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**A FOCUSED EVALUATION OF
ETHICS EDUCATION IN GLASGOW UNIVERSITY'S NEW
MEDICAL CURRICULUM,
1996-2001**

JOHN G.S. GOLDIE

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LIST OF PAPERS INCLUDED IN THE THESIS

Paper 1

Goldie J. Review of ethics curricula in undergraduate medical education. Medical Education. 2000. 34(2):108-19.

Paper 2

Goldie J, Schwartz L, Morrison J. A process evaluation of medical ethics education in the first year of a new medical curriculum. Medical Education. 2000. 34(6):468-73.

Paper 3

Goldie J, Schwartz L, McConnachie A, Morrison J. Impact of a new course on students' potential behaviour on encountering ethical dilemmas. Medical Education. 2001. 35(3):295-302.

Paper 4

Goldie J, Schwartz L, McConnachie A, Morrison J. The impact of three years ethics teaching, in an integrated medical curriculum, on students' proposed behaviour on meeting ethical dilemmas. Medical Education. 2002. 36(5):489-97.

Paper 5

Goldie J, Schwartz L, McConnachie A, Morrison J.

The impact of a modern medical curriculum on students' proposed behaviour on meeting ethical dilemmas. Medical Education. 2004;38:942-949.

Paper 6

Goldie J, Schwartz L, McConnachie A, Jolly B, Morrison

Can students' reasons for choosing set answers to ethical vignettes be reliably rated? Development and testing of a method. Medical Teacher. 2004;26(8):713-718.

Paper 7

Goldie J, Schwartz L, McConnachie A, Morrison J. Students'

attitudes and potential behaviour with regard to whistle blowing as they pass through a modern medical curriculum. Medical Education. 2003; 37(4):368-75.

Paper 8

Goldie J, Schwartz L, Morrison J. Students' attitudes and

potential behaviour to a competent patients request for withdrawal of treatment as they pass through a modern medical curriculum. Journal of Medical Ethics. 2004;30:371-376.

Paper 9

Goldie J, Schwartz L, Morrison J. Sex and the surgery: students' attitudes and potential behaviour as they pass through a modern medical curriculum. Journal of Medical Ethics. 2004;30:480-486.

PRESENTATIONS AT SCIENTIFIC MEETINGS RESULTING FROM THE
RESEARCH CONTAINED IN THE THESES

A.D.E.G. conference, 1998.

Department of General Practice, University of Dundee 2001.

"Teaching Medical Ethics" conference, Glasgow 2001.

11th Ottawa Conference on Medical Education, Barcelona 2004.

Oral and poster presentations.

SUMMARY

Background

Ethics teaching in medical education has "come of age" in the last 40 years with its formal inclusion in medical curricula. Despite the increased activity in the field of undergraduate medical ethics education, few evaluation studies have been undertaken. The introduction of the new Glasgow medical curriculum provided an opportunity for evaluation of ethics education in the context of a modern curriculum. The constraints imposed prevented a comprehensive evaluation of ethics teaching in the new curriculum. Its focus had to be narrowed.

This thesis builds on a dissertation submitted for a MMed Degree at Dundee University, which covered the evaluation of ethics education in the first year of the new curriculum and produced the first three papers in the series being presented.

Aims

It was decided to perform both process and outcome evaluation in year 1, where the largest proportion of formal curricular ethics sessions takes place. Outcome evaluation continued throughout the curriculum. The aims of the first year process evaluation were:

- 1) To judge the value of the curricular experiences provided for students in terms of:
 - a) Acceptability to both students and tutors.
 - b) Feasibility.
 - c) Relevance of material to aims of teaching.
- 2) To judge the effectiveness of clinical tutors as facilitators of learning.

The aim of the outcome evaluation was to test the following hypotheses:

1. Small group ethics teaching, in the first year of an integrated medical curriculum, will have a positive impact on students' potential behaviour when facing ethical dilemmas.
2. The effect will be greater than that produced by a discrete lecture and large group teaching based course early in a traditional curriculum.
3. Students' performance will be adversely affected as they progress through the medical curriculum.
4. The effect will be less pronounced in students undertaking the modern curriculum compared to those undertaking the traditional curriculum.

Methods***Year 1: Process Evaluation***

A multi-method approach involving open questionnaires, focus groups with subsets of students and tutors, and a structured tutor rating scale was adopted. The data obtained underwent methodological triangulation.

Year 1: Outcome evaluation

A quasi-experimental, pre-and post-test, non-equivalent control group design involving students from the new curriculum and a control group from the last year of the old curriculum.

Main outcome measure

Student choice of pre-set answers to the ethical dilemmas posed by the consensus vignettes of the Ethics and Health Care Survey Instrument (EHCI) in terms of their consistency with consensus professional judgement.

On-going Outcome Evaluation

A cohort design was employed. Students were asked to complete further EHCIs post-year 3 and post-year 5. The poor response rate from the cohort from the old curriculum post-year 3 prevented further comparison. Students who left the curriculum post-year 3 to undertake a one-year intercalated degree, were included at the end time point. All students completing the EHCI on at least one occasion

during the curriculum were included in the final data analysis.

Development and testing of a methodology for analysing subjects' written justifications of their choice of pre-set answers to the vignettes of the EHCI:

A method for analysing subjects' justifications for their choice of set answers to the vignettes had not been developed. A method therefore required to be developed and its reliability tested. The development and testing phases merged. Seven raters classified the responses of ten subjects to the nine consensus vignettes of the EHCI, on two occasions. The first stage involved raters' judging the consistency of subjects' justifications with consensus before rating consensus responses on the action justification and values recognition hierarchies. Reliability was investigated using generalizability theory.

Outcome evaluation of individual vignettes

Students' pre- and post-year 1, post-year 3 and post-year 5 responses to the "whistle blowing", "withdrawal of treatment" and "attractive patient" vignettes of the EHCI were examined quantitatively and qualitatively. Analysis of students' pre-set answers enabled measurement of movement towards professional consensus opinion. Analysis of written justifications helped determine whether their reasoning was

consistent with professional consensus and enabled measurement of change in knowledge content and recognition of the values inherent in the vignette. Themes on students' reasoning behind their decisions were also identified.

Results

First Year Process Evaluation

The structure and process of the small group sessions appeared to contain many of the conditions required to foster Transformative Learning. Small group teaching proved highly acceptable to both students and tutors. Tutors' teaching skills were central to its effectiveness. Tutors played an important role in promoting students' appreciation of the relevance of medical ethics to clinical practice, and in establishing a climate where constructive criticism of colleagues' actions is acceptable. Course integration, including the provision for students of clinical experiences on which to reflect, was an important aid to learning. Students and tutors were noted to be driving the ethics curriculum towards having a contextual rather than theoretical base.

Outcome evaluation

There was a significantly greater increase in the number of post-year 1 consensus answers among students from the new

curriculum ($p=0.0048$): odds ratio for obtaining the post-test consensus answer in this group compared with controls from the old curriculum 1.73, 95% CI (1.28,2.33).

The probability of the new curriculum cohort giving a consensus answer reduced slightly post-years 3 and 5, but remained significantly higher than pre-year 1. The performance of students undertaking a one-year intercalated BSc appeared to regress. Students' performance on vignettes relating to issues of professionalism showed little improvement throughout the curriculum.

Analysis of students' written justifications of their choice of pre-set answer to the "withdrawal of treatment" vignette found evidence of cognitive learning in terms of an improvement in the sophistication of the justifications. Post-year 1 the justifications for the decision to assist the patient to withdraw life-prolonging treatment increasingly identified, classified and analysed the issue in terms of the principle of patient autonomy and its prerequisites patient competence and informed consent. This improvement was sustained post-years 3 and 5, although no further improvement was found. Analysis of students' written justifications for the "whistle-blowing" and "attractive patient" vignettes found students' performance to be poorer than it appeared on analysis of their choice

of pre-set answer. For both vignettes only 48-64% justified their choice of consensus pre-set response with reasoning based on consensus opinion. There was also no change in the levels of sophistication of written justifications in either hierarchy as students passed through the curriculum.

Testing the methodology for analysing subjects' written justifications

There was a lack of consistency among the raters in deciding whether responses were judged to be consensus or not. If the EHCI were to be used to make decisions on subjects further training and calibration of raters, together with the strategy of using four raters per questionnaire would be required to produce satisfactory reliability levels for this component of the methodology.

Conclusions

- The medical faculty has made a start to creating an educational environment, which can tackle the problems of the hidden curriculum and promote students' ethical development. However, more needs to be done to build on what has been achieved.
- The decrease in students' abilities, following the first year of the curriculum, to analyse cases with an ethical component and make clinical ethical decisions cast doubt

on whether the curriculum in action is achieving the desired outcomes relating to students' ethical development.

- The adoption of the three-circle model of outcomes for the Glasgow curriculum is recommended. These would provide a clear focus for both students and teachers provided they are clearly and unambiguously communicated to all involved in the curriculum.
- To achieve the desired outcomes for ethics and law the curriculum should be built upon an integrated and cohesive structure through the contributions each phase of the curriculum and each discipline makes to achieving the outcomes.
- Adequate provision and coordination of teaching in ethics and law requires at least one full time senior academic in ethics with relevant professional and academic expertise. The University should consider replacing the original post holder.
- Role modelling is one of the most powerful means of transmitting values, attitudes and patterns of behaviour to students. Modelling on-the-job and through the role as teacher should be encouraged throughout the curriculum.

- It is suggested that the change from mainly small group ethics teaching to predominantly lecture and large group teaching in years 2 and 3 of Vocational Studies was a factor in the lack of improvement found post-year 3. It is hypothesised that small group ethics teaching is more effective than the lecture and large group format for teaching in the early curricular years. Further testing is required to establish the generalisability of these findings.
- Small group teaching is particularly effective for learning which requires the integration of cognitive and attitudinal elements.
- Early clinical exposure provided important ethical learning experiences.
- Interdisciplinary and Interprofessional collaborative teaching in the curriculum could be extended.
- The outcome-based approach has the potential to fully integrate ethics into the clinical curriculum and promote trans-disciplinary learning.
- The routemap for ethics and law teaching in the curriculum should include teaching in the clinical core.

- Both students and teachers require a mechanism to provide coherence within medical ethics teaching, particularly in the clinical years, to allow for both microethical clinical decisions and macroethical health care decisions to be defended by rational justifications which are clear and concise. This requires the provision of reflective space in which the implications of a case may be linked against a broader background. The effectiveness of the current arrangements should be investigated.
- If Glasgow is to become a fully operational outcomes-based school the assessment procedures adopted should assess all the desired outcomes using a performance-based approach.
- Social cognitive theory and Aristotle's framework for virtue provide approaches which can help guide clinical teachers provide a curriculum which enables students to achieve the desired outcomes relating to ethics.
- The use of a multi-method approach to outcome evaluation and a continuation of a multi-method process evaluation through the curriculum is recommended to further establish if the outcomes are being achieved and provide greater insight into the curriculum in action and the hidden curriculum. The design would require to be adapted for the different phases of the curriculum.

- The EHCI has potential as an assessment instrument. However, further psychometric testing is required.
- The value of the data obtained by asking subjects to justify their choice of pre-set answers to the vignettes of the EHCI goes beyond what can be easily codified and reduced to numbers.

INTRODUCTION

The introduction of a new curriculum, particularly one that would be radically different from its predecessor, poses many challenges for those involved in its development and implementation. Integral to curriculum development is the requirement for evaluation (Kelly 1989). Glasgow University Medical School's move, in October 1996, from a traditional to an innovative new curriculum provided a number of opportunities for evaluation research.

One such opportunity was in medical ethics education. Ethics, from being on the periphery of the old curriculum, became one of the main curricular themes. In planning medical ethics education in the new curriculum, the current consensus and research findings on the most effective methods were considered, while taking care to adhere to the curriculum's overriding learning ethos. A focused evaluation of ethics learning in the new Glasgow curriculum forms the basis of this thesis.

THE NEW GLASGOW MEDICAL CURRICULUM

In recent times there has been growing dissatisfaction with traditional undergraduate medical education, both within the medical profession and the wider society, which has led to calls for change (Melville and Johnstone 1982, Muller 1984, Kings Fund 1992, GMC 1993). Undergraduates in traditional curricula feel overloaded with content, lose their early motivation and become increasingly cynical (Becker et al 1961, Maddison 1978, Simpson 1972). They have difficulty in seeing the relevance of much of what they are taught, especially in the pre-clinical years, and are unable to retrieve and use it in a clinical setting. In the clinical years, many students do not have a clear perception of their task (Montford 1989) and are ill-prepared for life as a pre-registration house officer (Dowling and Barrett 1991).

The General Medical Council, under the terms of the Medical Act 1983, made a series of recommendations for undergraduate medical education in their document "Tomorrow's Doctors" (1993). The main recommendations are shown in appendix 1. Glasgow University responded by introducing a new medical curriculum in October 1996. The new curriculum will be described and examined to provide the context for the research forming the basis of this

thesis.

AIMS OF THE CURRICULUM

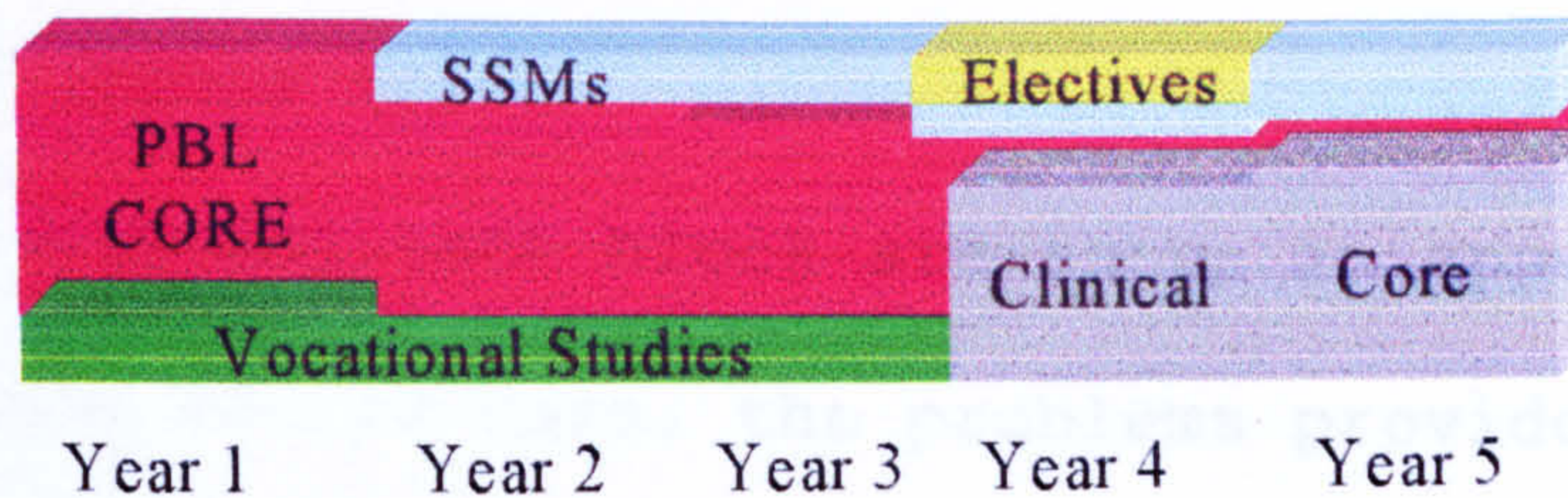
The original aims of the new curriculum are grouped into five main areas as shown in appendix 2.

CURRICULUM DESIGN

The design of the curriculum is shown in figure 1.

Figure 1

The new Glasgow Curriculum



PBL Core

Problem-based learning (PBL) forms the core of the curriculum. In the problem-based approach students tackle patient problems, health delivery problems, medical science problems or research problems, which act as a stimulus for

learning in the basic sciences and clinical medicine (Barrows and Tamblyn 1980). Problem-based learning aims to optimise learning by helping students activate relevant prior knowledge, providing a context that resembles the future professional context as closely as possible stimulating students to elaborate on their knowledge (Walton and Matthews 1989). A useable body of integrated knowledge is developed using this approach.

In the Glasgow curriculum, students meet twice weekly, in small-groups of eight. The groups are facilitated by a tutor who, in the first two years, can be in clinical practice or from basic and medical science departments. In year 3 facilitators are practising clinicians. Teaching is in five-week blocks. After each block the groups disband and new groups form.

The themes for each block are shown in appendix 3. In the first year of the core, the problems provided introduce a broad sweep of subjects through the concept of the "Hierarchy of Systems". Year one aims to develop skills required for problem-based learning, including the personal skills associated with active group work. In second year, the knowledge base of the students is advanced and their learning skills are developed by the introduction of a more sophisticated form of Problem-based Learning using more

complex scenarios. Third year has its emphasis in clinical disorders based on body systems. The scenarios being designed to further increase the challenge to the students and to enable them to practice hypothetico-deductive reasoning. A final element of the core takes place in the clinical years and has clinical symptomatology as its emphasis.

The small-group sessions are supported by fixed resource sessions, which can be in the format of a non-didactic lecture, a seminar or laboratory session. These are used to provide:

1. Orientation and perspective
2. Guidance
3. Stimulation and maintenance of interest

The organisation of the PBL core recognises that learning is developmental rather than linear, conforming to Bruner's (1977) concept of a spiral curriculum, where one returns to concepts at an even higher level of understanding rather than a linear and hierarchical design.

Vocational Studies

Vocational Studies runs in parallel to, and complements the PBL core in the first three years of the curriculum. Its aim is to facilitate the development of professionally responsible attitudes and skills required by students for clinical practice.

