The Medical Graduate as Scientist and Scholar: a UK perspective

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Aims of session

1. Review recent developments in UK medical education introduced to promote academic learning and interest
(15 minutes)

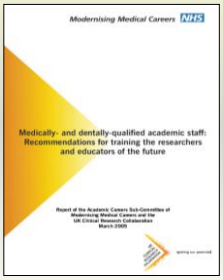
2. Present a recognised strategy for curricular review aimed at encouraging scientific and research oriented competencies
(25 minutes)

Webster S, Shotliff K, Burton L. "The Graduate as Scientist and Scholar": building a curriculum suitable for all. *Med Sci Educ* 2012; 22(3S):185-189

1. Review recent developments in UK medical education introduced to promote academic learning and interest

Walport Report 2005

- Acknowledgement that high quality research activity amongst clinicians in UK was in decline
- Realisation that better structured and integrated training was needed from early in a clinician's career (but also allow flexibility for late starters)
- Encourage recruitment and retention of clinician scientists



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Barriers to academic medical training (Walport, 2005)

1. Lack of both a **clear route** of entry and a transparent career structure
2. Lack of **flexibility** in the balance of clinical and academic training and in geographical mobility
3. Shortage of properly **structured** and supported posts upon completion of training

Sir Mark Walport, Director of Wellcome Trust, Chief Scientific Adviser

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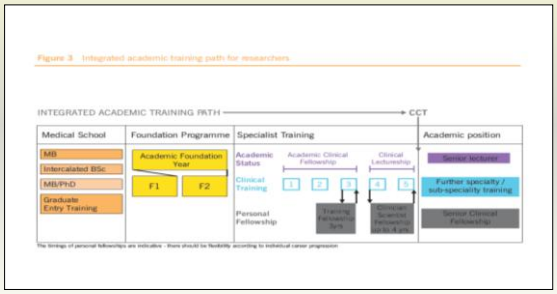
Walport Report 2005
Integrated academic pathway for researchers



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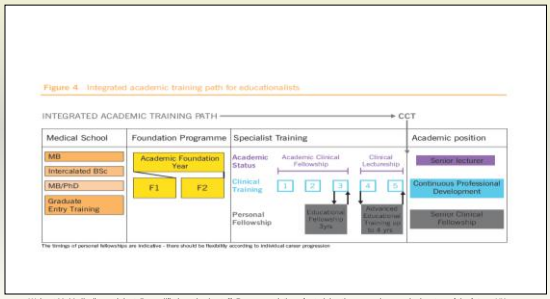

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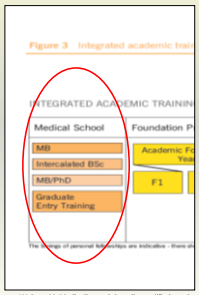
Optimising academic and basic science competencies in UK undergraduate medical schools



- Integrate clinical academics into teaching faculty
- Provide bursaries and scholarships to maintain opportunities to study for integrated science degrees
- Offer selected opportunities for MB-PhD study
- Develop regional and national support for higher qualifications in medical education

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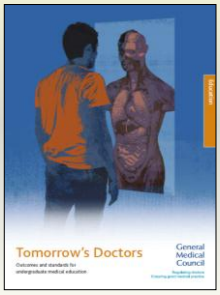
GMC "Tomorrow's Doctors" 2009



Summary of GMC undergraduate curriculum objectives relating to knowledge and application of scientific research

1. Critically appraise the results of relevant trials and other studies in the medical and scientific literature
2. Formulate simple relevant research questions in biomedical and related sciences, and design appropriate studies to address the questions
3. Apply findings from the literature to answer questions raised by specific clinical problems
4. Understand the ethical and governance issues involved in medical research

General Medical Council. Tomorrow's Doctors. [Online]. 2009; [Accessed on 10.02.12]. Available from: http://www.gmc-uk.org/TomorrowsDoctors_2009.pdf_39260971.pdf

GMC "Tomorrow's Doctors" 2009

- It is for each medical school to design its own curriculum to suit its own circumstances, consistent with *Tomorrow's Doctors*.

  Both curriculum design and delivery must take into account modern educational theory and current research.
- The curriculum must allow for student choice for a minimum of 10% of course time.

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Curricular review to promote basic scientific competencies

1. What are the needs in relation to the product of the training programme?
2. What are the aims and objectives?
3. What content should be included?
4. How should the content be organised?
5. What educational strategies should be adopted?
6. What teaching methods should be used?
7. What educational environment should be fostered?
8. How should the process be managed?
9. How should assessment be carried out?
10. How should details of the curriculum be communicated?

Harden RM. Ten questions to ask when planning a course or curriculum. *Med Educ*. 1986;20(4):356-365

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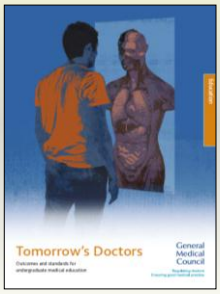

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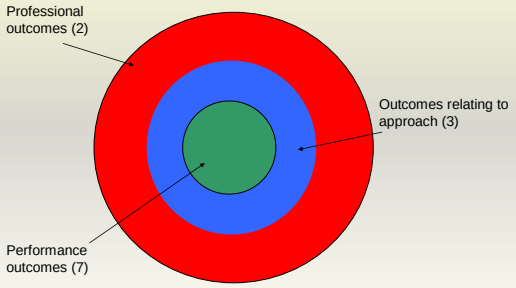
What are the aims and objectives?



