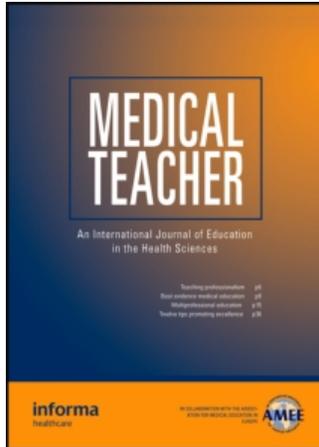


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A survey of UK medical schools' arrangements for early patient contact

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A survey of UK medical schools' arrangements for early patient contact

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Abstract

Background: Many U.K. medical schools have patient contact in the first two years of the undergraduate course.

Aim: To compare the purposes and organization of early patient contact in UK medical schools and to relate these arrangements to the schools' curricular objectives.

Methods: A telephone survey of lead educators in UK medical schools. Categories of contact were plotted against phases of the course to discern patterns of organisation.

Results: The quantity of contact varies considerably (four to 65 days). There is a pattern, with learning objectives around the social context of health and illness preceding skills based work and integrated clinical knowledge for practice coming later. Schools fall into three categories: close adherence to the preclinical/clinical split, with limited early contact acting as an introduction to social aspects of health; provision of substantial patient contact to maximize the integration of knowledge and skills; and transitional, with limited clinical goals. General practice provides between one third and one half of early patient contact.

Conclusions: Arrangements meet the objectives set by each school and reflect differing educational philosophies. Change is toward more early contact. There appears to be no national guidance which supports a minimum quantity of patient contact or specific educational purpose in the early years of U.K. basic medical training.

Introduction

The General Medical Council's 'Tomorrow's Doctors' recommended that medical training should achieve a patient-oriented doctor familiar with the perspectives and life context of the public. To this end it recommended that patient contact should start earlier in training and make more use of primary care and community settings (General Medical Council 1993). Early patient contact (EPC) is here defined as patient contact within the first two 'preclinical' years of basic training (Littlewood et al. 2005). The advocates of EPC claim that it supports an integrated curriculum (West et al. 1982; Cade 1993); encourages a patient-centred approach (Nathanson et al. 1987; Lassen et al. 1989; Cade 1993; Valkova 1997); improves communications skills (Lassen et al. 1989; Cade 1993; Valkova 1997) and reinforces students' motivation towards their career choice (Vieira et al. 2003; McLean 2004).

EPC is appreciated by students (Friedberg & Glick 1997; Johnson & Scott 1998; Vieira et al. 2003) and valued by staff (Friedberg & Glick 1997; Johnson & Scott 1998). Comparing outcomes in performance has been problematic due to small sample sizes (Pamies et al. 1994) and the difficulties of longitudinal follow up (Dahle et al. 1997). A recent systematic review concluded that it 'helps medical students learn, helps them develop appropriate attitudes towards their studies and future practice, and orientates medical curricula towards society's needs' (Littlewood et al. 2005). However, this review may not convince EPC's critics, as it drew more on descriptive than comparative studies, and made causal inferences mainly

Practice points

- There is considerable variation in the arrangements for EPC, reflecting differing educational philosophies.
- A few medical schools have substantial EPC, aiding the progress towards many of these clinical objectives early in the course.
- Substantial early patient contact is destined to become more widely employed in UK medical schools.

from qualitative studies which, arguably, are not designed for such purposes.

EPC has often accompanied a shift towards community based education, in which both students (Howe 2001) and GPs have been pleased with their new role (Haffling et al. 2001). A number of studies have shown significant positive impacts of community based training (Murray et al. 1997; Hampshire 1998; Worley et al. 2000), though some of these have focused on the later years of training, and few have been able to say whether it is the timing, the patient contact, or the learning environment that has led to these benefits. The logistics and workload of organizing patient contact have been mentioned as a major potential barrier to both EPC and community based learning (Wilson et al. 1996; Gray & Fine 1997; Carney et al. 1999). Perhaps surprisingly, however, there is no recent study to show what actual patient contact is being provided in the early years of UK medical training, nor the extent to which this is based in, or delivered by, general practice.