Vocational Studies covers a number of different learning domains (appendix 4). Medical Ethics and Law are grouped with professional behaviour under the heading "Right Thing To Do" (A separate professionalism theme has been introduced in recent years). Routemaps are provided for each of the Vocational Studies domains, which communicate the content and objectives of the course to students and staff. It is planned as a sequence of activities and experiences linking learning in these domains. For example, a visit to a hospital ward in year 1 links learning in the "Understanding the clinical context domain" with learning in the "Communication skills" and "Right thing to do" domains. The emphasis in Vocational Studies is on learning by experience allowing learning to be contextual. Many of the domains continue into the PBL core, Special Study Modules and Clinical Studies.

In keeping with one of the main aims of the medical curriculum, Working with Others, groups of eight students

meet weekly throughout the year with the same clinical tutor, most of whom are general practitioners. Tutors are encouraged during these sessions to adopt a number of roles. The move to student-centred learning requires tutors to become facilitators of students' learning. For each of these three-hour sessions, learning objectives are provided along with prompt sheets and background material. The course materials serve as a focus for learning and the tutors' role is not to inform students, but to encourage and facilitate them to learn for themselves. This reflects the constructionist approach to learning where knowledge is "constructed" in the mind of the student and is constantly evolving (Brooks and Brooks 1993). As no set of resource materials is perfect for all students, it is the responsibility of the teacher to facilitate students' use of the resources by overcoming any deficiencies and by integrating them with the curriculum (Harden and Crosby 2000). They are encouraged to share their relevant clinical experiences with students and serve as role models.

The small group sessions are complemented by plenary seminars, where students have the opportunity for interactive discussion with relevant experts and members of other relevant disciplines.

In year 2 an increasing amount of the course is devoted to the development of clinical skills (appendix 5). Students have the opportunity to practice these skills in clinical practice sessions which involve hospital-based as well as community-based teaching. In year 3, students alternate each week between Hospital Clinical Practice and Community Clinical Practice for these sessions as well as undertaking sessions relevant to the other domains.

Clinical Core

Glasgow, in conjunction with the other Scottish Medical Schools, have embraced an outcome-based approach to medical education (Scottish Deans Medical Curriculum Group 2002). This is in line with recent GMC recommendations (GMC 2002), which place greater emphasis on learning outcomes and on the assessment of the outcomes. "In line with current educational theory and research, we have adopted an outcomes-based model. This sets out what is to be achieved and assessed at the end of the medical course in terms of knowledge, skills and behaviour" (Rubin & Franchi-Christopher 2002). This approach to curriculum planning is apparent in the clinical core.

Outcome-based education is an approach at the cutting edge of curriculum development whose evolution owes much to the

work of Spady (1998). It is an approach to education in which decisions about the curriculum are driven by the outcomes the students should display by the end of the course. In outcome-based education, product defines process and the outcomes agreed for the curriculum guide decisions about content and its organisation; the educational strategies adopted; the teaching methods used; the assessment procedures and the educational environment (Harden et al 1999). Outcome-based education therefore has two requirements, after Harden et al (1999):

1. Learning outcomes are identified, made explicit and communicated to all concerned.
2. The educational outcomes should be the overriding issue in decisions about the curriculum.

Over the past ten years, educators and individuals in a number of countries have been developing approaches to outcome-based education (Harden, 2002). In the USA, Kassebaum et al (1997) reviewed accreditation reports of medical schools and found that only a small percentage of schools had "robust" institutional objectives that guided their educational programs. They noted that schools where there was a lack of institutional objectives were more likely to have accreditation citations for shortcomings in curricular management.

The Association of American Medical Colleges (AAMC) formed an advisory group to recommend guidelines to U.S. medical schools on the objectives of medical education. The Medical Schools Objectives Project (MSOP) identified attributes based on society's expectations of a good physician. They were grouped into four categories (AAMC, 1998):

- 1 Physicians must be altruistic
- 2 Physicians must be knowledgeable
- 3 Physicians must be skillful, and
- 4 Physicians must be dutiful.

Some individual medical schools in the U.S.A. have developed their own competencies. Brown University in Providence, Rhode Island, U.S.A., described a list of nine abilities (Smith & Dollase, 1999; Smith, 1999). Likewise, in Canada, physician groups developed the essential competencies and roles of their profession. The CanMEDS 2000 Project Societal Needs Working Group reported seven roles of specialist physicians (CanMEDS, 2000):

- 1 Medical expert
- 2 Communicator
- 3 Collaborator
- 4 Manager
- 5 Health advocate

6 Scholar

7 Professional

Within each of these categories, a number of specific attributes or objectives were identified.

The Accreditation Council for Graduate Medical Education (ACGME) in the USA also specified learning outcomes for the training of the doctor (ACGME, 2003). The International Institute of Medical Education has produced an international consensus on the learning outcomes or minimum essential requirements expected of a student on graduation from medical school (IIME, 2002).

All five Scottish medical schools have adopted the same framework for learning outcomes (Simpson et al, 2002). This is based on the three-circle model, devised to classify the learning outcomes at the University of Dundee School as illustrated in Figure 2 (Harden et al 1999a & b). The learning outcomes are shown in appendix 6.

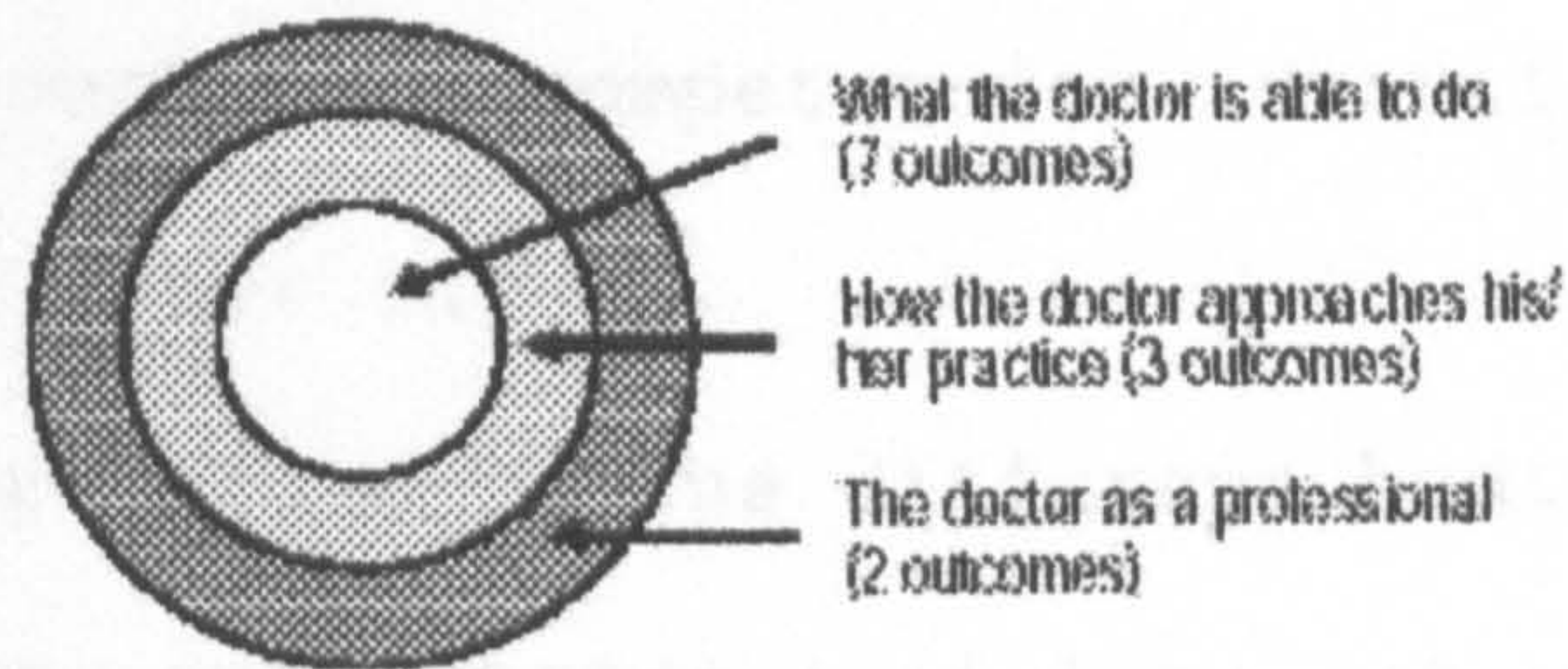


Figure 2: The three-circle framework for learning outcomes

The model is based on the three essential aspects of competence of a generalist physician. The inner sphere describes those things the physician is able to do. These include the clinical, procedural, investigation, management, health promotion, communication, and information handling skills. The middle layer represents how the physician approaches the skills with knowledge and understanding, ethical/legal principles, and clinical reasoning and decision making abilities. The outer layer represents the development of the personal characteristics of the physician. Such characteristics include understanding the physicians' roles in society and their personal development as lifelong learners and professionals. In the three circle model the competencies implicit in the middle and outer circles transcend and act

on, or work through, the competencies identified in the outcomes in the inner circle.

The outcomes specified by the different bodies mentioned have similarities and embrace a similar set of competencies or abilities.

The educational objectives of the clinical rotation and list of clinical competencies required by students in Glasgow by the end of the rotation are shown in appendix 7. The master list of clinical presentations, which acts as the background against which the students' experiences in years four and five of the curriculum is set, is shown in appendix 8. Both of these provide a framework for the clinical curriculum and are communicated to all those involved in the educational process.

Throughout years 4 and 5, students rotate through three five-week blocks of medicine and three five-week blocks of surgery, during which they participate in associated subspecialties. They also have 5-week attachments in general practice, obstetrics and gynaecology, paediatrics and psychiatry. There are a series of Academic sessions throughout years 4 and 5, the content of which is shown in appendix 9. These aim to address high level or important issues, or to bring together themes which span disciplines. Basic science, ethics and public health are important

components of many sessions. The following general principles are followed:

1. The format of the sessions should be varied as much as possible.
2. Scientists, non-medical staff, students and patients should be involved where possible.
3. General practice should be involved.

As part of their learning students are required to write up 40 portfolio cases from the master list of presentations. The numbers of cases required within each speciality is as follows:

12 medicine

12 surgery

4 obstetrics and gynaecology

4 child health

4 psychological medicine

4 general practice

One case each term is required to cover a specific GMC theme (appendix 10).

The suggested format of teaching during clinical attachments is shown in appendix 11. This is not prescriptive. Adjustments can be made at anytime to the educational process provided the changes can be justified in terms of the specified learning outcomes.

Special Study Modules and Electives

The PBL and Clinical cores are supported by a series of seven student-selected Special Study Modules (SSMs). The SSMs commence in year 2 and run throughout the rest of the curriculum. These constitute over 20% of the structured course time. They allow students to study in-depth areas of particular interest to them. The students also undertake two four-week electives between years three and four and years four and five, which provides the opportunity to conduct in-depth studies away from the university.

Intercalated degrees

While the new curriculum offers students the opportunity to undertake a 2 year honours basic science BSc, following completion of the Core, it also offers a 1 year BSc in a wide variety of life sciences and more clinically based areas of study.

ASSESSMENT

Assessment in the curriculum is both formative and summative. At the end of each PBL block, facilitators provide formative assessments. While no record of these assessments is kept centrally, students whose grades are within 10% of the pass mark are given the opportunity to submit their cumulative formative assessments for review by the progress committee. Throughout the first three years students are required to submit coursework from both PBL and Vocational Studies, which contributes to summative assessment. The coursework involves students' reflecting on their experiences and their learning.

At the end of each of the first three curricular years students sit a written paper and an Objective Structured Clinical Examination (OSCE). In year 1 they also undertake a Medical Independent Learning Examination (MILE) (In recent years the first year OSCE has become formative rather than summative). The written papers include Modified Essay Questions (MEQ), short answer questions, and "objective testing" using extended matching questions. The examinations are broad based, designed to test widely across the areas covered up to that point in the curriculum. The OSCEs test the developing competence cumulative experience of students. They are again broad

based, designed to test widely across the clinical/practical/communication skills covered in the curriculum up to that point. Students' scores are criterion referenced, being graded A to G according to the University's grading system which uses established criteria.

In the clinical years, students are encouraged to discuss their progress with their Educational Supervisor half way through each block. At the end of each attachment the student and his/her Educational Supervisor summatively rate the student's performance by completing the Year 4&5 assessment form together (appendix 12). This process can include information from other members of the Educational Supervisory team. The Educational Supervisors also review the portfolio cases with the students at this point. At the end of each block, students are also examined on one patient using the Objective Structured Long Examination Record (OSLER) format.

Students assessed as borderline pass or lower are required to discuss their performance with the Year 4/5 co-ordinator and their Advisor of Studies. Students failing one attachment in Year 4 are required to repeat that discipline as a directed elective between years 4 and 5. Students failing two attachments are required to repeat the whole of

year 4. A single fail in Year 5 results in students being unable to sit the first diet of the final MB exam. The discipline has to be repeated during the summer before the student is able to take the examination for the first time in the subsequent autumn diet.

Students are assessed on their SSMs. The project-specific and general educational learning objectives are agreed between the student and tutor at the start of the SSM. The learning contract is documented. Students are required to produce a written report, which includes discussion of whether the learning objectives have been achieved. The SSM supervisors and External examiners assess the written reports. Students are required to pass six out of the seven SSM blocks in order to graduate.

At the end of year 5 the students sit their final MB exam which includes written papers, in the same format as the earlier years and a clinical exam. In the early years of the curriculum this was in both the OSLER and OSCE formats. From next year only the OSCE format will be used. Again students are graded according to established criteria. A selection of students' portfolio cases has to be produced for inspection by the External examiners.

REVIEW OF THE NEW CURRICULUM

The design of the new curriculum, and how it compares to the previous curriculum, can be examined using Harden's S.P.I.C.E.S model (figure 3) (Harden et al 1984). This approach examines the curriculum in terms of six main curricular issues. Each issue is presented as a spectrum between two extremes. On the left are the more innovative approaches and on the right are the more traditional strategies.

Figure 3

The SPICES model

- *S* tudent-centred-----Teacher-centred
- *P* roblem-based-----Information gathering
- *I* ntegrated-----Discipline-based
- *C* ommunity-based-----Hospital-based
- *E* lectives-----Standard programme
- *S* ystematic-----Apprentice-based

Student-centred/Teacher centred

The curriculum moved from a predominantly teacher-centred to a student-centred approach. In the old curriculum the teacher was the key figure and there was emphasis on

activities such as the formal lecture, laboratory sessions and traditional clinical teaching where the teacher selects, organises and delivers information. Individual students had little control over what they learned, the order in which they learned things and the methods they had to use. Learning was more passive than active. There was little help provided with study techniques and feedback on examination results was not provided.

Problem-based learning, a particular variety of student-centred learning, is the main teaching method used throughout the core of the new curriculum. In this process, the students, under the guidance of the facilitator, decides the learning objectives, the method(s) used to achieve the objectives and the learning resources. The students evaluate their learning in terms of both process and outcome.

In Vocational Studies, learning is also student-centred. The course materials and routemaps provided for each learning domain communicate the aims, content, nature and sequence of learning. The course materials, as mentioned previously, serve as a focus for learning. The tutors' role is not to inform students, but to encourage and facilitate them to learn for themselves. The emphasis is on experiential learning with tutors adopting a variety of

roles, according to the learning situation, designed to promote students' learning. Students are encouraged to reflect throughout Vocational Studies on their professional development with tutors providing feedback.

Learning in the clinical core is student-centred. The provision of clear aims for the clinical rotation, along with the master list of clinical presentations, provide students with a framework, which allows them to plan their studies and gauge their progress. At the beginning of each block, students, under the guidance of their clinical supervisors, agree their individual learning plans. The students and their educational supervisor review the learning plans and students' performance throughout the attachments. Half of students' time is scheduled for self-directed learning during clinical attachments. The students and their supervisors assess performance on each block in terms of review of portfolio cases and joint completion of the rating scales.

During the SSMS, students, under the guidance of their supervisors decide on learning objectives, course content, learning methods, learning resources and the sequence and pace of learning. They also have input into the assessment in terms of deciding whether their learning objectives have been met.

Problem-based/Information gathering

The emphasis of the old curriculum was to impart a large body of basic science and clinical knowledge to students. Once qualified, students were expected to be able to synthesize this information and apply it to the care of their patients, a task for which many graduates, as previously mentioned, felt ill-prepared. The problem-based approach was designed to help alleviate these problems. With problem-based learning forming the core of the new curriculum, the Glasgow curriculum has moved substantially to the left of this continuum of the SPICES model.

Integrated/Discipline-based teaching

In the previous curriculum teaching was discipline based. The building block principle was used in its design (Harden et al 1984). In the pre-clinical years, integration was on the lowest rungs of Harden's integration ladder (Harden 2000). There was little vertical integration in the curriculum. While teaching was mainly discipline-based in the clinical years, horizontal integration occurred in topic teaching lectures, which were integrated round the systems of the body and involved input from the departments of medicine and surgery, their associated subspecialties and general practice.

In planning the new curriculum, the faculty management structure was designed to promote integration. For each component of the curriculum, a convenor was appointed who established a small team. Within the teams, one individual had the responsibility for co-ordinating each year of the programme and ensuring the horizontal integration of the curriculum in their year. As such, they worked closely with teams responsible for the other component parts of the curriculum. To complement these "horizontal" co-ordinators, a series of theme advocates were appointed. The advocates covered the themes recommended by the GMC, ensuring that the themes were developed throughout the curriculum.

The development of the curriculum was, therefore, an iterative process with contributions alternately from the Year co-ordinators and subsequently from the theme advocates. A process of matrix management was employed to ensure the curriculum was comprehensive, balanced and integrated.

