
MEDICAL EDUCATION

Child health education for the year 2000

David A Walker, Terence Stephenson, Mitch Blair

This is the sixth in a series on medical education.

There has been concern that medical schools admit the educational cream of young enthusiastic inquisitive students and five years later produce doctors who are often bored and unquestioning.¹⁻³ Medical schools need to examine the reasons for this. In the UK, the General Medical Council (GMC) report has made major directions about undergraduate medical education in general.⁴ While not dealing specifically with child health there are three broad issues that apply: the GMC recommended decreased course content, improved methods of teaching, and a decrease in the number of assessments. There has also been concern that educators have not always linked these assessments to the objectives of the course.

In addition to the national impetus from the GMC, Nottingham University has been conducting a wide ranging curriculum review from 1990-5, which has led to an expansion of teaching time within child health from eight to 10 weeks as well as integration of core teaching between obstetrics and gynaecology, perinatology, genitourinary medicine, and genetics. This article will deal with current views and controversies on core knowledge, clinical skills, and attitudes for undergraduates studying child health. We will give some indication of the current trends in Nottingham but do not mean to suggest that this is the only way forward. However, Nottingham has a relatively young course and there has been an effort to integrate preclinical and clinical training through the three educational themes – cell, man, and community – as well as an enthusiasm to experiment with novel teaching and assessment strategies. It must be emphasised that the developments in child health, described here, are a small part of the total curriculum review. A major new component of which is the introduction of a fourth educational theme, concerned with personal and professional development.

Methodology

The first step in any teaching effort is to define educational objectives – what the student is expected to have achieved by the end of the child health attachment. The objectives must be realistic in the time available and appropriate to the stage of the student's training. The objectives we have adopted after discussion with teachers and students are as follows:

COURSE OBJECTIVES

(1) Students will demonstrate their ability to obtain a relevant clinical history from a parent or older child⁵ and present it verbally to colleagues.^{6 7}

(2) Students will demonstrate their ability to perform clinical examination of a child of any age including the measurement of growth and use of centile charts.

(3) Students will be able to classify and describe common medical and surgical paediatric conditions and indicate their relative importance throughout the neonatal period, infancy, childhood, and adolescence.

(4) Students will be able to interpret clinical and laboratory data concerning common paediatric medical and surgical conditions.

(5) Students will be able to differentiate between the different types of prevention in child health and to give specific examples of programmes of health promotion – for example, accident prevention, infant nutrition, sexual health, and dental care and disability rehabilitation.

(6) Students will be able to list and describe the developmental milestones of children in the principal areas of gross motor, fine motor, vision, communication, social, and behavioural abilities.

(7) Students will be able to appreciate the interaction between a child and his/her family, society, and environment and the effects that these factors have on health.

The second step that must be organised is appropriate educational opportunities to acquire core knowledge, clinical skills, and attitudes. With falling inpatient numbers, there will be an increasing role for the outpatient department, the accident and emergency department, general practice, and the community in providing exposure to common paediatric clinical problems. Finally, it is necessary to assess whether these objectives have been achieved by the students and communicate with them about their strengths and weaknesses.

Core knowledge

One of the criticisms by the GMC of current medical courses is that every teacher wants to teach his subject in excessive and inappropriate detail. In addition, methods of teaching have relied upon the use of formal lectures, tacitly assuming that the knowledge has been imparted. From the earliest stage of the

Department of Child Health, University of Nottingham
D A Walker
T Stephenson
M Blair

Correspondence to:
Dr David A Walker,
Department of Child Health,
Queen's Medical Centre,
Nottingham NG7 2UH.

development of the child health course in Nottingham, formal lectures have been kept to less than 5% of the week and the students have used a core text, *Essential Paediatrics*,⁸ for the recommended knowledge base. They are told at the beginning of the attachment that the knowledge test using a multiple choice questionnaire (MCQ) will be based solely on this text. A core set of subjects to be covered in small group teaching helps to illustrate and expand some of the themes in the book. The best way of acquiring core knowledge is by seeing children in the hospital and the community and students should always be assigned named patients and be responsible for following up those children and presenting these cases in tutorials. We have particularly emphasised the acquisition of knowledge of normal child development and behaviour in the community attachments to nurseries and schools.

Clinical skills

Approximately half of undergraduates will do little paediatrics again after qualifying and therefore the basic skills we like our students to acquire are the ability to take a thorough history from a parent or child, to be competent at the basic approach to examining a child, to recognise a child who is seriously ill, and to assess their growth and development. We firmly believe that students should learn that a good history is the cornerstone of making a diagnosis. Some schools emphasise this by having the examiners sit in as a 'fly on the wall', while the student takes the history and examines the patient. Other schools use the more formalised objective structured clinical examination. Students can be assessed on system examination performance, including development, provided the examiners do not expect MRCP standard. We feel that the approach to a child's examination is of as great an importance as the ability to correctly detect a subtle clinical sign. Inevitably, the level of performance of clinical skills by the students is proportional to the commitment and enthusiasm of the teachers. Medical schools which value these objectives highly are more likely to produce doctors with these abilities.