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Aims

The present study arose out of an evaluation of patient contact in the first year of the new medical curriculum at the University of East Anglia. In order to put into context our arrangements for EPC, we investigated arrangements in other medical schools in the United Kingdom. This study aims to describe when students have first contact with patients, how such contact is organized, how these arrangements relate to the curricular objectives, and the amount of EPC provided in general practice.

Method

A survey in medical schools in the United Kingdom was conducted through either the Dean or the lead person for each course, such as the Course Director or Director of Medical Education, depending on the school's preference. Initial contacts were identified from the contact list provided by the Association for the Study of Medical Education (ASME). Contacts for schools not included on the ASME list were found on lists on the internet (British Medical Association 2005; Medical Protection Society 2005). The survey took place between October 2004 and June 2005.

The experience of the authors and the relevant literature suggested that patient contact has different dimensions—time, place, purpose, planned or opportunistic. We developed an interview protocol with questions to cover each of these dimensions (Table 1). The interview schedule was piloted with two senior medical educationalists not included in the main data collection.

Interviews were conducted on the telephone by one researcher (KH). Interviewees were given advance information about the purpose and factual content so they could prepare any details needed. The interviewing style was naturalistic, employing open-ended questions followed by closed questions to clarify points, obtain examples and to ensure that all the questions had been answered. Gaps in information were supplemented from any other informant suggested by the interviewee, or from the schools' prospectuses on the web.

Treatment of medical schools with differing entry arrangements

Thirty one medical schools were identified. We treated those schools that act as 'feeders' for the clinical phase of others as separate schools, since they make their own arrangements for the early phase of the course. For medical schools that had both undergraduate and graduate level of entry with differing arrangements, only the undergraduate arrangements were used.

Analysis

The interviewer took field notes during the interviews and entered them into a database containing a field for each interview item. For descriptive items, such as the form of contact (item 3), the interviewer compared field contents between records and coded them. The process continued

Table 1. Checklist of items used by interviewer in semi-structured telephone interview.

1. When do students first have contacts with patients – in which year and in which of week/month of the year?
2. How much contact? Can the interviewee quantify it or describe a pattern e.g once a week for 8 weeks a year or 30 days in the second year or a regular day per week?
3. What form does the contacts take?
 - (a) Can they describe the learning activity taking place with patients present?
 - (b) What is the aim of the session? Use as prompts: to practise consultation/examination skills/to learn clinical facts/to link/reinforce class-based learning.
 - (c) Where does the contact take place?
 - (d) Is the contact planned or opportunistic? Are patients brought in especially or only seen when visiting GP, clinic or ward?
 - (e) How long does each individual contact last
 - (f) What is the ratio of students to patients?
 - (g) Is this contact compulsory or an option?
4. What do they aim to achieve through patient contact?
5. How is the mode of contact designed to achieve this/these aim/s?
6. Have they formally evaluated EPC? What are the results?
7. Would they do anything differently if they could?

until no new codes were produced. The item in each record was allocated one or more codes. The codes were validated by an independent reading of the records by a second researcher (VD).

The method of calculation of amount of contact depended on how the information was provided by the interviewee. Where interviewees were able to state categorically the number of days in a given period, the data were taken as given. Interviewees who reported contact time in 'sessions' were asked to define the length of a session. The hours were summed into whole days for reporting findings.

A summary of each interview was sent to the interviewee for clarification and correction. This allowed interviewees to check that the description of purposes and arrangements were accurately reported and to check the accuracy of our calculations.

Results

Response rate

Twenty eight interviews were conducted (response rate 90%). Eighteen out of the 28 returned confirmed interview summaries.

Timing and quantity of contact

Most medical schools (24) have patient contact by the end of the first trimester, eight by the end of the first week and three start on the first day. All schools have introduced patient contact in the first year, though some do not do so until towards the end of that year.

The amount of time students spend with patients varies widely, from four whole day equivalents (WDEs) to 65 in years

Table 2. Quantity of early patient contact.