One of the essential characteristics of PBL is integration of the curriculum. The curriculum is organised around problems rather than disciplines and is not separated into basic sciences and clinical sciences components. Learners are provided with a task or challenge as a source for learning which is similar to one that will confront them in

their professional lives (Walton and Matthews 1989). PBL has the potential for trans-disciplinary integration, where education is reflected in learning described by McCombs (1992) as "an individual process of constructing meaning from information and experience, filtered through each individual's unique perceptions, thoughts and feelings."

Similarly, with the emphasis in Vocational Studies being on learning by experience, students learn in the context in which the knowledge, skills and attitudes they acquire will be applied in the future. Linkages within the course materials and the provision of routemaps also promote integration of the different domains of learning and help promote integration of vertical curricular themes. The ability of Vocational Studies tutors to link domains during teaching sessions also promotes integration.

There is temporal co-ordination between PBL and Vocational Studies. For example in year 1, when one of the PBL scenarios involves a patient receiving treatment in Accident & Emergency (A&E), a visit to A&E as part of the "Understanding the clinical context" domain of Vocational Studies is organised to coincide with it. Horizontal integration is a feature of the fixed resource and Vocational Studies plenary sessions. Teaching during these sessions is often multi-disciplinary.

Integration in the clinical core is potentially trans-disciplinary. The focus for learning is the field of knowledge as exemplified in the real world. The teacher provides a structure or framework of learning opportunities, but the integration is done in the mind of the student, based on hi-fidelity situations in the real world of clinical care (Harden 2000). Integration in the clinical years is encouraged and facilitated by the specification of the desired learning outcomes. A clinical attachment in obstetrics, for example, might cover not only the outcomes directly relating to the field of obstetric practice, but may also contribute to outcomes such as communication skills, health promotion, ethics in medicine and the doctor as a member of a team. It is also promoted by the provision of the master list of clinical presentations. This encourages students to look at each of the presentations from the perspective of the different attachments. For example, abdominal pain may be viewed differently in surgical, medical and gynaecological attachments. The Academic session, which initially ran throughout the clinical years and now takes place in two academic weeks, continues the process of vertical integration of the biological and clinical sciences.

Community-based/Hospital-based education

The previous curriculum provided exposure to patients, including patients in the community setting, for the first time at the end of the pre-clinical years. Students had short attachments to General Practice during years 3 and 5. Community-based experience during speciality attachments was opportunistic.

In the new curriculum, students, from the beginning of Vocational Studies, have regular patient contact and obtain regular experience in the community setting. They spend time in the general practice setting, interview patients in their own homes and diagnose the health needs of practice communities. In years 2 and 3, clinical skills are learned and practised in the general practice as well as hospital settings. Students are provided with the opportunity to observe the influence of family dynamics on patients' health and illness in year 2 and experience the longitudinal care of patients with chronic illness in year 3.

A 5-week clinical attachment in General Practice is an integral part of the clinical rotation. During their other clinical attachments students are provided with regular, planned community experience e.g. attendance at shared care

clinics, attachments with Community Psychiatric Nurses (CPNs) or Community midwives.

Electives/Standard programme

The opportunities for undertaking intercalated years of in-depth study have been expanded. The old curriculum offered students the opportunity to undertake a two-year intercalated honours basic science BSc either after the completion of the pre-clinical years or following third year when students had studied the more clinical sciences e.g. pathology. While the new curriculum still provides the opportunity to undertake a 2 year honours basic science BSc, a wider range of options is available for those who wish to pursue a scientific interest as well as those who wish to experience clinical research, both within and outside the hospital environment.

From year 2 students undertake seven SSMs where they have the opportunity to select subjects or projects of their own choosing. The two electives also provide students with opportunities for in-depth study away from the university.

Systematic/Apprenticeship or opportunistic programme

The previous curriculum had moved towards a more planned or systematic approach to the curriculum with students being provided with relevant clinical teaching, which was timed to coincide with topic teaching areas and organised at divisional level. However, the apprenticeship model predominated during clinical attachments.

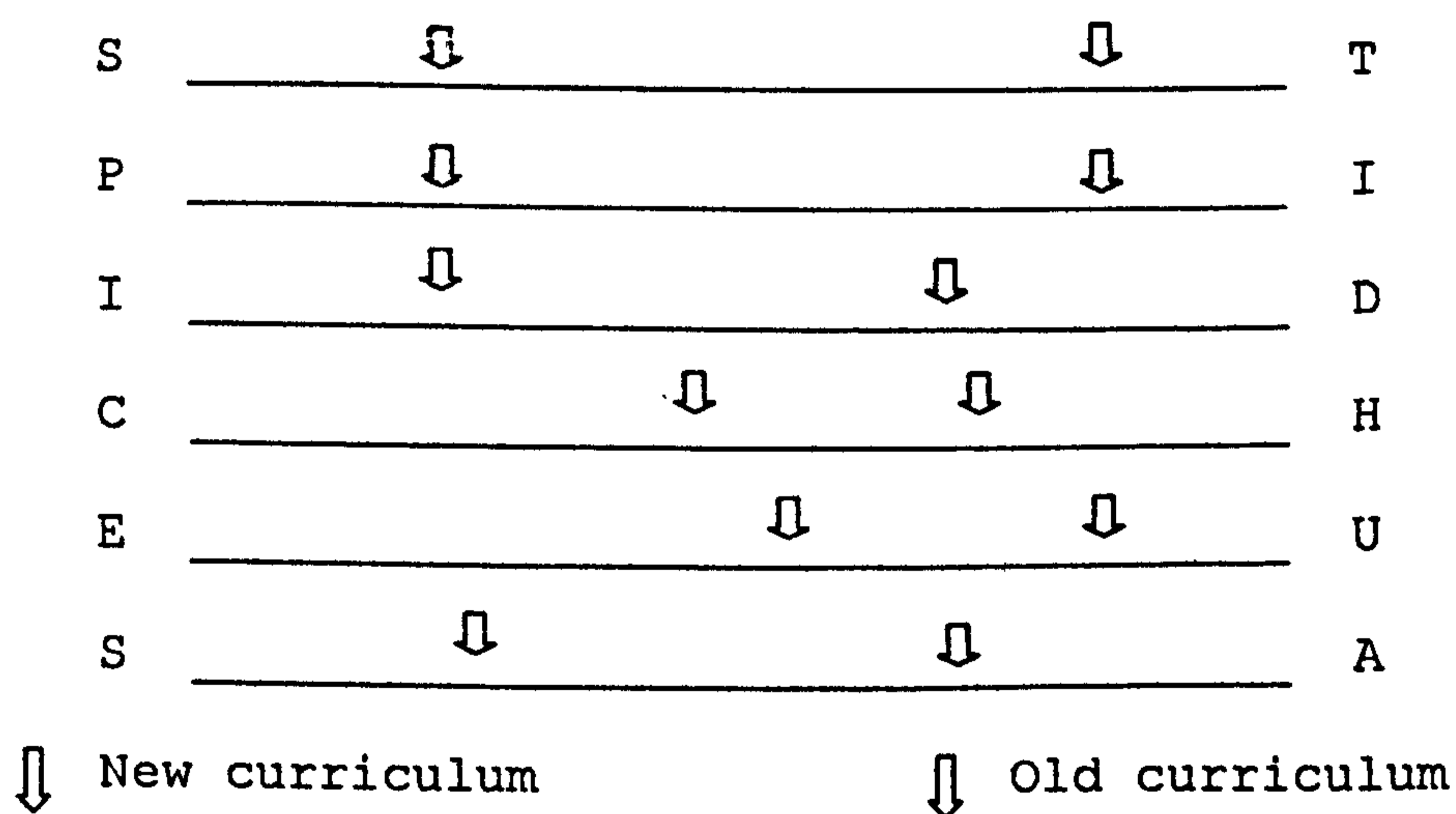
The design of the new curriculum moved the process on considerably. Vocational Studies sessions are planned to coordinate with relevant PBL sessions. The aims of the clinical rotation and the master list of clinical presentations, from which students are required to write up a portfolio of cases, communicated to all those involved in the educational process, provide a framework for the clinical curriculum. The clinical attachments have been designed so that the experiences necessary to meet the desired outcomes are covered for all students. Variation in clinical attachments are minimised by students rotating through a variety of hospitals where, for example, all speciality subjects are covered. The regular clinical teaching sessions can be organised on a unit or divisional basis where appropriate. Educational Supervisors help students gain appropriate experience in specialities where students have had no formal attachment. SSMS provide a

further opportunity to gain more in depth experience of particular specialities. The systematic approach is reflected in the assessment process where both the breadth and depth of students' knowledge is tested and are criterion referenced.

The position of the new curriculum on each continuum can be represented diagrammatically (figure 4). The position of the new curriculum on each continuum is shown in red, with the previous curriculum's position shown in black.

Figure 4

The position of Glasgow's new and old curricula on the SPICES model



To respond to the challenge of "Tomorrow's Doctors", Glasgow's medical curriculum has moved to the left of the model on all parameters. It is in this context that ethics education takes place.

ETHICS IN UNDERGRADUATE MEDICAL CURRICULA

Before examining the nature of ethics education in undergraduate curricula, and in the new Glasgow curriculum in particular, it is first necessary to explore what is meant by the term "ethics" and why it is included in medical curricula.

The term "ethics" has various meanings and associations depending on the context in which it is used. Calman and Downie (1994) in their book, "Healthy Respect: Ethics in health care" distinguish three main "senses" of the term:

1. *It can be looked at as a branch of philosophy dealing with morals.*

In this sense it is a theoretical study of practical morality. McElhinney and Pellegrino (1982) describe ethics as "an academic discipline that reflects critically upon values and meaning of human experience, considers ways to mediate differences in values through moral argument, and examines the right and wrong of human acts in order to clarify the meaning of ethical terms, discover generalizable principles, and explore the logic of ethical discourse". Philosophical ethics in the Anglo-American tradition focused on this "meta-ethical" approach for most of the twentieth century. However, as Aristotle points out at the beginning

of his Nicomachean Ethics, the end of the enquiry is not "knowing" but "doing". The central focus of medical ethics is clinical reasoning and decision-making, an activity that takes place during the contact between health care professionals and patients, "where ethical discussion must end in decision and action" (Pelligrino 1988). The importance of context in medical ethics theory and research is being increasingly recognised (Hundert et al 1996). The rise of "Bioethics" during the past 20 years has returned philosophy to the practical world by making an effort to help practitioners grapple with problems that require concrete resolutions (Shelton 1999).

2. *It can be viewed as ordinary morality as it is found in a professional context.*

From their essay on morality in "Healthy Respect", Calman and Downie hypothesise:

- Morality is inescapable. It is part of life.
- It is all-pervasive, it is not just a matter of the big issues, but is associated with all our clinical decisions.
- It is indivisible; it cannot be divided into "professional" ethics and "private" morality.
- Moral decisions must be made in the real world, in

which changing clinical practice is constantly challenging our moral attitudes and assumptions.

- Morality can be learned and can be taught. As a corollary to this there is the assumption that moral values can change, and it is possible to look at the reasons behind the moral values we hold.

Seedhouse (1988) and Beauchamp and Childress (1994) also stress the continuity between moral problems encountered in everyday life and those encountered in the health care context. Ethical decision making and clinical decision making are interlinked and cannot be separated, and many decisions that physicians make involve value judgements. Doctors have to be aware of the all-pervasive nature of such value judgements and to the extent to which his/her own values affect these decisions (Seedhouse 1988, Calman and Downie 1994, Beauchamp and Childress 1994).

3. It can be viewed as codes of professional procedures.

The awareness of a moral dimension to health care dates back 2,500 years to the times of Hippocrates, whose oath is the earliest known comprehensive definition of an ethical foundation for medicine. Until the 1960s this awareness was expressed almost exclusively in codes of ethics. There existed a consensus within the medical profession as to

their values; there was no challenge to those from the general public and little, by way of economic constraint, from governments (Calman and Downie 1994). In view of this professional, public and political consensus it seemed adequate that the ethics of health care should be expressed in deontological form.

However in the 1960's significant social changes began which prompted review, by society and the medical profession, of the adequacy of these codes in helping solve the increasingly complex moral dilemmas arising in health care. These included, after Charon and Williams (1995):

- The downgrading of professional prestige, the questioning of professional autonomy, and the exposure of unethical research practices.
- The development of patients rights' movements, with the public becoming more consumer conscious, being better educated in health care, and better informed on legal rights. As a consequence, patients have increasingly demanded that health care should be delivered in terms of their own values, rather than those of the professions.
- The development of health care teams. The codes, which tend to be exclusive to one profession, do not stress the importance of these teams.

- The increasingly pluralistic nature of society meant that the principles implicit in many of the codes were inadequate.
- The rapid technological development in medical care, and its associated tendency to specialisation within medicine, has obscured doctors' accountability to holistic patient care. New technical capabilities, for example, genetic screening or foetal organ donation, have also posed unprecedented ethical questions. The financial demands made by these developments have placed an ever-increasing burden on available health care resources, at a time when these resources were becoming cash limited.

Whilst any profession must lay down rules or duties for its members, and the codes provide basic principles which apply across cultural and national boundaries, society and the medical profession became increasingly aware that there was a need for decision making which recognised social and economic, as well as individual and clinical factors (Ewan 1986). The codes were often unable to provide adequate guidance in making these decisions, and could not encompass the many aspects of health care which are not wholly reducible to rules, for example exhibiting a caring

attitude. Dependence on codes ignores the values that the individual professional brings with him/her to his/her professional life and the importance of the individual being aware of his/her own values, and being willing to change them in the light of changing knowledge. The importance of the codes has therefore shifted from the centre of professional life to the margins (Calman and Downie 1994, Seedhouse 1988, Beauchamp and Childress 1994).

Ethics education also has a 2,500-year history in terms of informal inclusion in medical curricula. Despite this, it has only been in the last 40 years that it has "come of age" in terms of formal inclusion in medical curricula (Miles et al 1989). This has been part of a broad curricular effort, originating in North America, to develop students' values, social perspectives and interpersonal skills for the practice of medicine. It came from the medical profession's, and society's, concerns about the personal attributes and humanistic sensitivity of doctors; the selection of medical students; the socialisation and cynicism engendered by medical education (Pelligrino 1974, Reynolds and Carson 1976, Warren 1984, Arnold et al 1987); and the overly scientific nature of pre-clinical medical education (Thomas 1978). As part of this drive, it was

recognised that medical ethics education should be accorded a greater formal presence in the medical curriculum (Muller 1984, Boyd 1987, General Medical Council 1993, Bickel 1993, UK Consensus Statement 1998). This required to be more than the transmission by "gentlemanly osmosis" of procedures and values between doctors and their students in the traditional apprenticeship model of medical education (Boyd 1989), which was the situation prior to 1970 in the United States (Veatch and Sollitto 1976) and in the United Kingdom prior to 1987 (Boyd 1987).

By 1990 medical ethics had become an integral part of the core curriculum in most American Medical Schools (Pelligrino et al 1990, Fox et al 1995). Following the recommendation by the GMC in "Tomorrow's Doctors" (1993) that it should be included in the core of United Kingdom medical curricula, most medical school's curricula now include ethics education (Fulford et al 1997).

Review of the literature on ethics education in terms of its aims, content and organisation, learning methods and assessment was the basis of the first paper in the series being presented. While there is consensus on content for undergraduate medical ethics education, there is still significant debate on learning and teaching methods. Despite the broad agreement on the need to apply adult education

principles to ethics teaching, there would appear to be some tension between balancing the need for experiential learning and achieving the "core curriculum". This reflects the tension between the bioethical and traditional meta-ethical approaches. There are also as yet unresolved difficulties with regards to resources for delivery, academic expertise, curriculum integration and consolidation of learning. Assessment methods also remain contentious. Although there is consensus that the ultimate goal of medical ethics, and indeed of medical education as a whole, is to create "good doctors", the influence of the "hidden curriculum" on students' development is only beginning to be recognised, and strategies to counteract its effects are in their infancy.

ETHICS IN THE NEW GLASGOW CURRICULUM

Learning in ethics and law is one of the main vertical curricular themes of the new curriculum (appendix 10).

Learning begins in first year as one of the domains of the Vocational Studies course and extends into the PBL core.

The material covered is broad; a routemap of ethics teaching in the curriculum is shown in appendix 13. It includes:

Year 1 - Issues and concepts in medical ethics.

Special reinforcement on autonomy as informed consent and confidentiality (legal and theoretical).

Core values of medicine.

Year 2 - Issues, concepts and theory of medical ethics.

