculum' for EBM**
- **Based on EBM steps (0 to 5)**
- **Map current activity & resources**
- **Identify need for training & materials**

# Clinical Decision Making Group

- **Linking current activities as 'Vertical' theme**
- **Badge-ing EBM for Students & Tutors**
- **Promote electronic resources (exploit CAL)**
- **Assessment of student's EBM skills**
- **Recommended textbook?**

# Opportunities

- **Strong MB ChB course (TQA 'excellent')**
- **Established Community Course**
- **Highly skilled GP tutors**
- **Good IT resources in GP**
- **Good links GP, PHM & others ('community')**
- **High profile of Epidemiological Research**
- **Clinical Trials & Cohort studies (RAE 5)**

# Challenges

- **EBM - Tutor training & experience**
- **Integrating EBM with the 'Art of Medicine'**
- **Integrating EBM as a vertical theme**
- **Exploiting good IT resources in GP**
- **Danger of an EBM ghetto**
- **Limited IT resources in hospital**

UNIVERSITY OF ABERDEEN