	No. days in year 1	No. days in year 2	Total no. days in years 1 and 2	Total no. days spent in general practice
Median	9	13.5	23	8
Range (minimum, maximum)	1.5–20	1.5–56	4–65	1.5–37.5
Inter-quartile range	4–15	6–20	16–31	12–31.75

1 and 2 combined (Table 2). However, the number of WDEs is not itself a measure of effort put into teaching and learning from patient contact, nor can this be used to judge learning impacts. For example, one school that has only two WDEs in year 1, distributed over four weeks, but sets aside considerable time in preparation and follow through after the contacts. Others have substantive pieces of assessed coursework based on such contacts (Hannay et al. 2003).

Community location

A considerable number of EPC days are provided by general practitioners (Table 2). The proportion of EPC located in general practice was between 33% and 53% in half the medical schools.

Medical schools' objectives

Most learning activities fulfil more than one objective, and interviewees offered several objectives for patient contact. We distinguished two sets of objectives: 'learning' and 'pedagogic' (Table 3). The learning objectives apply to all stages of the curriculum; the pedagogic objectives are specific to EPC and provide the rationale for it.

Pedagogic objectives

Reinforcing class room teaching. This is particularly important for those schools with integrated curricula where real patients 'bring to life' case based or problem based learning. However, this objective was not confined to them. An interviewee in a school with a traditional course and limited exposure also believed that learning was more effective if linked with patients:

very important early in course because students learn best in context.

Linking basic medical science and clinical care. This is a fundamental principle for those schools that have vertical, fully integrated science and clinical teaching. However, other schools, including those with only brief EPC, also believe that they achieve this. Linkage works in two directions: making the science relevant and interesting while fostering professional attitudes during scientific training:

To provide a scientific approach to medicine while being humanistic.

Table 3. Aims and purposes of early patient contact emerging from interviews.

<i>Learning objectives</i>
1. Understanding the patient experience and perspective of disease and health care.
2. Understanding the social context of illness: the social determinants of health and the impact of disease on families and society.
3. The acquisition of communication skills and professional attitudes in relationships with patients.
4. The acquisition of clinical skills: history taking and clinical examination.
5. The acquisition of core clinical knowledge: learning about disease, diagnosis, and management.
6. Understanding health service organisation: health service delivery and inter-professional relationships.
7. Prequalification experience in preparation for work.
<i>Pedagogic objectives</i>
1. To reinforce class room teaching
2. To link basic medical science to patient care
3. To provide a future focus for the ultimate objective of patient care.

Future focus. Some interviewees stressed the importance of providing a focus for the vocation for which they are training:

Above all to motivate students - they come to study to be doctors.

A few schools reported negative outcomes of EPC: for example, some schools that have a more traditional pre-clinical/clinical split have given students a limited introduction to elementary clinical skills such as measuring blood pressure, but the scope of early contact may be limited by lack of educational support for its impacts. One school described abandoning its experiments with teaching complex clinical skills in earlier years because it found that students had forgotten these after a subsequent year of entirely theoretical instruction.

Varying arrangements to meeting learning objectives and pedagogic objectives

EPC arrangements for each objective vary between schools. Table 4 shows paired examples of schools with differing arrangements to meet the same objectives. The variation in timing and arrangements reflects in part different educational philosophies and different circumstances. The interviewee from one school that has 44 WDEs of substantial early contact

Table 4. Examples of objectives of early patient contact matched to arrangements.