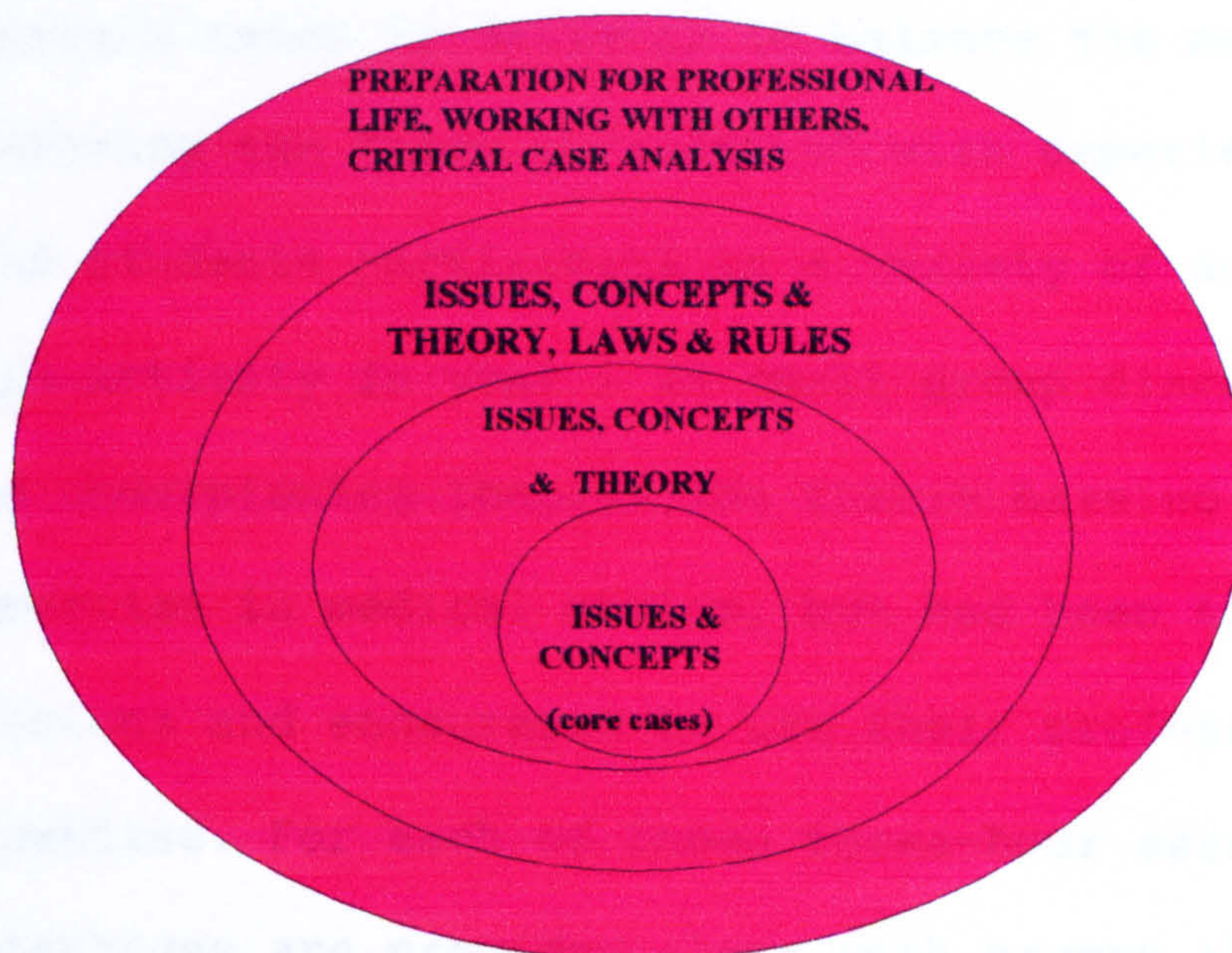
Year 3 - Issues, concepts and theory.

Legal issues, oaths, institutional rules and guidelines.

Years 4&5 Preparation for professional life, including working with others and critical case analysis.

A schema of ethics teaching in the curriculum is shown in figure 5.

FIGURE 5



The main aim of ethics teaching in the first three years of the curriculum, is to encourage students to become familiar with the general theories of ethics, law and professional behaviour, and be comfortable applying them to particular cases presented in Vocational Studies, the PBL and clinical cores and eventually in clinical practice. This includes ensuring they are aware of their legal, ethical and institutional obligations. To this end they are provided with exercises which permit them to experience that problem solving in medicine is not always solely a matter of scientific fact, but also involves the more theoretical and less determinate factors covered in the

Right Thing to Do component of Vocational Studies. The approach taken is designed to balance the need for achieving the "core curriculum" with experiential learning.

The students participate in a variety of activities. The main activity in year 1 is small group discussion of cases and underpinning theory. The tutors have no particular expertise in medical ethics, but had been trained for the sessions and encouraged to use their professional expertise. For each of these three-hour sessions, learning objectives are provided along with prompt sheets and background material developed by the course designer, with input from philosophers, lawyers, clinicians and other relevant professionals. The core issues form the heart of the ethics programme stimulating interest in an issue, and concretising it as a case study. Discussion of relevant concepts promotes generalisation of issues. For example, the issue of refusal of treatment is conceptually addressed in an exploration of autonomy. Accompanying this, students are given the opportunity to explore tools and develop methods of decision-making. These cover meta-ethical theories which encourage flexibility and sensitivity to other views, while promoting practical, deliberate decision-making that is either within the laws and standards relevant to medicine, or are carefully

considered, well-supported dissenting positions.

Using cases as a focus for learning is appropriate as ethical enquiry, even in its more abstract forms, derives from dilemmas occurring in everyday life. It encourages the recognition and toleration of uncertainty, which are pervasive features of clinical practice and one of the competencies of the "Appropriate decision making skills, and clinical reasoning and judgement" outcomes in the middle circle of the three circle model.

At the end of each small group ethics session, a Glossary exercise, aimed at generating consensus on the characterisation of the key term, or terms, in that session, is undertaken. Each student is asked to produce a personal dictionary of the terms encountered during the course of the year.

During year 1, the small-group sessions are complemented by one-hour plenary seminars during which students have the opportunity for interactive discussion with ethicists, legal experts and members of other relevant disciplines. These provide the opportunity to link concepts and issues in a coherent way. In years two and three, plenary seminars become the main teaching method used (appendix 13).

In the clinical core, formal ethics teaching consists of two, two-hour small-group workshops, along with 11 half-day

topic-teaching lecture and large group sessions (appendix 9). While one session is directly related to ethics and law, all the others have an ethical component.

The routemap fails to include teaching during the clinical attachments. The outcome-based approach to the clinical core is designed to facilitate the outcomes specified in the objectives for the clinical years (appendix 7). These include objectives relating to ethical knowledge, skills and attitudes and legal responsibilities. The portfolio cases, in particular are designed to promote learning in this area, with students being required to write up a number of cases where ethical considerations are particularly relevant. This encourages students to critically reflect on the conceptual bases for ethical decisions they are starting to make. The outcomes described may be exhibited in different ways for each specialty attachment, but each discipline should make a contribution to an integrated and cohesive clinical curriculum in which learning in ethics and law is an integral component. This process is dependent on teachers' general awareness of the educational outcomes for the curriculum and on them having a detailed understanding of the educational outcomes relating to their own contribution to the curriculum.

Ethics and law was originally assessed only in the written

components of the first and final summative assessments. However, this situation has changed in recent years and a range of assessment tools are now used in Glasgow, which cover the Scottish Deans Medical Curriculum Group's (2002) area the "Philosophy of medicine", appendix 14.

The curricular aims, content and design of teaching in medical ethics and law in the Glasgow curriculum are consistent with the approach outlined in the UK Consensus statement (1998) on the teaching of medical ethics and law in UK medical schools (appendix 15).

AIMS OF THE STUDY

EVALUATION PLANNING

Before defining the aims it is important to look at the context of its inception, which influenced the decisions taken by the evaluator.

While the importance of evaluation in curriculum development was recognised by the curriculum developers, evaluation was a secondary consideration in the curriculum planning process. It was made clear by the curriculum planning group that no additional funding would be available for evaluation and evaluation projects would have to be funded from existing departmental budgets. Student participation in evaluation was to be voluntary, and students were not to be targeted prior to their starting medical school. Within the department of General Practice, which was responsible for developing the Vocational Studies course, there was recognition of the need to evaluate ethics teaching. With no additional funding available, the evaluator was chosen from within the existing teaching staff. The support of the departmental lecturer in philosophy as applied to medicine, the ethics course developer, and one of the senior lecturers was offered. The opportunity to consult the departmental statistician was also provided, as was secretarial support. A specific

budget for the evaluation however, was not identified. The results were to be reported to the head of department, who had overall responsibility for Vocational Studies, and to the course developer. There were no plans, at this stage, to inform particular stakeholder groups. The results of the evaluation were to be used to inform future development, and be disseminated more widely through publication. The limitations imposed influenced the decisions made by the evaluator concerning his role in the evaluation, the questions to be asked, and the methodology.

Given the constraints imposed on the evaluation, it was decided to concentrate on aims which were feasible. The evaluation could not be a full evaluation of ethics teaching in the new curriculum or the Vocational Studies course.

Initially, it was decided to focus on year 1, where the largest proportion of curricular ethics sessions take place. Most of the published work on evaluation of undergraduate ethics curricula concentrated on outcome with little work being undertaken on the educational philosophy and curricular processes adopted (Self et al 1989). It was decided, therefore, to perform both outcome and process evaluation.

AIMS OF YEAR 1 PROCESS EVALUATION

During the process evaluation planning, a number of issues were identified. Small group teaching is one of the major innovations of the new curriculum and is the predominant method used for ethics teaching in year 1. The UK consensus group (1998) indicated a preference for small group teaching which echoed that of the Pond report (Boyd 1987). However, both recognised that insufficient resources may limit its implementation. While the consensus was that case based, small group discussion was the preferred format for ethics teaching, particularly in the early years (Boyd 1987, Miles et al 1989, Fox et al 1995, Consensus group 1998), there was little empirical evidence of its effectiveness or the causal processes mediating its effects.

Horizontal integration is an important feature of the new curriculum and of ethics learning in year 1. An investigation of its implementation was felt to be important.

Clinical tutors, and not ethicists, were to be the main facilitators of ethics learning in the first year of Glasgow's new curriculum. The evidence on the suitability of non-specialists for ethics teaching is conflicting (Self et al 1989), and this was also an area felt to be worthy of investigation.

The following aims for the process evaluation were therefore defined:

- 2) To judge the value of the curricular experiences provided for students in terms of:
 - a) Acceptability to both students and tutors.
 - b) Feasibility.
 - c) Relevance of material to aims of teaching.
- 2) To judge the effectiveness of clinical tutors as facilitators of learning.

The process evaluation of year 1 teaching formed the basis of the second paper in the series presented.

AIMS OF OUTCOME EVALUATION

In considering the aims for outcome evaluation the literature was again reviewed. Most of the studies had taken place in North American medical schools, with small student numbers, where the students were generally older, and already possessed a first degree in which there was often exposure to ethics instruction (Shorr et al 1994). As a large medical school, with approximately 240 students entering each year, the introduction of the new Glasgow Curriculum provided an opportunity to undertake a feasible outcome study in a United Kingdom medical school.

The literature provided conflicting evidence on the effectiveness of ethics teaching. Previous studies have shown improvement in students' performance following ethics teaching in the early years of the curriculum. Self et al (1989, 1993) found an increase in the moral reasoning skills of students from Texas following a first year course. They also demonstrated that exposure to small group case-study discussion was more likely to lead to improvement than lecture-based courses (Self et al 1989). Improvement in moral reasoning following teaching in the early years of the medical curriculum was also found among Danish students (Holm et al 1995). Hebert et al (1992) found an increase in ethical sensitivity among Canadian students following the first year of the curriculum. Shorr et al (1994) from the University of Virginia, using an instrument which incorporated case vignettes to measure students' factual knowledge and attitudes towards ethical dilemmas, found an improvement in students' factual knowledge, but little improvement in students' attitudes following a first year ethics course.

The remaining curricular years have been found to have an adverse effect on students' ethical development. Students' ethical sensitivity was found to decrease as they pass through medical curricula (Hebert et al 1992). Patenaude et

al (2003) found a levelling process in students' moral reasoning with time. Price et al (1998) found a substantial change in students' attitudes towards ethical issues between the early and later stages of the curriculum. In longitudinal studies following students through the entire curriculum, the improvement in students' moral reasoning abilities was found to be little more than would be expected at this age and level of education (Self et al 1993, 1998a). The hidden curriculum was felt to be a significant factor in the adverse effect on students' ethical development in the later years of medical curricula (Hafferty and Franks 1994, Shorr et al 1994, Self et al 1998a, Patenaude et al 2003).

Two main approaches had been taken to outcome evaluation, both using written instruments pre- and post-teaching:

- 1) Determining the effectiveness of ethics teaching by measuring the development of students' moral reasoning using instruments based on Kohlberg's (1976) cognitive moral development theory.
- 3) Measuring students' proposed behaviour on encountering ethical dilemmas using instruments which incorporate case vignettes which contextualise ethical dilemmas for medical students.

The ultimate aim of medical ethics education is to produce doctors who behave ethically (although Hafferty and Franks (1994) go further and suggest it should be to produce ethical doctors). Rest (1983) summarises the underlying dimensions of ethical behaviour in four components:

1. To be sensitive to the needs of others.
2. To engage in moral reasoning when a course of action is formulated.
3. To decide which values are most important in a situation containing a moral dilemma.
4. To execute and implement a course of action.

Compassion, empathy, respect for patients, and competent communication skills are also required to practice ethically. Written instruments are unable to measure these skills.

Instruments based on Kohlberg's theory do not request professional decisions nor do they explicitly measure ethical values. They also require the researcher to adopt Kohlberg's theory of moral development.

Kohlberg's is a cognitive-developmental theory of moralisation which portrays the developmental stages of moral reasoning as a hierarchy of structures which become progressively more differentiated as development occurs (Kohlberg 1976). While Kohlberg's theory and the measures

developed are highly regarded, a number of questions have been raised. The scale treats morality in an abstract way although abstractions are neither moral nor immoral per se (Tennant 1999). Instead, moral commitment exists when the abstract and the concrete are fused (Sullivan 1977).

Therefore, Kohlberg's assertion that the highest stage of moral development on his scale naturally leads to justice is not correct because justice is not a purely abstract concept. Moral judgment is based on values and beliefs acquired through experience in a particular sociocultural environment shaped by forces outside the cognitive domain. This means that moral judgments have as their reference point some culturally specific value (Peters 1971).

Kohlberg's model is firmly rooted in a specific cultural framework, one that has been described as having a Western liberal bias (Shweder 1982, Sigurdson 1997, Simpson 1974, Sullivan 1977). Furthermore, there is little evidence that the highest stage of moral development he proposes can predict behaviour (Kurtines & Grief 1974, Blasi 1980, Rest 1994), or that the two highest stages even exist (Snarey & Keljo 1991).

Another major problem is the strong possibility of a gender bias that favours males. This is because Kohlberg's experiments used only male subjects and then extrapolated

the findings to females. As noted by Gilligan (1982), women tended to be placed at lower stages of moral reasoning on Kohlberg's scale than their male counterparts. This led Gilligan to develop a countervailing model in which responsibility and the ethics of caring, not justice, were the normative base for moral reasoning.

The moral reasoning abilities of students undergoing several years of education develop irrespective of formal teaching (Rest et al, 1997). This factor was not considered in outcome studies using these instruments.

Measuring students' proposed behaviour on encountering ethical dilemmas has been the approach recently favoured. Instruments adopting this approach have the potential to measure ethical behaviour in three of the four components of Rest's model. They also do not depend on acceptance of Kohlberg's theory with its sequential, hierarchical approach to moral development and justice as the highest stage of moral development. With the potential male bias in Kohlberg's theory the adoption of instruments based on this theory was felt to be inappropriate in a situation where 66% of the intake of the new curriculum was female. It was, therefore, decided to choose an instrument which would measure students' potential behaviour on meeting ethical dilemmas.

Medical ethics was at the periphery of Glasgow's pre-1996 medical curriculum. The teaching consisted of two discrete courses. The first course was in the second year of the medical curriculum, entitled "Ethics in Medicine". This consisted of three lecture or seminar sessions and was part of the "Behavioural Science" course, which ran throughout the second year of the medical curriculum. The second component of ethics teaching was in the "Medical Jurisprudence" course, which ran in the second term of year four. This was a course of 18 lectures, 9 of which addressed ethics topics. With ethics teaching in the old curriculum not commencing until second year, and being mainly lecture and large group based, there was an opportunity to compare the different teaching methods.

It was postulated that the structure of the new Glasgow curriculum contained features which Hafferty and Franks (1994) and Shelton (1999) postulated could counteract the effects of the "hidden curriculum" and promote students' development as ethical doctors:

- The communication to students and staff of the aims, structure and content of the curriculum, along with the desired outcomes. This sets clear and visible standards for students aspiring to enter the profession of medicine
- The learner-centred ethos

- The problem-based approach, which provides a context that closely resembles students' future professional context and helps develop a useable body of integrated knowledge and problem-solving skills
 - The integration of teaching throughout a curriculum where ethics is a vertical curricular component. This is particularly relevant in clinical years where each discipline should contribute to an integrated and cohesive curriculum
 - The relationship between students and their tutors/educational supervisors, which goes beyond facilitation with the adoption of other roles in particular mentor and role model
 - The Advisor of Studies system, which was formalised and expanded to provide both learning and pastoral support
- Students exposed to the new curriculum may, therefore, be less affected by the "hidden curriculum" than those exposed to the previous traditional curriculum.

It was, therefore, decided to compare the effect of small group ethics teaching in the first year of the new integrated medical curriculum with a discrete lecture and large group based course in the second year of the old curriculum. This formed the basis of the third paper in the series being presented. These students could then be

followed through their respective curricula to study the longitudinal effect of the curricula on their potential behaviour on meeting ethical dilemmas.

The aims of the outcome evaluation were therefore to test the following hypotheses:

1. Small group ethics teaching, in the first year of an integrated medical curriculum, will have a positive impact on students' potential behaviour when facing ethical dilemmas.
2. The effect will be greater than that produced by a discrete lecture and large group teaching based course early in a traditional curriculum.
3. Students' performance will be adversely affected as they progress through the medical curriculum.
4. The effect will be less pronounced in students undertaking the modern curriculum compared to those undertaking the traditional curriculum.

METHODS

PROCESS EVALUATION

To fulfil the aims of the process evaluation, a descriptive methodology was chosen. Descriptive research involves "the collection of data for the purposes of describing existing conditions" (Sax 1979). Typical research involves demographic information, attitude assessment and opinion collection. Data are usually gathered via questionnaires, interviews, surveys or observation.