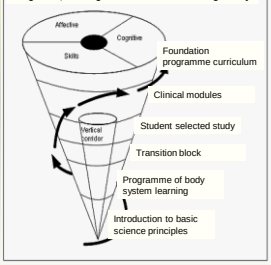
Harden RM, Crosby JR. and Davis MH. An Introduction to outcome-based education *Medical Teacher*, 1999;21 (1):7-14.

What content should be included?

- Relevant and important
- Core and student selected content
- Worked examples of how laboratory research has developed through translational work into improved care and treatment for patients
- Contact with academic staff to provide opportunities for positive role modelling

How should the content be organised?

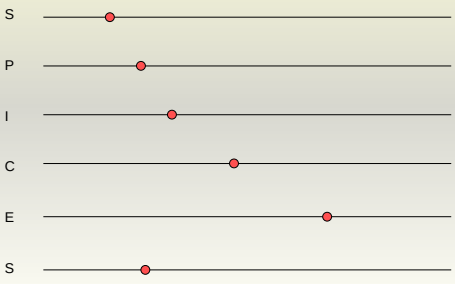
A spiral curriculum enabling horizontal and vertical integration, drawing on constructivist learning theory



- Consider active and passive learning elements
- Independent and collaborative
- Ethical decision making

Harden RM, Stamper N. What Is a Spiral Curriculum? *Med Teach.* 1999; 21(2):141-43

What educational strategies should be adopted?



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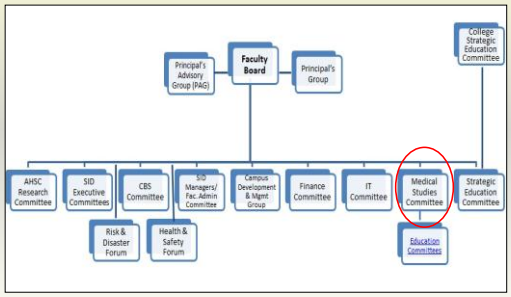
What teaching methods should be used?

- Group size: large or small
- Environment: for students and faculty
- Assessment: regular, formative, supported
- Consider learning styles
  - Active
  - Reflective
- Mentoring versus supervision

What educational environment should be fostered?

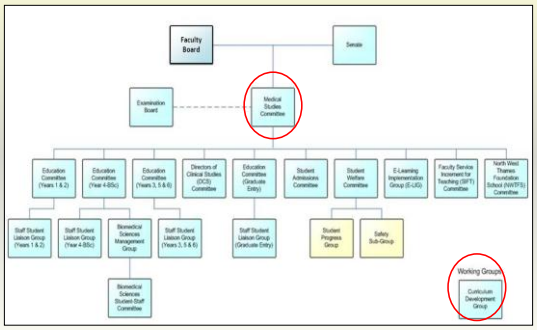
- Students
  - Setting relates to aims and objectives eg ward or simulation suite for examination skills
- Faculty
  - Access to funding and resources
  - Participative leadership
- Both
  - Supportive
  - Non-judgemental
  - Non-discriminatory

How should the process be managed? (1)



Imperial College London. Faculty of Medicine. Faculty Committees. Available from: http://www1.imperial.ac.uk/medicine/intranet/committees/educationcommittees/

How should the process be managed? (2)



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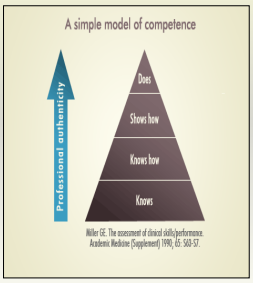
How should assessment be carried out?



- Traditional methods are not a valid assessment for many desired outcomes
- Short answer questions, OSCEs, 360 degree appraisals, WPBA and portfolio assessment are more valid and assess higher level outcomes

London Deanery, 2011. Faculty Development. E-learning for clinical teachers. London Deanery http://www.faculty.londondeanery.ac.uk/e-learning/workplace-based-assessment/what-is-workplace-based-assessment

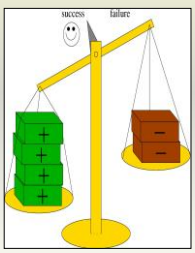
How should details of the curriculum be communicated?

Key stakeholders

Participative leadership

Risks and benefits explained with potential problems addressed

Concept map of current and proposed curricula



Lack of involvement of key stakeholders

Disjointed leadership

Poor organisation

Failure to address potential hurdles, drawbacks and risks

Failure to answer stakeholder concerns and uncertainties

Summary

- New strategies to improve training and retention of clinical scientists in the UK are popular and seem successful
- Standardising undergraduate learning and exposure to academic training and experience not yet possible but a wide variety of opportunities exist

Questions and Discussion

References

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Thank you!