Objectives	Medical school	Related period	Arrangements
Link basic medical science to clinical medicine	24	From Semester 1 Year 1 and to end of Year 2	Systems based teaching. A clinician presents a clinical scenario in the auditorium theatre to all 400 students who then study the related basic medical science in the ensuing week. Integration occurs at the end of the week by discussing the case again. The week of study may involve seeing a patient.
	31	From Semester 1 Year 1	Problem based learning starts with introduction of problem at beginning of week. Students study both medical science and clinical medicine. Integration at the end of the week. Study during the week includes one day seeing patients, in primary or secondary care.
Clinical skills	2	From Semester 1 Year 1	Clerk patients under supervision from the first year and have substantial contact (15 days in year 1).
Communications skills	29	From Semester 1 Year 1	Interactive demonstration in lecture theatre with approximately 250 students. The teacher demonstrates history taking, symptoms, malfunction, questioning styles, and doctor-patient interaction. The students complete a work sheet, introducing them to the elements of history taking. From the second semester of year 2, the students are attached to teams where they learn clinical examination.
Patient experience	20	From Semester 1 Year 1 to end Year 2	An hour long self-presentation by a patient with chronic disease to the class of 95 students. The patient is joined by his/her health care practitioner (not necessarily a doctor). Personal issues are explored including the impact of illness on his/her own life and his/her perception of the quality of that life.
	25	From Semester 1 Year 1 to end Year 2	Students are carefully briefed on discussing patients' health problems, their experience and their expectations of health care. They write a structured report, designed to encourage reflection, of their interview.
Reinforce class room teaching	17	From Semester 1 Year 1	During their hospital attachments, students are expected to record "trigger cases", conditions relevant to the concurrent problem based learning topic. They are common conditions which are likely to be encountered on the wards or in outpatients and are important to learn.
	31	From Semester 1 Year 1	Co-ordination with clinical teachers so that selected patients match the concurrent topic in problem based learning.
Health service delivery and inter-professional relationships	11	Semester 2 Year 2	Use of specialist clinical teachers, usually nurses, to teach clinical skills
	4	From Semester 1 Year 1	Students spend two half days each month observing in a variety of clinical settings, such as physiotherapy. In Year 2, there is a one week nursing attachment.

explained that the arrangement stemmed from a belief in 'the complete integration of theory and practice, basic medical sciences and clinical approaches, clinical knowledge with communications skills' and '(the) conviction that teaching is more effective through problem based learning and should be in the community where the burden of disease lies and where the approach is broader and more rounded.' At another school, where there are eight whole day equivalents in the preclinical phase, EPC is restricted to interviewing patients, followed by a report and an introduction to simple clinical skills. The aim is to 'contextualize learning' rather than cover clinical objectives.

In clinical teaching, three schools invite patients specifically to link with concurrent theoretical teaching, in order to situate learning in the context of patient care (Seely Brown et al. 1989) They also include the use of 'expert patients' and 'standardised patients', patients with the chosen disorder but who have been coached in their role. Other, looser approaches to matching classroom and bedside teaching include a list of 'target conditions' students are encouraged to find and report on during their clinical attachments. GPs' disease registers for identifying suitable patients are made use of by several schools.

Resources, pressure on time and other curricular considerations also influence arrangements. For example, a learning objective on the views and experience of an expectant mother during study of the life cycle could vary from a single episode to an extended relationship over months, and some schools altered such attachments to fit in with patient availability without noticing any loss of learning.

Most medical schools collect student and staff opinions on early patient contact as part of their routine annual curriculum evaluation. The unanimous finding reported, regardless of specific arrangements, is that students find EPC beneficial.

Patterns of patient contact

All medical schools cover the seven learning objectives by the end of their courses: these are inclusive categories which describe the purposes of patient contact. The amount and purpose of patient contact built up over time appeared to follow a pattern, with learning objectives around the social context of health and illness preceding skills based work, and integrated clinical knowledge for practice coming later.

Table 5. Categories of patient contact grouped by aim and activity.

Contact	Aim	Activity
I	To gain familiarity with meeting people and to appreciate the determinants of health.	Students may meet patients or people who may not be receiving medical care but who are seen in a health related context. (i) students observe and follow-up individuals or families in the community, often in a normal part of the life cycle such as families with a newborn. (ii) students observe social care agencies such as drug rehabilitation centres.
II	As for (I) but also to gain communication skills and to understand the patient's experience.	Students meet and communicate with patients with disorders but the emphasis is on communicating and understanding the person's experience of the illness, the implications of the illness on the person's life, and the patient's experience of the health service rather than on learning about systems or the disorders.
III	As for (II) but also to begin to learn clinical skills namely history taking and examination.	Observation of a clinician at first followed later by practical history taking and examination.
IV	As for (III) and in addition to learn core clinical knowledge and to learn clinical skills.	Supplementing theoretical knowledge gained in the class room with contact with patients.