A multi-method approach was adopted. There are many advantages in using a multi-method approach in social research. In social research, unlike the situation in the medical or physical sciences, single observation provides only a limited view of the complexity of human behaviour, and of situations in which human beings interact. As Smith (1975) observed, where research methods act as filters through which the environment is selectively experienced they are never atheoretical or neutral in representing the world of experience. Exclusive reliance on one method, therefore, could bias or distort the researcher's picture of the particular slice of reality he/she is researching. He/she requires to be confident that the data obtained are not simply artefacts of one specific method of collection

(Lin 1976). This confidence can only be achieved, as far as normative research is concerned, when different methods of data collection yield substantially the same results (Cohen et al 2000). Furthermore, the greater the methods contrast with each other, the greater the researcher's confidence in the validity of the results. As Lin (1976) points out, if the findings are artefacts of method, then the use of contrasting methods considerably reduces the chances that any consistent findings are attributable to similarities of method.

Another major advantage of using a multi-method approach is that it overcomes, what Cohen et al (2000) term, "the problem of method-boundedness". Many writers have been critical of the limited use to which existing methods of enquiry in the social sciences have been put. As Smith (1975) pointed out "techniques are often chosen out of methodological parochialism or ethnocentricity.

Methodologists often push particular pet theories either because they are the only ones they are familiar with, or because they believe their method is superior to all others."

SUBJECTS

The process evaluation involved all 238 students in the first year of the new medical curriculum, and the 30 clinical tutors facilitating ethics learning as part of the Vocational Studies' course.

INSTRUMENTS

An eclectic approach to methodology has been advocated for evaluation (Cronbach 1982, Rossi 1985, Popham 1988). Within the limitations imposed on this study Rossi's "good enough" rule (1985) was invoked and the optimal methods available were chosen.

The following instruments were used:

1. OPEN QUESTIONNAIRES

A brief open questionnaire (appendix 16) administered to all students and tutors after each of the small group ethics sessions in the Vocational Studies course. They were also administered to the students after each plenary session. The open questionnaire format had previously been successfully used for evaluation in Glasgow's medical school. Its design allowed issues to emerge which may not have emerged if the items covered in the questionnaire had been fixed prior to data collection. This could have been

the case if a structured and, to a lesser extent, semi-structured questionnaire design had been used. This open-ended approach was felt to be important as ethics teaching in the first year of the new curriculum was part of an innovative, but as yet untried, course. While it would provide data on the ethics teaching sessions, from the perspectives of both students and tutors, its use alone would be insufficient to achieve the aims of the study.

2. TUTOR RATING SCALE

The tutor rating scale (appendix 17) was adapted from Dolman et al's (1994) for tutor evaluation in a problem-based curriculum. It was chosen because it was similar to the one used by students to evaluate their PBL facilitators. This rating applied to the tutor's performance during all Vocational Studies sessions, not just ethics sessions. Its use was, therefore, mainly for triangulation purposes in considering the effectiveness of clinical tutors as facilitators of ethics learning.

3. FOCUS GROUPS

Focus group sessions were held at the end of first year, with groups of students and tutors.

What are focus groups?

Morgan (1997) defines focus groups as "a research technique that collects data through group interaction on a topic determined by the researcher." In essence, it is the researcher's interest that provides the focus, whereas the data is provided from group interaction.

Focus groups have been used in social science research since its early years; Bogardus's (1926) description of group interviews is among the earliest published work. However, until the 1980s, they were only used infrequently, although they were the dominant form of qualitative data collection in marketing research (Goldman and MacDonald 1987). By 1996, research using focus groups was appearing in academic journals at the rate of more than 100 articles per year (Morgan 1996).

Why use focus groups?

As a qualitative research tool, focus groups lie between the two ends of the spectrum of interactive methods, with participant observation at one end and open-ended interviews at the other. By comparing focus groups with both participant observation and individual interviews, the strengths and weaknesses of focus groups can be elicited.

Participant observation is able to collect data on a wide

range of behaviours and interactions of the study participants. It allows open discussion of the topic(s) under investigation. It is particularly appropriate in settings where there is something immediately available to observe. Its structure makes it well suited to studying topics such as social roles and formal organisations. Focus groups, on the other hand, are limited to verbal behaviour, consist only of interaction in discussion groups, and are created and managed by the researcher. While the researchers' interests ensures that data obtained will be directly targeted to the task at hand, it is difficult, when using focus groups, to be sure of how natural the interactions are, due to the effect of the researchers' control. If the aim of the research is to collect data on other social actions, rather than just discussion of these activities, then the increased naturalism of participant observation is necessary. Focus groups, however, can give access to reports on a wide range of topics that may not be observable. More social psychological topics, such as attitudes and decision making, which are less well suited to observation, are areas which could be better served by the use of focus groups. With both techniques overlapping in their use of group interaction, there are many topics where a study design may use either, and a trade off

between the naturalness of observations in a field setting, and the ability to collect a concentrated set of interactions in a short space of time via focus groups. There are many topics in which the effort required by participant observation would be excessive, or in which the need for rapid data gathering would supersede the requirement for the depth and detail of participant observation.

In comparison to individual interviews, focus groups allow observation of participants' interaction on a topic, and provide direct evidence about the similarities and differences in the participants' opinions and experiences, which would not be obtained until analysis of separate statements from each interviewee had taken place. However, individual interviews have advantages over focus groups in terms of the amount of control the interviewer has. Agar and MacDonald (1995) argue that the dynamics of individual interviews place a greater burden on the informants to explain themselves to the interviewer so that the elaboration of initial statements often occurs with relatively little input from the interviewer. The focus group process, on the other hand, makes it easier to conduct less structured interviews, which can be an advantage in an exploratory research situation where the

researcher may not initially know the question(s) to ask.

Individual interviews also have an advantage over focus groups in terms also of the depth of understanding of the interviewees' opinions and experiences. A 90 minute focus group discussion among 8-10 participants will generate only 1/10 of the information that each participant would provide in an equivalently long interview (Morgan 1997). However, focus groups may have advantages when considering topics that are habit-ridden or not thought out in detail. The interaction of group members can stimulate a range of different thoughts about topics, leading to productive discussion about the groups' agreements and disagreements on the topics (Morgan 1997).

A crucial question arising, when comparing individual interviews and focus groups, is whether they produce similar data. While this has been the subject of much speculation (Agar and MacDonald 1995), little empirical evidence exists. The possibility that individual and group interviews will produce different results raises issues of validity; if the two methods are used to obtain data on a particular topic, and they produce different results, does it automatically follow that one of the sets of results must be wrong? This view does not necessarily follow.

Wight's (1994) study, of how adolescent males talked about

the opposite sex, applied both individual interviews and focus groups to obtain information about the topic. He found that adolescent males express different thoughts about the opposite sex in private than among a group of their peers. Kitzinger (1994a, 1994b), reviewing Wight's work, and data of her own, concludes that such comparisons of individual and group interviews may be as much about context as validity. Morgan (1997) suggests one answer to this dilemma is to note that an interest in individual behaviour might not be well served by data from group interviews. Similarly, a research interest in group behaviour might not be well served by data from individual interviews, and that this is a factor which should be taken into consideration when choosing the research design.

Both the advantages and disadvantages of focus groups arise from their two defining features; the reliance on the researcher's focus and the groups' interaction (Morgan 1997). What may seem to be a strength of focus groups may also be a potential weakness. For example, while they are able to produce concentrated data on the area in which the researcher is interested, Fern (1982) has shown that two eight-person focus groups can produce as many ideas as 10 individual interviews, the fact that they are driven by the researchers' interests can also be a source of weakness.

This can arise where the moderator, in attempting to maintain the focus, adversely influences the groups' interactions. Similarly, while focus groups rely on group interaction to produce the data, the group may influence the nature of the data provided. While the comparisons that participants make among each other's experiences and opinions are a valuable source of insights into complex behaviours and motivations (Morgan and Krueger 1993), focus groups include both a tendency toward both conformity and "polarization" which can limit the usefulness of the data obtained (Susman et al 1991). The groups' influence on the discussion also raises questions about the ability of any particular set of participants to discuss a particular topic. For example, if the topic(s) is/are in an area where the participants' involvement is too high or too low, the data obtained will require close scrutiny. Where involvement is low, little useful data may result. Where involvement is high, the moderator may have to work hard to control the discussion which in turn could adversely influence its outcome. A further potential problem arises if the topic(s) is/are too controversial, or if there is a real potential for disagreement among participants.

In summary, the strengths of focus groups lie in their ability to produce data from groups of participants

discussing topics of interest to the researcher. These differ from those of participant observation or individual interviews. With the researcher defining the discussion topics, focus groups are more controlled than participant observation, and with the participant-defined nature of group interaction, the focus group setting is less controlled than individual interviewing. Focus groups offer something of a compromise between the strengths of participant observation and individual interviewing. While they are not as strong as either of these methods in their specialised domains, the flexibility of focus groups allows them to operate across traditional boundaries, which is perhaps the greatest strength of focus groups (Morgan 1997).

When to uses focus groups

Morgan (1996) identified three basic uses for focus groups:

1. As a self-contained method in studies in which they are the principal source of data. They serve as the primary means of collecting qualitative data. Using focus groups in these circumstances requires careful matching of the goals of research with the data that the focus groups can produce to meet these goals.

2. As a supplementary source of data in studies which rely on some other primary method, for example:

- Linking with individual interviews
- Linking with participant observation
- Linking with surveys
- Linking with experiments

In supplementary uses of focus groups, the group discussions often serve as a source of preliminary data in a primarily quantitative study, for example they can be used to generate survey questionnaires or to develop the content of applied programmes and interventions. They can also serve as a source of follow-up data to assist the primary method, for example they might be used to investigate poorly understood survey results or to evaluate the outcome of a programme or intervention. In these supplementary uses of focus groups, the groups must be set up and conducted in ways that maximise their value for the primary method.

3. In studies combining two or more means of gathering data in which no one primary method determines the use of the others. In this use, focus groups typically add to the data that are gathered through other methods. In these combined uses, the goal is to use each method so that it contributes something unique to the researcher's understanding of the

phenomenon under study. The relative place of focus groups within this mix of methods would depend on a number of factors, for example the researcher's data needs, the opportunities and limitations of the field settings etc.

In considering an appropriate methodology to meet the aims of the process evaluation, the use of an interactive, qualitative instrument was felt necessary to augment the data obtained by the questionnaires, and allow the researcher to obtain data which would not have been possible to obtain otherwise, for example students' and tutors' opinions on the value of the curricular experiences, the reasons for tutors' effectiveness or ineffectiveness etc. As a qualitative instrument it would also provide a contrast to the more quantitative nature of the questionnaires, helping reduce the chances that any consistent findings were attributable to similarities of method.

Individual student and tutor interviews were ruled out due to the time scale of the study. As the process of ethics education during the first year of the curriculum was being evaluated, to prevent contamination from second year experiences interviews would have had to take place either in the relatively short period of time between the first MB exam and the summer recess, or during the summer recess,

both of which were impractical. The expense of producing and analysing data from individual interviews would also have been prohibitively expensive, given the financial restrictions.

An observational approach was also felt to be impractical. There are two main types of observational research: participant observation, which is an interactive qualitative tool; and non-participant observation, which is non-interactive (Le Compte and Goetz 1982). In participant observation, the observation may be either overt or covert. The researcher, given his dual role as a group facilitator and researcher, would have been in an ideal position to observe group behaviour. While covert observation may be more conducive than overt observation to producing valid findings, the researcher would have found it difficult ethically to be a covert observer as it could have adversely affected his relationship with the group members if/when they found out about his activities. Similarly, the relationship may have been affected if he had been open about his activities from the start. Observer bias is a further potential problem, given the potential conflict in the two roles. With horizontal integration being an important educational strategy in the curriculum, while it would have been possible to observe the other Vocational

Studies' sessions, participant observation during the PBL group sessions, where the students are in different groups facilitated by separate tutors, would not have been feasible unless other tutors were involved. In addition, a method of standardising observations, to ensure the validity and reliability of the findings, would have been required. Another major problem which would have arisen would have been the difficulty generalising the results. The researchers' Vocational Studies group was only one of thirty. To obtain sufficient data to allow generalisation, other tutors would have been required as researchers. Employing a number of researchers would have proved prohibitively expensive, as would the task of analysing the wealth of data generated.

Compared to these other interactive qualitative methods, focus groups permitted a relatively inexpensive collection of a concentrated set of relevant data in a short space of time, which was important in the context of the limitations imposed.

Many of these criticisms would have equally applied to non-participant observation. Moreover, the potential negative effect of having an observer external to the group under study would have to be considered. Alternative non-participant approaches include simulated observation and a

case study approach. With simulated observation, the artificial setting is unlikely to yield as useful data as the classroom setting (Bailey 1978). A case study approach would also have proved difficult due to the problems associated with course integration. It would have been expensive to undertake, and could be open to observer bias (Holt 1981). The difficulty generalising the results would be as pertinent with non-participant as participant observational methods. To have overcome these problems again would have been outwith the scope of the funding available, as would the task of analysing the wealth of data generated.

DESIGN

OPEN QUESTIONNAIRES

Following each of the Vocational Studies' ethics sessions, the completed open questionnaires were collected and collated. Students' and tutors' responses were separated, and the student questionnaires relating to small group sessions were distinguished from those relating to the plenary sessions, as these curricular experiences required separate consideration. The first step in the analysis of the questionnaire responses involved coding the comments obtained for each session, and arranging them according to

which of the open questions they related to.

The term coding encompasses a variety of approaches to, and ways of, organising qualitative data. The analytical procedures underpinning coding procedures establish links of various sorts. Coding initially links different segments or examples in the data. These fragments of data are then brought together to create categories of data defined as having some common property or element relating to a particular topic or theme. Coding, therefore, links all the data fragments to a particular idea or concept. Such concepts are in turn related to one another. The important analytic work, however, lies in establishing and thinking about such linkages, not in the processes of coding themselves (Coffey and Atkinson 1996). As Miles and Huberman (1994) argue, coding is a process that enables the researcher to identify meaningful data in preparation for their interpretation and the drawing of conclusions.

In deciding how to code, ideas can be generated from a variety of sources that are not necessarily mutually exclusive. For example, one can start with a simple framework based on the researcher's interests. Reading through data might allow the discovery of particular events, key words, processes, or characters that capture its essence. Alternatively, a code list may be created

prior to reading the data. These may come from a variety of sources, for example, from theoretical or conceptual frameworks; from hypotheses, which could be used to select code words to identify segments of the data in order to test or modify those ideas; from previous studies, or literature searches; or by starting from the research question that inspired the research project in the first place. In this study, the analysis of the questionnaires was to be based on the issues and concerns experienced by the students and tutors, after Guba and Lincoln (1981). The codes were, therefore, established from the content of the data. The data were also open to a more quantitative-like analysis, using a form of content analysis.

The next stage of analysis involved identifying the themes running through the coded questionnaire responses. Again it was possible to give them a numerical value according to the frequency of their occurrence. The responses to each of the categories; student or tutor returns, and those relating to small group or plenary sessions; were considered as a whole. This was because the identification of the themes running through sessions were more relevant to the study's aims than analysis of individual sessions. Feedback on individual sessions would still be available to the course organiser.

Data analysis then proceeded along the topological lines suggested by Becher and Kogan (1980), its basis being the issues and concerns experienced by the students and tutors (Guba and Lincoln 1981). To establish the validity and reliability of the findings, draft reports were to be circulated to all students and tutors at the end of each term for comment and criticism.

TUTOR RATING SCALE

The structured tutor evaluation form (Appendix 16) was administered at the end of term one and then again at the end of term three. The responses were analysed quantitatively for each of the questionnaire items to obtain an overview of tutor performance. In order to look at the performance of individual tutors, a numerical score was calculated as follows:

For each item completed by each student returning a form, a score was allocated to each of the responses as follows;

insufficiently = 0

neutral = 1

sufficiently = 2

The total score for each tutor was divided by the number of students returning forms to give an average score per tutor. This gave each tutor a possible maximum score of 14

and a minimum of 0. The tutor scores at the end of term three could be compared with those after term one to monitor tutors performance as they gained experience. The free comments given by the students at the end of the questionnaire were classified according to whether they were positive or negative. This was used to help confirm the quantitative findings.

FOCUS GROUPS

In planning focus groups a number of "rules of thumb" have emerged over the years (Morgan 1992). According to these, focus groups:

1. Use homogeneous strangers as participants.
2. Have 6-10 participants per group.
3. Have a total of 3-5 groups per project.
4. Rely on structured interviews with high moderator involvement.

These "rules" were used as a starting point for planning. However, it is relatively rare for a project to match all four of these criteria (Morgan 1997).

In this study the population involved, first year medical students and clinical tutors, were heterogeneous by their nature, and group participants were also unlikely to be strangers. The decision was taken to control the group

composition to match these two categories of participants. Segmenting samples is closely tied to the emphasis on homogeneity in the composition of focus groups. It is this homogeneity among the segmented groups that allows for more free-flowing conversations among participants. It also allows examination of differences in perspectives between groups (Morgan 1997). Segmentation in this context was felt justified due to the high probability that discussion, in mixed groups of students and tutors, would be uncomfortable at best, and conflict-ridden at worst (Morgan and Kruger 1993). The notion that focus groups must consist of strangers is, according to Morgan and Kruger (1993), a myth which has arisen. Focus groups are routinely conducted in organisations and other naturally occurring groups in which acquaintanceship is unavoidable, and working with prior acquaintances can help the researcher deal with issues of self-disclosure (Jarret 1993).

The reason for running more than one focus group is to reduce the risk that a substantive content of the discussion may have been due to one group's unique composition or dynamics. The number of groups that require to be run will be determined by the point at which "saturation" (Glaser and Strauss 1967) is reached, i.e. the point at which additional data collection no longer

generates new understanding. Running more groups seldom produce more insight. Projects which compare several distinct population segments, and projects using less standardised interviews, with lower levels of moderator involvement, require more groups on the whole than projects involving homogeneous groups with structured interviews and high moderator involvement.