Attitudes

The attitudes we expect the students to acquire include an awareness of the influences of the family, social, and cultural background on the patterns of disease presentation and the ways in which health services are used, a respect for the value and limitations of parental observation, recognition of the variation in family reactions to childhood illness, and the effect this has upon the delivery of health care. Students need to be aware of the importance of standards of professional behaviour which are desirable to families and children as well as other professionals, the importance of multi-professional and interagency working for comprehensive paediatric care including preventive measures. In addition, they are also introduced to the legal and ethical framework in which

health care professionals work with particular reference to the Children Act, Education Act, and the concept of children's right. Students should be taught the importance of the 'placebo' effect of the consultation, should observe the personal touch, and should hear the paediatrician use language appropriate to the parents and child's abilities. Students learn much of their subsequent behaviour by watching their teachers in action.

New developments

The current curriculum review has led us to implement a number of changes to improve student learning. We will be promoting a more formalised supervisor system linked to the introduction of logbooks. The logbook will clearly state the course objectives, identify key experiences that should be witnessed/performed, and provide a system for mid-course appraisal with the supervisor as well as being used as a method of obtaining student feedback. Logbooks have their critics, partly based on students' candid views that they are so easy to falsify. The formalised teaching/lecture course which previously linked obstetrics and child health is being modified so that student centred learning methods are employed rather than traditional didactic lecture techniques. Computer assisted learning techniques are being developed to enhance student learning opportunities providing a series of linked MCQ tests and tutorials. Within the software, the use of integrated video film, audiotape, and pictures (for example, rashes, radiographs) allows the demonstration of seasonal clinical conditions out of season (for example, croup) or conditions that are rarely seen on inpatient wards (for example, treatment of anaphylaxis, a diabetic injecting insulin). Problem solving teaching modules will promote analytical skills and provide the opportunity for students to generate teaching material for their colleagues. Students enjoy teaching each other with facilitation, when allowed some choice in what they can present to their peers. Until now, the medical school course has used the framework of three themes: A – the cell, B – man, and C – the community. A fourth theme has recently been added: theme D – professional development. This has been added in order to highlight the importance of acquiring skills in communication with colleagues and patients, self assessment, career planning, and time management.

Assessment and course audit

The course assessments are being changed to reflect the changed emphasis of the course objectives. The MCQ exam is retained, although we are arranging to standardise the emphasis of subject matter within each question paper, as well as laying a greater emphasis upon problem solving rather than questions dependent upon recall only. The scoring method of the clinical exam has been reassessed and the classic subjective method

compared with a structured objective scoring system. We have adopted the latter because of the benefits of greater concordance between examiners on what the student is expected to achieve; a scoring framework can be used for training as well as a simple method for student feedback. The viva examination will be based, in part, upon the content of the logbook. A regular formalised system of student feedback through feedback forms and student staff meetings is in development and will act as a focus for subsequent course development.

The process of curriculum review is an arduous one, the major risk being that it will do little to improve the final product because the good students will always do well and the bad ones, badly. It does make the teachers re-evaluate their methods and work more closely with their colleagues. The current mood of

change is supported by the explosion of new teaching technology which may be a potent catalyst to ongoing changes in learning techniques for clinical medicine, although it is hard to see how the clinical process can be learned without the traditional 'apprenticeship' methods we all used.

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Core knowledge, skills, and attitudes in child health for undergraduates

J Y Paton, F Cockburn

Background

'We recommend the introduction of a core curriculum which defines the requirements that must be satisfied before a newly qualified doctor can assume the responsibilities of a pre-registration house officer'

... *'the memorising and reproduction of factual data should not be allowed to interfere with the primary need for fostering the critical study of principles and the development of independent thought'*
*Tomorrow's Doctors*¹

Anxieties about the nature and content of undergraduate medical education in the UK have arisen regularly during most of the past century. The curriculum has long been recognised to be overloaded: too many facts, too little thinking. Recently, these anxieties have become more sharply focused and a complete review of the medical curriculum is under way. The General Medical Council (GMC) has decreed it should change, and in their outline recommendations entitled *Tomorrow's Doctors*,¹ has described the underlying forces and set out a plan for change. A central step en route to the new leaner curriculum is the definition of a core containing only essential knowledge, skills, and attitudes.

Why teach child health to undergraduates?

'It is an essential rule that no teaching course or module should be planned without consideration of its role in the curriculum as a whole'.¹

If a central aim of the core curriculum is to

meet the requirements of a preregistration house officer, then there is, on one view, at least an argument *against* teaching child health to undergraduates. Thus if child health is to justify its place in the medical curriculum, its role and potential contribution to undergraduate education must first be clearly delineated.

Why does child health merit inclusion in the core curriculum?

There are several reasons why child health can justify its claim on undergraduates' time, and why it can contribute uniquely to *'the critical study of principles and the development of independent thought'*.¹

Firstly, the study of growth and development in medicine is analogous to the study of velocity and acceleration in physics. In paediatrics, illness occurs in the context of growth and development. In few other areas of medicine is 'time's arrow' as naturally present or pervasive. It is only with a knowledge of growth and development that the impact of environmental and genetic factors can be understood and a true appreciation of the origins of human health and disease achieved.

Secondly, public health is to figure prominently in the new core curriculum. Children have different diseases from adults. This different disease spectrum can help the undergraduate student to focus on important public health questions. In particular, what diseases affect children?, which are common?, what are the sources of information about health and illness?, how is 'health' measured?, is social

Department of Child Health, University of Glasgow, Royal Hospital for Sick Children, Yorkhill, Glasgow G3 8SJ
 J Y Paton
 F Cockburn

Correspondence to:
 Professor Cockburn.