To test this impression, we compared four periods in the programme: the first three months, when most schools initiate some form of early contact; the rest of year one; year two; and after year two (by definition, no longer EPC). The seven types of learning objective for patient contact were grouped into four overall categories (Lincoln & Guba 1985) according to the aims of the contact and the types of activity associated with it (Table 5). Group I incorporates the learning objective of the social context of illness; group II, communications skills and the patient experience; group III, clinical skills; and group IV, integrating core knowledge and skills and gaining experience.

On reviewing the data, we found that understanding the patient experience and communication skills are almost always taught closely, so we combined these. We drew a grid of the four periods and the four categories. We plotted the timing and category for each medical school into the grid.

Three patterns of patient contact emerged (Figure 1). Pattern 3, which we refer to as providing substantial early patient contact, introduces all four forms of contact within the first year if not the first trimester. All schools following pattern 3 tended to integrate their scientific and clinical learning, and to be in the new wave of medical schools in the UK (that is, established in the last five years). Pattern 1, which we refer to as adhering more to the traditional preclinical/clinical split, has a more delayed introduction of contact categories II to IV. There is an intermediate pattern in which, regardless of the preclinical/clinical split, contact categories II to III are introduced at variable times within the first two years.

General practitioners' contribution

GPs in twenty five out of the twenty eight schools contributed specifically in teaching towards the first three learning objectives in Table 3; namely, understanding the patient perspective, understanding their social context, and acquiring communications skills. Some schools chose general practice as the main location for the teaching of these psychosocial aspects of medicine. In nine medical schools, formal teaching of clinical skills also took place in general practice. Four of these schools adhered to the substantial early contact pattern.

Changes in the curriculum

Two medical schools had recently changed their curricula and four were planning to do so. Changes included further vertical integration and more early patient contact.

Six interviewees, including two with pattern 3, would like more EPC. Six interviewees want more EPC in general practice and two want more in hospitals. Four interviewees want more integration of basic and clinical science. They reported two constraints to their desired changes: the lack of resources to employ more tutors and the logistics of co-ordinating hundreds of students, several hospitals and several general practices.

Two interviewees stand out in arguing that curricular reform, including EPC and the early introduction of communication skills teaching, has resulted in the loss of the learning through practical experience that the former apprenticeship system offered, whereby students '...learn skills and knowledge while contributing to work of the firm in giving patient care rather than being a spectator'. These interviewees suggested the revival of the 'student locum' in the final year as a solution.

Discussion

Summary of main findings

This survey describes the current state of EPC in UK medical schools. All medical schools share the same ultimate learning objectives and a commitment to EPC, congruent with their accreditation by the GMC, with general practice making a substantial contribution in many cases. Therefore, the striking variation in the amount of patient contact in the curriculum, ranging from as few as 4 to as many as 65 WDEs in the first two years, deserves attention. However, quantity alone does not provide a sufficient basis for comparison. There is also a rich variation in arrangements such as in teaching and learning activities, the degree of structuring of contact, and the balance between primary and secondary care. How EPC contributes to the ultimate learning objectives of the undergraduate curriculum is best understood in the totality of these features and the staging of the objectives. When all features of patient contact are considered together, it becomes apparent that each school has made arrangements to match the outcomes it

Category of contact (see table 5 for key to categories)	IV			1 6 7 9 12 15 20 22 23 24 25 26 28 30	
	III		1 12 22 23 24	6 7 9 15 20 25 26 28 30	
	II	6 7 9 20 25 26 30	15 22 23 24 28	1 12	Pattern 1 Closer to traditional curriculum split
	I	6 7 9 20 22 23 24 25 26 30	1 15 12 28		
	IV		3 21	5 11 10 14 18 27 29	
	III	27	18	3 5 10 11 14 21 29	Pattern 2 Intermediate
	II	3 5 10 11 14 18 21 27 29			
	I	3 5 10 11 14 18 21 27 29			
	IV	31	17	2 4 8	Pattern 3 Substantive Early Patient Contact
	III	2 4 31	8 17		
	II	2 4 31	8 17		
	I	2 4 8 17 31			
	3m	3-12 months	12-24 months	Over 24 months	
Period					

Figure 1. Categories of patient contact and period in which they commence. Numbers in boxes refer to identity number of school.

has set for different stages in the curriculum. The differences in learning outcomes set for early contact, as opposed to ultimate objectives, appear to play a large part in the variation in timing and arrangements for EPC. We have suggested that three patterns of EPC can be discerned. We suggest that these patterns reflect differing educational philosophies or strategies.