Three groups of eight students were selected, 10% of the total student population, and two groups of six tutors, 40% of the total tutor population. The focus group participants were chosen using a stratified sampling technique to obtain the most representative sample possible. The student focus group participants were randomly selected to be invited to participate in the proportion of males to females in the class ($r=1:2$). The tutor focus group participants were stratified by gender and whether they worked in a hospital or community setting. With the relatively small student and tutor population, generalisation of the focus group findings was entirely feasible.

A standardised interview format was chosen for the focus groups following the pre-existing agenda for the research. Adopting this structured approach required a trade-off between covering the topics that interested the researcher, and what actually mattered to the participants themselves.

In choosing the themes, the purposes of the evaluation and the issues and concerns identified by the open questionnaires, were also taken into consideration.

Moderator intervention, however, was kept to a minimum. The moderator for both tutor groups was the researcher (JG).

Each student group required a separate moderator due to the time constraint in running the groups between the first MB exam and the end of term. The other two moderators (LS, JM) were briefed prior to the running of the groups to attempt to maximise uniformity of approach. Merton et al's (1990) criteria for effective focus group interviews were adhered to. They should:

- a) Cover a maximum range of relevant topics.
- b) Provide data that are as specific as possible.
- c) Foster interaction that explores the participants' feelings in some depth.
- d) Take into account the personal context that participants use in generating their responses to the topic.

The themes chosen for the interviews were:

1. Overall impressions of ethics teaching.
2. Acceptability/feasibility of the curricular experiences provided.
3. Relevance of the curricular experiences provided to the aims of the teaching.

4. The acceptability and effectiveness of clinical tutors as facilitators of medical ethics learning.

5. Other topics that may have been included.

The sessions were audiotaped and then transcribed. The transcriptions were analysed using a "grid" analysis after Knodel (1993). What each group said, in response to each question, was systematically summarised. The responses were then coded and a "group to group validation" applied (Morgan 1997). With this method the emphasis a topic should receive is determined by a combination of three factors:

1. How many groups mention the topic.
2. How many people within each group mention the topic.
3. How much energy and enthusiasm the topic generated among the participants.

Submitting a draft report to all the participants for their comment and criticism helped establish the validity of the focus groups' findings.

Having obtained and analysed the data from each instrument the findings underwent methodological triangulation (Denzin 1970), to ascertain the degree of convergence.

Methodological triangulation, in this context, refers to the process of using different methods on the same object of study. This involves the notion of convergence between independent measures of the same objective as has been

defined by Campbell and Fiske (1959). However, this method is open to criticism. Silverman (1985) suggests that its very notion is positivistic, and that this is exposed most clearly in data triangulation as it is assumed that a multiple data source, with its demonstration of concurrent validity, is superior to a single data source or instrument. The assumption that a single unit can always be measured more than once violates the interactionist principles of emergence, fluidity, uniqueness and specificity (Denzin, 1997: 320) Paton (1980) also suggests that even having multiple data sources, particularly of qualitative data, does not ensure consistency or replication. Fielding and Fielding (1986) hold that methodological triangulation does not necessarily increase validity, reduce bias or bring objectivity to research.

While triangulation was used to help establish the validity of the data, care was taken not to exclude data produced solely from individual methods. Provided the reliability and validity of the method had been established, data obtained solely by the method was interpreted and conclusions drawn. This was important as some of the methods used, for example focus groups, produced data which could not have been obtained by the other methods used.

OUTCOME EVALUATION

To test the hypotheses relating to teaching early in the curriculum ideally a pre-test-post-test, randomised control group design would have been chosen. However, this design, like most empirical studies in educational settings, was impractical (Cohen et al 2000). In a single school some of the students would need to be exposed to no teaching or a different teaching method in a curriculum where ethics teaching was horizontally integrated. Overcoming this would have involved using students from a number of medical schools providing case-based, small group teaching and controls from schools offering different teaching methods or no formal ethics teaching, which was outwith the scope of the evaluation.

In looking for an alternative strategy, a single group pre-test-post-test design would have been the most straightforward to organise. However, it would have left the study open to the criticism, should an effect be shown, that variables other than the curricular experiences designed to facilitate students' ethical development. For example factors to do with the students, the educational climate created by the introduction of a new curriculum etc. might have exerted some influence upon observed differences in students' potential ethical behaviour.

A quasi-experimental design, in the form of a pretest-post-test non-equivalent groups design, one of the most commonly used in educational research (Cohen et al 2000), was therefore selected. Kerlinger (1970) refers to quasi-experimental situations as "compromise designs", which is fitting in the context of this study (and in much of educational and evaluation research), where randomization was impractical. Using this method allows something approaching a true experimental design to be employed. The researcher has control over what Campbell and Stanley (1963) refer to as "the who and the whom" of measurement, but lack control over "the when and to whom of exposure", i.e. the randomization of exposures. It is an improvement on the one group, pre-test-post-test design as the degree to which the experimental and control groups can be made as equivalent as possible, avoids the equivocality of interpretations inherent in the pre-experimental design (Cohen et al 2000).

Adoption of the quasi-experimental design, which compared students from different curricula in the same medical school receiving concurrent ethics teaching, allowed testing of the first two hypotheses. These students could then form cohorts which could be followed longitudinally to examine the effect of the different curricula on their

potential ethical behaviour.

DESIGN

For the initial outcome study the design used is represented diagrammatically in Figure 6 (after Campbell and Stanley 1963, Cohen et al 2000):

Figure 6

EXPERIMENTAL

O1

X1

O2

O3

X2

O4

CONTROL

Where

- X - represents the exposure of a group to an experimental variable, the effects of which are to be measured.
- X1 - represents small group teaching in an integrated medical curriculum.
- X2 - represents a discrete lecture based course in a traditional medical curriculum.
- O - refers to the process of measurement of students' potential ethical behaviour.
- Xs and Os in a given row are applied to the same persons.
- Left to right order indicates a temporal sequence.
- Xs and Os vertical to one another are simultaneous.

The dashed line separating the parallel rows in the diagram of the non-equivalent control group indicates that the experimental and control groups have not been equated by randomization.

INSTRUMENT

A common feature of the instruments developed to measure students' potential behaviour on meeting ethical dilemmas is that they provide a choice of options from which subjects select an action to take (Hebert et al 1992, Rezler et al 1992, Shorr et al 1994, Feudtner and Christakis 1994). This reveals little about the subject's thinking on the issues involved, or even if they recognise the issues. Also, few of the instruments measure subjects' recognition of the values involved (McAlpine et al, 1997). The instrument chosen for outcome evaluation was the Ethics in Health Care Survey Instrument (EHCI) (Appendix 18), adapted for the UK setting. This was developed and tested by Kipnis and Gerhard at the University of Hawaii, John A. Burns School of Medicine. The EHCI has the potential to overcome the limitations discussed above as it has the potential to measure performance on levels 1 to 3 of Rest's model.

The EHCI consists of 12 case vignettes, each of which includes an ethical dimension. Nine of the 12 cases feature consensus problems, which were derived using three standards:

1. A significant amount of eminent literature on the topic, which had reached consensus over time, existed.

2. There was at least one consensus statement by a professional organisation.
3. The substance of the particular consensus was ethically consistent with other consensus topics.

All three standards require to be achieved for the topic to be included. The EHCI covers the main issues recommended by the UK Consensus Group for the core undergraduate curriculum in ethics and law (UK Consensus Group 1998).

The use of consensus cases are important as doctors are often faced with ethical dilemmas in which there is broad agreement in the literature, coupled with statements by professional organisations, and must be aware of where consensus exists. The other cases feature "knife-edge problems", about which professional judgements are scarce or divided. The inclusion of the "knife-edge" vignettes in the instrument is important as they demonstrate that not all ethical problems have a course of action that is favoured according to official professional standards and the medical ethics' literature.

Subjects are asked to choose one of the pre-set answers to each case vignette. They are also asked to justify their decisions. To determine the effectiveness of the teaching, only the answers given to the consensus questions are considered in the analysis. The purpose is to measure

whether, and to what extent, the judgement of medical students was moving towards the consensus judgement of informed professionals.

SUBJECTS

The EHCI was distributed to all students entering the new curriculum and 165 completed it. In order to create a control group, students from the last year of the old curriculum, who were about to enter their second year, were targeted. Due to time limitations, a convenience sample of 82 second-year students from the old curriculum (1/3 of the class), who had been brought together for teaching, was used as the control group. The EHCI was then distributed at the end of the year, to both groups. 111 (69%) pre- and post-year 1 EHCIs were completed by the cohort of students from the new curriculum. 51 (62%) were completed by students in the control group. The "equivalence" of these groups was checked using University records. It was established that the respondents in the experimental and control group samples were of similar age (mean age of experimental group - 18 years 10 months; controls - 19 years 6 months), and sex distribution (Male to Female ratio 1:2 experimental group, 1:1.8 controls). They contained similar proportions of overseas students (9% of

experimental group, 6% of controls), and of students having a previous degree (5% of experimental group, 2% of controls). Both groups were also representative of their whole classes in terms of these characteristics.

To follow the cohorts of students through the curriculum the EHCI was distributed to the new curriculum cohort post-year 3, following completion of the Vocational Studies course. It was also distributed to the cohort from the old curriculum who were finishing year 4 where the second ethics teaching course takes place. However, due to a poor response rate from this cohort further comparison was not possible. The resulting data were analysed and form the basis of the fourth paper being presented.

The EHCI was completed pre- and post-year 1 and post-year 3 by 85 (77%) of the new curriculum cohort. 101 students left the curriculum after year 3 to undertake an intercalated BSc, of whom 70 had previously completed an EHCI. The remaining students entered the predominantly clinical years of the curriculum. In April 2001, the EHCI was distributed to the students who were in the process of completing the medical curriculum, and to the intercalated students who had returned to the curriculum and were in the process of completing year 4. All students completing the EHCI on at least one occasion during the curriculum were

included in the data analysis. The number of students from each subgroup completing an EHCI at each time point is shown in table 1.

Table 1

	Pre-year 1	Post-year 1	Post-year 3	Post-year 4	Post-year 5
Straight to clinical	103	77	51	0	69
Intercalating	62	50	34	57	0

The collection of these data enabled the effects of the entire curriculum on the cohort to be examined, which formed the basis of the fifth paper in the series presented.

ANALYSIS

The data were analysed using SPlus v4.5 for Windows. The number of consensus answers, given pre- and post-test by the experimental and control groups, were compared by applying the Wilcoxon rank-sum test. In addition, the responses to each of the 9 consensus questions were analysed simultaneously by logistic regression analysis.

In an attempt to find areas where there was movement post-test towards or away from consensus, McNemar's test was

applied for each question. The responses to each question were also analysed by logistic regression analysis.

Post-year 3, simple comparisons of the answers given by the cohort to each consensus question, between pairs of time points, were made using McNemar's test. The effect of time on the responses of each student to all 9 questions were estimated using logistic regression analysis, adjusting for the degree of difficulty of the question, and for the correlation between different time points in the responses of each student to each question. The terms included in the model were an intercept, eight dummy variables to account for differences between questions, and two dummy variables to estimate the changing probability of giving the consensus answer at the three time points. To allow for the likely correlation between the responses by each student to each question, a generalised estimating equations approach was used (Zeger and Liang 1986), with each student-question combination representing a homogeneous unit, within which responses were assumed to be correlated. In other words, the response of a student to a particular question at any time point would be correlated with the response he/she gave to the same question at the other time points.

For the final data analysis, all responses to questions for which there was a professional consensus answer were coded as consensus or not. The number and percentage of consensus answers to each question, on each occasion, were calculated. To investigate trends over time in the probability of giving consensus answers, logistic regression models were used. Question and time point were included as categorical predictor variables, and the likely correlation between a student's responses over time was accounted for by the generalized estimating equations approach (Zeger and Liang 1986).

For each question, interaction terms were added to the model to test whether the time trends in responses to the question were the same as the time trends for responses to the other questions. Where the Wald statistic for the interaction terms showed some evidence of a different trend for a particular question, the coefficients for the individual interaction terms were assessed to determine in what way that particular question differed from the others.

**THE DEVELOPMENT AND TESTING OF A METHOD TO ANALYSE WRITTEN
JUSTIFICATIONS OF THE CHOICE OF PRE-SET ANSWERS TO THE
VIGNETTES OF THE EHCI**

As discussed previously, the EHCI has the potential to overcome the problems associated with previous instruments measuring possible ethical behaviour. Unfortunately, a method for analysing subjects' justifications for their choice of set answers to the EHCI was not developed by Kipnis and Gerhard. In order to realise the full potential of the instrument, a method of analysing these data required to be developed and tested. This forms the basis of the sixth paper in the series.

At this point the purpose of the evaluation was used to guide the approach taken. The performance of the cohort of students, in terms of change in their potential behaviour on meeting ethical dilemmas, was to be used to help establish the longitudinal effectiveness of teaching. As such the performance of the group was more important than that of individual students.

Given the lack of validated tools to assess students' ethical performance (Miles et al 1989, Fox et al 1995) it was felt the EHCI had the potential to be a useful addition to the assessment instruments available. To establish its usefulness its psychometric properties required to be

investigated.

Asking subjects to provide written justifications for their choice of set answers to the case vignettes of the EHCI produces a large volume of qualitative data. To analyse such data the first step is data reduction (Miles and Huberman 1994). While a number of approaches were considered, the approach taken was to classify subject's responses using categories derived from the reflections of the Glasgow researchers and one of the original developers of the instrument (Ken Kipnis), grounded in responses given by students in both Hawaii and Glasgow. Subjects' justifications were initially classified as being either a "professional consensus" or an "other" response. The "other" response category is subclassified as shown in appendix 19.

The classification process is used to help determine subjects' thinking on issues. Subjects' written justification categories are compared with the subject's choice of pre-set answer to determine whether his/her thinking is consistent with professional consensus. Furthermore, the change in the number of "professional consensus" written responses given to consensus vignettes pre- and post-instruction is used as a measure of the movement of subjects' judgement towards consensus.

Previous work with the EHCI found that students rarely start their learning from a position of having little or no knowledge of ethical matters. If we only concentrated on measuring the movement towards consensus in subjects' responses post-instruction, additional valuable evidence of change in the level of sophistication of subjects' "professional consensus" written responses following instruction would be lost. In addition, the potential of the instrument to measure subjects' recognition of the values involved would not be realised.

To achieve these aims the initial approach was to adapt Bloom's taxonomy (1956). Only the cognitive and affective domains were considered, as written instruments are unsuitable for the assessment of many of the skills required for ethical practice. During the workshop run for markers prior to their undertaking the reliability testing exercise, and from reflection on the feedback obtained, it became apparent that this approach was over complicated. Bloom's taxonomy can also be criticised for implying a stepped development from comprehension to evaluation when an alternative view is that comprehension must involve evaluation. Indeed, in order to choose a pre-set answer to a vignette it can be argued subjects must undertake a degree of evaluation. Instead the approach taken was to

further classify "professional consensus" responses on hierarchies of subjects' action justifications and values recognition (appendices 20 and 21). The categories in the hierarchies are grounded in responses given by Glasgow students and are influenced by the consensus aim of medical ethics education:

"To produce doctors who should be able to competently analyse clinical situations, identifying any inherent moral issue(s) using knowledge of the range of moral concepts used frequently in ethical theory, while being sensitive to variations in circumstances that change meaning in ethically sensitive ways. They would be aware of their own values and beliefs, and those of each individual decision maker in the process of ethical decision making, and those of society in general" (Lowey 1986, Miles et al 1989, GMC 1993, Calman and Downie 1994, Fox et al 1995, UK Consensus statement 1998).

Comparing the positions of subjects' justifications on the hierarchies pre- and post-instruction can be used as a measure of change following instruction.

DESIGN

To test the reliability of the method developed clinical tutors involved in ethics teaching in the early years of

the curriculum were invited to take part as raters. If the EHCI is to be used in practice as a possible assessment instrument it was considered important to test it under realistic conditions using a sample of raters who are likely to be involved in using it. Seven raters classified the responses of ten subjects to the nine consensus vignettes of the EHCI, on two occasions. The first stage involved raters' judging the consistency of subjects' justifications with consensus before rating responses judged to be consistent with consensus on the action justification and values recognition hierarchies.

Reliability was investigated using generalizability theory (Gleser et al 1965, Brennan 1977).

The methodology developed enabled evaluation of students' attitudes and potential behaviour towards issues raised in consensus vignettes, which were particularly topical and of interest. The areas of whistle blowing, withdrawal of treatment and the issue of sexual relationships between doctors and patients were examined in the seventh, eighth and ninth papers in the series. There have been no previous longitudinal studies examining students' attitudes towards these subjects and how they change with exposure to a modern medical curriculum.

RESULTS

PROCESS EVALUATION YEAR 1

The small group process was viewed, by both students and tutors, as being enjoyable and particularly well suited to ethics learning. Issues, and particularly controversial issues, could be raised and discussed in a non-threatening environment promoting the sharing and discussion of individuals' views. Students were often able to relate personal experiences, both positive and negative, which facilitated discussion.

Tutors played an important role in the successful functioning of individual groups, the productiveness of sessions often being dependent on the tutor's small group skills. Effective tutors were identified as being able to promote discussion and were viewed as part of the group. Tutors perceived as being less effective were seen as controlling the group to the extent where students' participation was inhibited by the tutor's behaviour.

The small group process was seen as being particularly important in the development of critical self-awareness. It provided a non-threatening environment that promoted reflection on students' pre-existing knowledge of, and views on, ethical issues. It encouraged the airing and challenging of students' views, and exposed students to the

opinions of their peers and tutors. This was especially effective where these views were different to the student's own. Within the group setting the use of role-play, structured debating of issues, and case scenarios, particularly the use of staged scenarios, were noted to promote critical self-awareness. The tutors also helped promote the development of students' critical abilities through admitting their own shortcomings when sharing their experiences with students.