A few schools (pattern 3) subscribe to substantial, early patient contact in hospital and in the community. The educational philosophy which underpins this strategy includes

beliefs in vertical integration and patient-centred, community based education from the start. In contrast, some schools (pattern 1) limit EPC to an introduction to patient-centredness and community issues that may be more fully developed later when specific clinical knowledge and skills are taught. The educational philosophy which underpins this strategy maintains a clear preclinical/clinical split in the curriculum. However, many schools have an intermediate pattern and may be more eclectic in their philosophies and strategies. The ways

in which different settings are used to achieve specific objectives is rarely specified. Our survey shows that one GMC objective has been met with GPs making a substantial contribution to EPC. Although the data regarding GPs' specific contribution was limited in this survey, it appears that it is most commonly to address psychosocial issues rather than the full range of clinical practice.

Strengths and the limitations of this study

The strength of our study is that the information came from a significant informant, whose central role in the curriculum of each medical school lends credibility to its accuracy. Reliance on a sole informant raises the issue of personal bias, but the interview protocol attempted to minimise this with its quasi-factual approach, and opinion was only encouraged in the section addressing desires for change.

Calculating the quantity of contact may have led to inaccuracies, but there is no reason to suspect bias towards either over or under-estimating, and the interview reports were fed back. Interpretation of the grid plot involves a degree of subjectivity. We offer the plots to readers for scrutiny to check our interpretation.

Interestingly, very few informants made specific comments about GP based teaching being different from other settings in terms of its purpose and proposed outcomes. This may reflect the interview protocol, which did not aim to elicit interdisciplinary differences. It may also mean that GP has 'come of age' as a teaching and learning setting, and is included as one of many health service settings where patients can be located. It was clear from the data, however, that general practices were extensively involved in early patient contact, including skills learning, and the general will towards increased EPC has implications for GP tutors just as it does for hospital staff.

Implications for clinical practice and future research

Curriculum planners may find it useful to look at Figure 1 to see where they would place themselves in the continuum and whether their curricular arrangements for EPC are suited to their stage-specific objectives. The answer to this last question would be better informed if we had more and better evidence. We do not know how well current arrangements deliver outcomes set for particular stages in the course. For example, do specially invited patients compared to patients seen during routine clinical care add value to learning? Nor do we know which arrangements deliver better ultimate outcomes. Strategies currently based on convictions may be better informed in future by the synthesis of research evidence on medical education, a synthesis now under way (Best Evidence Medical Education 2005).

Similarly, curriculum planners may need to give more detailed attention to which clinical settings they utilise for each learning objective. Expanding EPC, especially in the context of further expansion in medical school numbers, has considerable cost and logistics implications for primary care and secondary care, and the evidence base for the best use of EPC in different settings therefore becomes vital.

Recent, planned or desired changes in the curricula uncovered by our survey have been in the direction of more patient contact, more integration and more community based teaching. It seems, therefore, that substantial early patient contact is destined to become more widely employed in UK medical schools. The variety of arrangements in existence points to the need for, and at the same time provides, the material for non-experimental, comparative research. This research would have the aim of identifying which methods of EPC most effectively deliver our shared learning outcomes.

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References

- Best Evidence Medical Education. 2005. What is BEME? Retrieved October 13, 2005 from <http://www.bemecollaboration.org>
- British Medical Association. 2005. Becoming a doctor: UK medical schools contact. Retrieved October 13, 2005 from <http://www.bma.org.uk/ap.nsf/Content/BecomingDoctorMedSchool>
- Cade J. 1993. An evaluation of early patient contact for medical students. *Med Educ* 27:205–210.