The integration of the medical curriculum helped promote learning. Within Vocational Studies the provision of contact with patients in a variety of clinical settings afforded students ethical experiences on which to reflect. Predominant among these were experiences that illustrated lack of confidentiality. Debriefing by tutors facilitated students' reflection on their experiences, and was integral to its effectiveness. PBL sessions also covered issues that reinforced learning from Vocational Studies sessions, and generated topics, which could be taken to ethics sessions for discussion.

Students and tutors were observed to be driving the ethics curriculum towards having a contextual rather than theoretical base. The trend occurring both in medical ethics education, and in bioethics theory and research, is

towards increased attention to context (Hundert et al 1976). Students were also noted to have a strong exam-orientation.

OUTCOME EVALUATION

In comparing the performance pre- and post-year 1 of students from the new curriculum, with controls from the second year of the old curriculum, there was a significantly greater increase in the number of post-test consensus answers among students from the new curriculum ($p=0.0048$): odds ratio for obtaining the post-test consensus answer in the experimental group, compared with the control group 1.73, 95% CI (1.28, 2.33). Analysis of individual vignettes indicate that the areas of autonomy, confidentiality and consent, the main thrust of the first year teaching in the new curriculum, were the areas where there was the greatest movement towards the consensus judgement of informed professionals.

Longitudinal outcome evaluation of the cohort of students from the first intake of the new curriculum found a statistically significant increase in the probability of giving the consensus answer, from 63% to 70% pre-year 1 to post-year 1, sustained post-years 3 and 5 at 69% respectively. Most of this improvement was in vignettes 5

and 6. The performance of students undertaking a one-year intercalated BSc appeared to regress on testing post-year 4, particularly on vignette 9 (whistle blowing vignette).

Students scored highly pre-curriculum in vignettes 1, 2, and 4 (84%, 94%, 79%), and continued to score highly in these vignettes post-years 1, 3 and 5 making significant improvement more difficult to detect. Analysis of students' written justifications of their choice of pre-set answer to vignette 1 (withdrawal of treatment) however found evidence of cognitive learning in terms of an improvement in the sophistication of the justifications. Post-year 1 the justifications for the decision to assist the patient to withdraw life-prolonging treatment increasingly identified, classified and analysed the issue in terms of the principle of patient autonomy and its prerequisites patient competence and informed consent. This improvement was sustained post-years 3 and 5, although no further improvement was found. There was also movement up the values recognition hierarchy post-year 1, sustained post-years 3 and 5, although no further improvement was found.

The lack of significant improvement post-year 1 for vignettes 9, 10 and 12, which deal with issues of professionalism, is perhaps not surprising in view of there being no formal teaching on these issues during year 1.

However, no improvement was found post-years 3 and 5. Furthermore, analysis of students' written justifications for vignettes 9 and 10 found students' performance to be poorer than it appeared on analysis of their choice of pre-set answer. For both vignettes only 48-64% justified their choice of consensus pre-set response with reasoning based on consensus opinion. There was also no change in the levels of sophistication of written justifications in either hierarchy as students passed through the curriculum.

RELIABILITY OF THE EHCI

In testing the reliability of the EHCI, question effects were the largest identified source of variance with occasion effects being minimal. The IRR equivalent coefficient was 0.39. Performance is often question specific and it would be inappropriate therefore to use performance on one question to judge subjects (van der Vleuten 1996). Since the responses used in the study were from a group of students answering all 9 questions, it was possible to calculate the true average rating by each rater, of each student, on both occasions. Using this approach rater effects were now the largest source of variance.

As rater effects were the largest source of variance a "D" Study was therefore performed to look at the effect of increasing the number of raters scoring each student's questionnaire, on each occasion. The results, shown in table 2, indicate using 4 raters to score each student's questionnaire would produce satisfactory reliability.

Table 2 D-Study looking at the effect of increasing the number of raters scoring each students' questionnaire

Number of raters	IRR coefficient
2	0.53
3	0.62
4	0.70
5	0.74
.	.
.	.
10	0.85

The EHCI's ability to reveal subject's thinking behind their decision on which of the pre-set courses of action to take on each vignette produced rich qualitative findings of which only a small fraction was illustrated in the papers produced. The papers covered vignettes 1 (dealing with the dilemma of whether to assist with a competent patient's request for withdrawal of treatment), 9 (dealing with the dilemma of whether to whistle-blow on a colleague who has

ignored a patient's wishes) and 10 (dealing with the dilemma of whether to enter a potentially sexual relationship with a patient). Examples include the following justification, given by a student pre-curriculum, to his/her decision not to whistle-blow.

"I would love to have the courage to report the incident, but feel when it came to it I would bottle out. This is partly because of the supposed 'fear' of the old boy system and also because I have no evidence it would perhaps become dirty. I would be too afraid of the backlash."

Another example was a student's justification for not supporting a competent patient's decision to have treatment withdrawn.

"Unless a patient is brain dead I believe no doctor has the right to assist suicide. Instead he/she should strive to improve the quality of (her) life. As a Christian I believe only God has the right to take life."

DISCUSSION

Many of the limitations of the research undertaken relate to the restrictions imposed by the context of its implementation. The constraints imposed prevented a full evaluation of ethics teaching in the new curriculum or the Vocational Studies course. Its focus had to be narrowed.

LIMITATIONS OF INDIVIDUAL STUDIES

As with many evaluation studies, problems were encountered that affected the various components of the research. The variable student response to the process evaluation instruments potentially affected the representativeness of the data obtained from individual instruments. However the adoption of the multi-method approach, using the methodological triangulation technique to ascertain the degree of convergence of the data obtained, along with the validation procedures used for the individual instruments, helped to overcome these problems.

Although the open questionnaire returns were low for some of the individual sessions, as the sessions were considered as a whole it had less impact on the findings than would have been the case if the sessions had been considered individually. Moreover, the fact that draft reports of the findings were circulated on two occasions to all the

students and tutors for comment and criticism, before being included in the report to the Evaluation Group, helped validate the data obtained. In addition, the issues and concerns raised by the questionnaires were explored further in the focus groups.

As with the open questionnaires, the circulation of draft reports of the focus group findings to participants for comment and criticism helped establish their validity. While the focus group composition was not as planned, it was felt that the groups, despite not being completely random, were sufficiently representative for the results to be generalisable to the year as a whole.

For the structured tutor ratings, where four or less forms were returned for individual tutors, the evaluations were interpreted with caution, as they did not represent the views of the majority of the group. Despite these limitations the data were of value for use in triangulation.

Cohort studies are particularly appropriate in research on human growth and development. They allow the researcher greater opportunity to observe trends and to distinguish 'real' changes from chance occurrences (Cohen et al 2000). This study, like most cohort studies, suffered from sample mortality. The loss of the controls from the last year of

the old curriculum was particularly disappointing, as the effect of the different curricula could not be compared. Despite the sample mortality, the cohort from the first intake of the new curriculum were found to be representative of the year as a whole at each time point surveyed.

Cohort studies can also suffer from 'control effects', which was a threat in a situation where the same instrument was used on four separate occasions. However, the time interval of one year between the first and second stages, two years between the second and third, and a further two years between the third and final stages made this less likely. In addition, students received no feedback on what the "correct" answers are or on how they performed individually, and 3 of the 12 vignettes are non-consensus vignettes for which there is no "correct" answer.

Cohort studies can also suffer from the interaction of biological, environmental and intervention influences. The effect of the "hidden curriculum" (Hafferty and Franks 1994, Shorr et al 1994, Self et al 1998a, Patenaude et al 2003) is an important influence and its potential effect has to be considered in interpreting the findings.

The method developed for analysis of subjects' justifications for their choice of pre-set answer to the

consensus vignettes of the EHCI was reductionist and narrowed the focus of the complex subject matter. The value of the data obtained, by asking subjects to justify their choice of pre-set answer, goes beyond what can be easily codified and reduced to numbers. The approach taken was guided by the purpose of the EHCI in the context of the research purposes. The performance of the cohort of students, in terms of change in their potential behaviour on meeting ethical dilemmas, was to be used to help establish the longitudinal effectiveness of teaching. As such the performance of the group was more important than that of individual students. On-going work on the EHCI hopes to widen the focus and utilise the richness of the data obtained.

Testing the reliability of the method developed to analyse subjects' written justifications proved problematic. Although the subject numbers used were consistent with other studies using generalizability theory to examine reliability (Evans et al, 1981, Gorter et al, 2002), the relatively low number of subjects involved, limited by the logistics of the study, affected subject variance particularly at question level data analysis. If the study is to be repeated we would recommend using data from more subjects.

Question effects found were consistent with the general findings concerning the case specificity of student and physician performance. Performance is often question specific resulting in many items having to be included in the test instrument to achieve a stable score (van der Vleuten, 1996). If the EHCI was used as an assessment instrument students' total scores over all items should be used. The number of test items in the EHCI is practical given the nature of the subject.

The main factor affecting reliability, when using student's total scores across the nine vignettes, was rater variance. While the magnitude of the IRR obtained using one rater was consistent with other studies using open-ended question formats (Shea and Fortna, 2002), it was not sufficient to recommend using the EHCI to make summative judgements under these conditions (Streiner and Norman, 1995). The raters used had no particular expertise in medical ethics and little previous marking experience. The method was designed to increase the likelihood of producing reliable results. Although the students taking part in the study were volunteers, the randomisation process safeguarded against selection bias. Raters were provided with resource material, including a marking schedule, and participated in a marking workshop. Ensuring that the

raters were unaware of the order of students' responses for each question and encouraging them, through the format of the marking booklet, to classify all the responses to one question before moving onto the next, reduced the likelihood of prejudice or halo effects. The process of interpreting a written answer and deciding firstly whether it fits into one of two main categories and then either subcategorising it, or deciding where it lies on a further two distinct hierarchies, is a potentially highly subjective activity. It requires the categories to be defined clearly enough to enable raters to reliably classify subject's responses (Gronlund and Linn, 1981). One of the raters did not complete the marking exercise as he/she considered the task too complicated. While a potential factor in this was confusion caused by the changes made to the hierarchies during the workshop, most raters reported being clear on what constituted consensus and non-consensus answers, and on analysis of a number of representative comments widespread agreement was obtained.

Despite these measures there was a lack of consistency among the raters in deciding whether responses were judged to be consensus or not. If the EHCI were to be used to make decisions on subjects, further training and calibration of raters, together with the strategy of using four raters per

questionnaire would be required to produce satisfactory reliability levels for this component of the methodology.

RESULTS OBTAINED

The performance of the cohort from the new curriculum was found to improve post-year 1. This was in line with previous studies that showed improvement in students' moral reasoning and factual ethical knowledge after ethics teaching early in medical curricula (Self et al 1989, 1993, Hebert et al 1995, Shorr et al 1994, Holm et al 1995). There was a significantly greater increase in the number of post-test consensus answers among students from the new curriculum compared with the control group from the old curriculum. The improvement, in terms of movement of pre-set answers towards consensus opinion, was small and was mainly in vignettes 5 and 6. However, it must be interpreted in the light of the inter-relatedness of vignettes 1, 2, 4, 5, 6 and 8, which are linked in terms of the ethical issues involved, and students' pre-curriculum performance in vignettes 1, 2, and 4 (84%, 94%, 79% respectively choosing the consensus response), which made significant improvement more difficult to detect. Analysis of written justifications for the choice of pre-set response to vignette 1 found improvement in the level of

sophistication post-year 1 which was not apparent from the analysis of pre-set responses only. This illustrates the importance of fully utilising the potential of the EHCI. Where no improvement was found i.e. vignettes 8, 9, 10 and 12, with the exception of vignette 8 they covered areas in which students received no formal teaching.

No further improvement was found in the new curriculum cohort's performance post-years 3 and 5 in terms of both movement of pre-set answers towards consensus and the level of sophistication of the written justifications. Indeed a small decrease in performance occurred as students went through the curriculum. Although it was hypothesised that there may be an adverse effect on students' ethical development as they went through the curriculum, in line with previous studies (Hebert et al 1992, Self et al 1993, 1998a, Price et al 1998, Patenaude et al 2003), the magnitude of the effect proved disappointing given the curriculum's modern design.

The lack of improvement post-year 5 has to be interpreted against the background of the limitations of the EHCI as an outcome tool. The assessment of attitudes, ethical understanding and legal responsibilities is a relatively new area of assessment in medical education (Schumann and Harden 2003). Assessment in these areas is high on Miller's

(1990) learning pyramid and occurs best in the "real" setting during care-giving. It follows that students' performance in these areas is best assessed directly over time by staff observing the student's behaviour during clinical attachments. A recent review by Lynch et al (2004) found 49 assessment tools, which include the EHCI, have been developed to assess various aspects of ethical performance. However, only nine of these tools had either their validity or reliability examined (appendix 22). Peer assessment and portfolios can be powerful tools in this area. Written assessment approaches, such as the EHCI, computer simulations and OSCEs can be used as a secondary measure to assess the application of students' attitudes, ethics and understanding of their legal responsibilities in the simulated or practice setting. While some of these methods would be inappropriate in the context of outcome evaluation, the use of multiple instruments and observations based on multiple samples of behaviour with triangulation of the data obtained would have been a more appropriate approach (Schumann and Harden 2003). The adoption of a single outcome measure was guided by the existing literature at the time of the evaluation's inception. On reflection a multi-method approach to outcome evaluation, with triangulation of data would have produced

more appropriate evidence of students' ethical development, particularly in the predominantly clinical years of the curriculum.

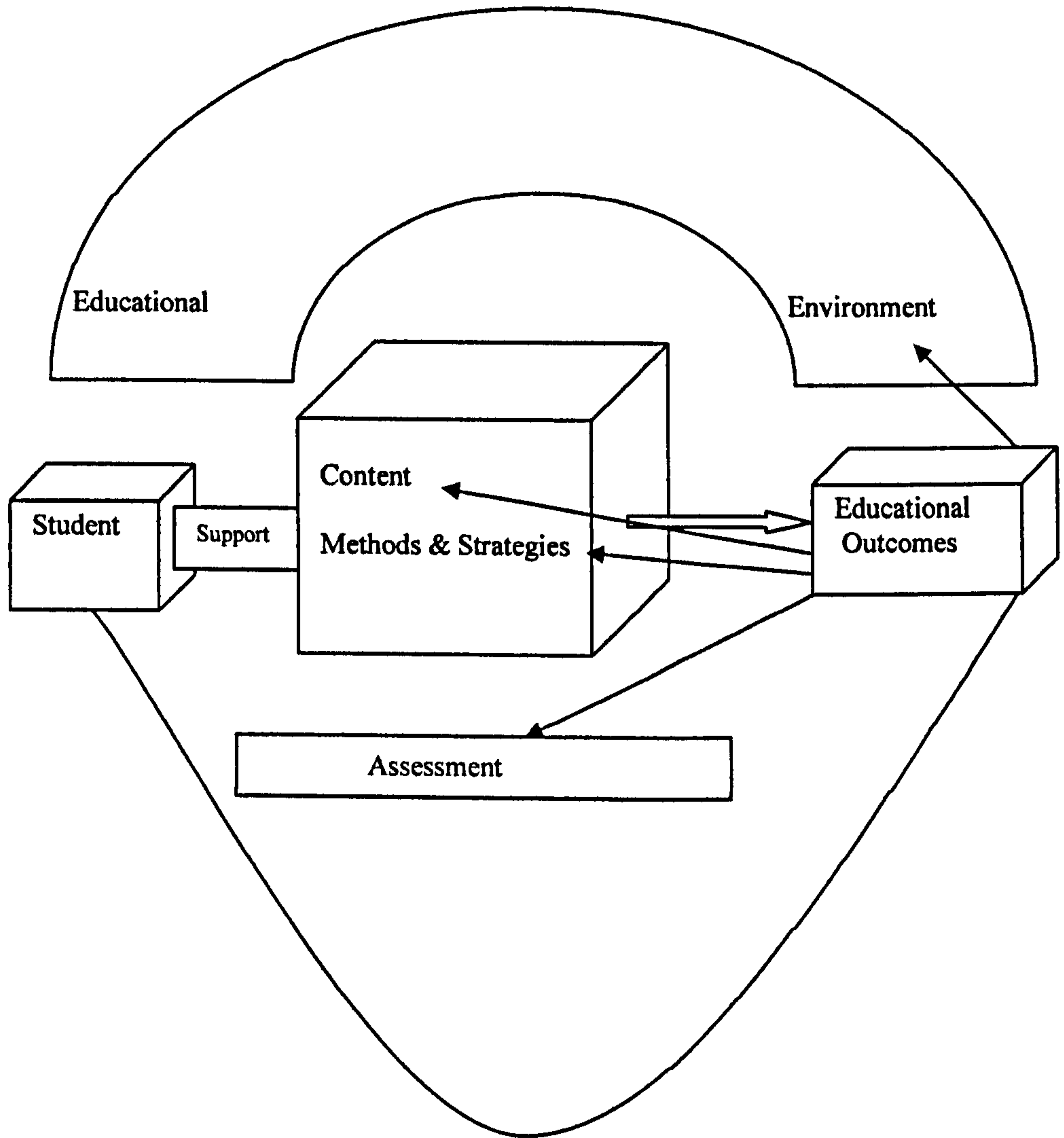
IMPLICATIONS FOR THE CURRICULUM

Despite its limitations the EHCI was able to measure the effect of a modern curriculum on students' performance on the second level of Miller's competence pyramid. The results obtained were disappointing and a cause for concern. Students post-year 1 showed a slight decrease in their abilities to analyse vignettes, identifying any inherent moral issue(s) using knowledge of the range of moral concepts used frequently in ethical theory, showing awareness of the values involved and showing they can make clinical ethical decisions consistent with consensus opinion. This was particularly disappointing for the vignettes concerned with issues of professionalism. The results cast doubt on whether the curriculum in action is achieving the desired outcomes relating to students' ethical development.