- Carney PA, Bar-on ME, Grayson MS, Klein M, Cochran N, Eliassen MS, Gambert SR, Gupta KL, Labrecque MC, Munson PL, Nierenberg DW, O'Donnell JF, Whitehurst-Cook M, Willett RM. 1999. The impact of early clinical training in medical education: a multi-institutional assessment. *Acad Med* 74:559–66.
- Dahle LO, Forsberg P, Svanberg-Hard H, Wyon Y, Hammar M. 1997. Problem-based medical education: development of a theoretical foundation and a science-based professional attitude. *Med Educ* 31:416–424.
- Friedberg M, Glick SM. 1997. Graduates' perspective of early clinical exposure. *Educ Health* 10:205–211.
- General Medical Council. 1993. *Tomorrow's doctors: Recommendations on Undergraduate Medical Education* (London, GMC).
- Gray J, Fine B. 1997. General practitioner teaching in the community: a study of their teaching experience and interest in undergraduate teaching in the future. *Brit J Gen Pract* 47:623–626.
- Haffling AC, Hakansson A, Hagander B. 2001. Early patient contact in primary care: a new challenge. *Med Educ* 35:901–908.
- Hampshire A. 1998. Providing early clinical experience in primary care. *Med Educ* 32:495–501.
- Hannay D, Mitchell C, Cheung Chung M. 2003. The development and evaluation of a community attachment scheme for first year medical students. *Med Teach* 25:161–166.
- Howe A. 2001. Patient-centred medicine through student-centred teaching – a student perspective on the key impacts of community-based learning in undergraduate medical education. *Med Educ* 35:666–672.
- Johnson AK, Scott CS. 1998. Relationship between early clinical exposure and first-year students' attitudes toward medical education. *Acad Med* 73:430–432.
- Lassen LC, Larsen JH, Almind G, Backer P. 1989. Medical students experience early patient contact in general practice. A description and evaluation of a new course in the medical curriculum. *Scandinavian J Primary Health Care* 7:53–55.
- Lincoln YS, Guba EG. 1985. *Naturalistic Enquiry* (Thousand Oaks, California, Sage).
- Littlewood S, Ypinazar V, Margolis SA, Scherpbier A, Spencer J, Dornan T. 2005. Early practical experience and the social responsiveness of clinical education: systematic review. *Brit Med J* 331:387–391.
- McLean M. 2004. Sometimes we do get it right! Early clinical contact is a rewarding experience. *Educ Health* 17:42–52.
- Medical Protection Society. Medical Schools. 2005 Retrieved October 13, 2005 from http://www.medicalprotection.org/medical/united_kingdom/Useful_Links/Medical_Schools.aspx
- Murray E, Jolly B, Modell M. 1997. Can students learn clinical method in general practice? A randomised crossover trial based on objective structured clinical examinations. *Brit Med J* 315:920–923.
- Nathanson L, Backer K, Long L. 1987. A first-year medical school pilot program for early clinical exposure. *J Cancer Educ* 2:107–111.
- Pamies RJ, Herold AH, Roetzheim RG, Woodard LJ, Micceri T. 1994. Does early clinical exposure enhance performance during third-year clerkship? *J Nat Med Assoc* 86:594–596.
- Seely Brown J, Collins A, Duguid P. 1989. Situated cognition and the culture of learning. *Educ Researcher* 41:32–41.
- Valkova L. 1997. First early patient contact for medical students in Prague. *Family Pract* 14:394–396.
- Vieira JE, do Patrocinio Tenorio Nunes M, de Arruda Martins M. 2003. Directing student response to early patient contact by questionnaire. *Med Educ* 37:119–125.
- West M, Mennin SP, Kaufman A, Galey W. 1982. Medical students' attitudes toward basic sciences: influence of a primary care curriculum. *Med Educ* 16:188–191.
- Wilson A, Fraser R, McKinley RK, Preston-Whyte E, Wynn A. 1996. Undergraduate teaching in the community: can general practice deliver? *Brit J General Pract* 46:457–460.
- Worley P, Silagy C, Prideau D, Newble D, Jones A. 2000. The Parallel Rural Community Curriculum: an integrated clinical curriculum based in rural general practice. *Med Educ* 34:558–565.