Figure 7 is a model of the curriculum emphasising the importance of outcomes, after Harden et al (1999). With the adoption of an outcome-based approach, particularly in the

clinical years of the curriculum, it can be used to review the curriculum in terms of learning in ethics and law.

Figure 7



A number of questions are posed by the findings:

- a) Were the teachers and students familiar with the outcomes relating to ethics?

While the aims of the clinical rotation are communicated to all those involved in the clinical core, they lack the clarity of the three-circle model, which has been adopted by the Scottish Deans Medical Curriculum Group. The routemap on ethics learning in the curriculum also fails to include teaching during the clinical attachments. Both these factors are likely to have been detrimental to the provision and communication of a clear framework for the curriculum to both teachers and students. Students' familiarity with the desired outcomes is of great importance to the success of an outcome-based curriculum as it builds on their capacity for forethought, providing a guidepost to monitor and direct their progress. It also motivates and stimulates the development of strategies to achieve the desired outcomes (Bandura 1986). Students' familiarity with the outcomes requires to be investigated along with other related factors, which include the degree of ownership students' feel regarding the outcomes; the usefulness of the outcomes as guides to learning; and the degree to which students recognise that the learning

experience provided, and assessment procedures used, reflect the outcomes.

The adoption of the three circle model for the Glasgow curriculum along with its inclusion in the routemap for ethics and law teaching is recommended. This would provide a clear focus for the achievement of the outcomes relating to ethics and law. These should be clearly and unambiguously communicated to all concerned with the curriculum.

b) Did the teachers have a detailed understanding of the outcomes relating to their own contributions to the curriculum?

Tutors in year 1 Vocational Studies reported being unclear about the aims of teaching during focus groups. It is not clear if teachers in the later years of Vocational Studies, the PBL and clinical cores are similarly unsure. Teachers' and Educational Supervisors' understanding of the ethics learning outcomes, relating to their own contribution to the outcomes, is particularly important during the clinical attachments where each discipline should make a contribution to the outcomes and where role modelling plays an important part in students' ethical development.

c) Were the learning experiences offered likely to promote students' achievement of the learning outcomes?

A conducive educational environment is integral to the achievement of the outcomes relating to ethics and law. This requires the involvement of the entire medical school and the wider society (Hafferty and Franks 1994, Shelton 1999). A number of different approaches have been proposed to promote the ethical development of students and tackle the problems of the hidden curriculum. Hafferty and Franks (1994) recommend:

1. Teachers should become aware of students' perceptions at the earliest possible stage of their training, before they are affected by their medical education.
2. The content, and possible impact, of a hidden curriculum are best addressed by a consortium of faculty, students and expert outside observers, whose goal is to address the training process in its broadest sense.
3. Positive role-modeling should be fostered among faculty members, which can influence student behaviour.
4. Students should be given the "real life" opportunity to appreciate the relevance of ethics to medicine at the organisational level i.e. increased attention should be paid to the macroethical issues as ethics education cannot be properly conceptualised in isolation from the broader

social contexts in which they arise.

Other strategies that have been employed include medical ethics educators joining forces with educators from humanities disciplines in applying a "classical humanities approach" (Self, 1988). Other methods to promote humanistic qualities in students draw more heavily on psychology and social sciences, for example the "humanistic psychology approach" which is based on the assumption that students who are treated more humanely themselves will be more likely to act humanely towards others (Self 1988). It usually makes use of longitudinal peer support groups that encourage students to discuss the stresses of becoming a doctor (Puckett et al 1989), and may include other structured activities such as role playing sessions, meetings with faculty advisers, or stress management training (McClenon, 1994). Other techniques focus on patients' experience by deliberately exposing students to patients more frequently, or more intensely, than is customary. Enhanced patient contact is intended to foster compassion, empathy and understanding of the patient's perspective in relation to one's own.

The medical faculty took on board many of these initiatives, for example fostering positive role modelling, enhanced patient contact particularly in the early

curricular years, the provision of a humanities SSM, the introduction of the Educational Supervisor system and formalising and extending the Advisor of Studies system. However, more needs to be done to build on what has been achieved for example establishing a consortium to tackle the problems of the hidden curriculum and the provision of longitudinal peer support. The fostering of positive role-modelling should be further promoted, particularly among clinical teachers. Instruments such as the EHCI could be used to make teachers aware of students' ethical attitudes on entry to the curriculum.

To achieve the desired outcomes for ethics and law the curriculum should be built upon an integrated and cohesive structure through the contributions each phase of the curriculum and each discipline makes to achieving the outcomes (Boyd 1987, Miles et al 1989, Fox et al 1995, Parker et al 1997, UK Consensus Statement 1998). Adequate provision and coordination requires at least one full time senior academic in ethics with relevant professional and academic expertise (UK Consensus Statement 1998). Glasgow was fortunate to have such a person in post in 1996. However, the post holder left in 2001 and has not been replaced. This is likely to have a detrimental effect on the future development of the ethics curriculum.

Ethics teaching should be multi-disciplinary and interprofessional if it is to meet its broadening goals (Boyd 1987, Miles et al 1989, Fox et al 1995).

Interdisciplinary teaching occurs during ethical plenaries. There is an interprofessional collaborative session in years 4&5. However, their provision is less extensive than other medical curricula e.g. Dundee University.

YEARS 1 - 3

The first year of the curriculum appears to contribute towards the desired outcome for the first three years of the curriculum. Years 2 and 3 appear to be less effective. While the adverse effect of the hidden curriculum may be a factor in the lack of improvement found post-year 3, the structure and process of ethics teaching in years 2 and 3 of Vocational Studies may also have adversely influenced students' performance. In year 1, students receive 30 hours of mainly small group ethics teaching. Between years 2 and 3, however, they receive only 14 hours of mainly lecture and large group teaching during plenary sessions. Examination of the aims of ethics teaching in the first three years of the curriculum would suggest that the plenary teaching format is less likely to achieve the desired outcomes.

Ethics is a philosophical discipline which has doubt and uncertainty, dispute and argument as its staple diet and modus operandi (Parker 1995). The process of small group discussion fits well with the ways in which ethical enquiry is conducted. While there is room for individual contemplation, active interchange is a stimulus to individuals' creative and innovative thinking, and helps clarify one's own point of view. The challenge of different perspectives stimulates "epistemic curiosity", helping to develop reflective practitioners (Parker 1995). Given the controversial nature of many ethical questions in medicine, a learning environment conducive to students' comfort in expressing opinions and raising questions is vital. Such methods also encourage greater self-scrutiny on the part of teachers bringing intuitions into a critical light and encouraging the active engagement of teachers in integrating the cognitive and attitudinal elements of clinical ethics (Parker et al 1997).

There is empirical evidence to suggest that small group teaching may be more effective than lecture and large group teaching in promoting students' ethical development. Self et al (1989) found students exposed to small group, case-study discussion demonstrated greater increase in their moral reasoning abilities than those receiving lecture-

based courses. They also found that the effect on moral reasoning abilities occurred only when students were exposed to 20 hours or more of small group teaching (Self et al 1998b). Our study, comparing students from the first year of the curriculum with controls from the old curriculum, showed small group teaching to be more effective than lecture and large group teaching in improving scores on the EHCI.

The results of the process evaluation of first year ethics teaching suggest that the structure and process of the small group sessions appeared to contain many of the conditions required to foster transformative learning (Meizerow 1994), which is increasingly recognised as being an effective approach to bioethics teaching (Kaufman et al 2000). Transformative learning reflects a constructivist approach to learning and is a form of trans-disciplinary education. Successful transformative learning questions assumptions, provides support from others in a safe environment, provides challenge, examines alternative perspectives and provides feedback. New assumptions are tested in the "real" world or in discussion with others (Meizerow 1994). To promote transformative learning requires educators to adopt the role of critical friend and co-enquirer (Cranton 1994). Effective tutors were those

found to be adopting these roles.

Tutors were also found to be positive role models for students, both in terms of on-the-job modelling and through their role as teacher (Harden and Crosby 2000).

Demonstrating to students the relevance of what they were learning to their future careers as doctors was noted to be of particular value. Empirical evidence has suggested that students are more profoundly affected by role models than by formal ethics coursework (Pelligrino et al 1985, Puckett et al 1989, Sulmasy et al 1994). Positive role modelling is integral to the virtue based approach to ethics (Shelton 1999) and can help counter the effects of the "hidden curriculum" (Hafferty and Franks 1994).

Early clinical exposure provided important ethical learning experiences. Tutors contact with students throughout their entire Vocational Studies first year experience and their awareness of the links between domains were important factors in integrating students' learning with these experiences. For example, during debriefing of students' early patient contact experiences, tutors helped students' reflect on their experiences in terms of relevant ethical issues. Patient contact in the early years of medical school is important in students' ethical development. It has been shown to assist the development of a patient

centred approach to patients (Miles et al 1989), foster ethical sensitivity (Hundert 1986), help students examine the values he/she brings to clinical care, and teach clinical-ethical reasoning (Miles et al 1989, Fox et al 1997). It can foster effective collaboration with nurses (Calman and Downie 1987), lawyers and other professionals (Brody 1974, Bickel 1986). Our findings suggest it can also help promote trans-disciplinary integration of learning and experience.

We suggest that the change from mainly small group ethics teaching to predominantly lecture and large group teaching in years 2 and 3 of Vocational Studies was a factor in the lack of improvement found post-year 3. The results support the hypothesis that small group teaching is more effective than the lecture and large group format for ethics teaching in the early curricular years. However, further testing is required to establish the generalisability of these findings. The results also lead us to suggest that small group teaching is particularly effective for learning which requires the integration of cognitive and attitudinal components.

YEARS 4&5

A continuation of the learning methods used for the first three years into the clinical core is unlikely to be effective in achieving the desired outcomes for ethics and law. As part of full integration the UK consensus statement (1998) recommends teaching in ethics and law features in students' clinical experience. Each clinical discipline, they recommend, should address ethical and legal issues of particular relevance to it. While vertical integration has been successfully accomplished in many curricula, as of 1995 in the United States, where medical ethics education is most advanced, there were no reported curricula which have fully realised the ideal of cohesive, integrated and comprehensive medical ethics education spanning the whole of the medical curriculum. This is mainly due to the labour intensity of vertical integration in the clinical years (Fox et al 1995).

The outcome-based approach has the potential to fully integrate ethics into the clinical curriculum and promote trans-disciplinary learning. It relies on each discipline making a contribution to the learning outcomes, which may be exhibited in different ways in each specialty. The master list of presentations provides a framework for integrating students' experiences in the different

specialities (Laidlaw and Harden 1990). The learning methods and strategies used during the clinical attachments should be guided by the outcomes. The methods and strategies used by the different disciplines involved in the clinical core are the responsibility of the different disciplines. The results suggest that some of the outcomes are not being achieved and further process and outcome evaluation is recommended to establish what learning methods and strategies have been adopted and establish their effectiveness.

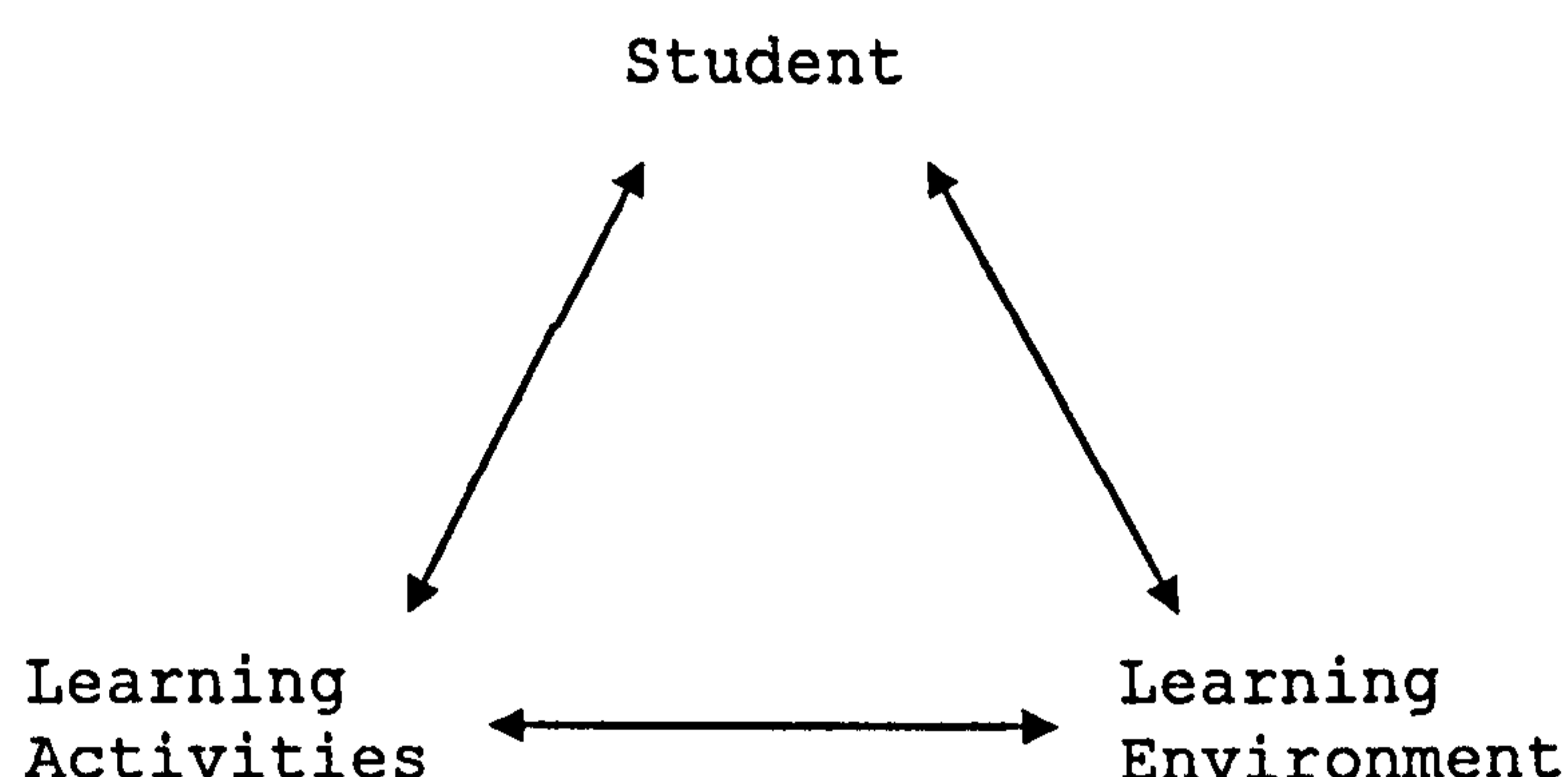
Integration has the potential, particularly during the predominantly clinical years, to focus students' learning on the recognition of moral aspects of cases and encourage a formulaic application of principles concentrating on the micro-ethical perspectives without consideration of the wider macro-ethical perspectives (Hafferty and Franks 1994, Parker et al 1997). Both students and teachers require a mechanism to provide coherence within medical ethics teaching to allow for both microethical clinical decisions and macroethical health care decisions to be defended by rational justifications which are clear and concise. The establishment of these thematic links, which can take a number of educational forms, should challenge students about where they, both as students and future doctors, fit

in the social and institutional arrangement of society and provide them with the rigour of critical reasoning which is necessary for deliberations in medical and professional ethics (Parker et al 1997). Consideration of the macro-ethical perspectives requires the provision of reflective space in which the implications of the cases may be linked against a broader background. The suggested format for teaching during clinical attachments provides for guided reflection facilitated by the Educational Supervisors and protected time for student self-study. Students are also required to write up and reflect on a number of cases where ethical considerations are particularly relevant. These are potentially extremely valuable in promoting consideration of the broader background against which clinical experiences can be linked. The eleven Academic days, run over the two academic years, employ a lecture and large-group format, which from both a theoretical perspective and our findings on the use of small groups for ethics teaching are less likely to promote critical reasoning and thematic linkages.

Possible strategies for clinical ethics teaching

The clinical setting is a complex learning environment. To illustrate its complexity, Bandura's (1986) concept of reciprocally interacting influences, figure 8, provides a useful model for examining the clinical setting.

Figure 8



The student brings with him/her knowledge, skills, values and beliefs, goals, perceptions of personal efficacy and all previous experience. The learning environment includes the formal and hidden curricula, the faculty, resources and other students. The learning activities include students' work in the curriculum, their interactions with others, which in turn interact with their gradually developing knowledge and skills and with the learning environment. Students' actions, learning and functioning are the result of a continuous, dynamic reciprocal interaction among these

three sets of determinants (Kaufman et al 2000). Bandura (1986) contends that the relative influences exerted by each of these sets of factors will vary for the different activities, different individuals and different circumstances. For example, if the learning environment is a busy clinical ward, students may do only enough to get through. Similarly where situational influences are relatively weak, personal factors will exert the strongest regulatory influence e.g. students, when not pressed by powerful environmental forces, may choose to learn more about talking to patients. These choices will be guided by the student's own values, perceived needs and individual goals. All of these factors require to be considered in planning the clinical curriculum.

Social cognitive theory views humans as possessing inherent capabilities (Bandura 1986). It provides the following learning conditions which build on the basic capabilities learners bring to the situation:

1. The provision of clearly defined outcomes enhance learning.

The outcome-based design is consistent with this approach. The virtue approach to ethics education similarly advocates establishing a range of concrete clinical capacities to which the virtues of the "good doctor" correspond and the

Aristotelian means that define them. Formulation of these characteristics would help further define desired outcomes (Shelton 1999).

2. Modelling the desired process or skill facilitates vicarious learning through observation.

Role modelling is also one of the most powerful means of transmitting values, attitudes and patterns of behaviour to students (Walton 1985, Bandura 1986, GMC 1999). As mentioned previously, there is evidence that students are more profoundly affected by role models than by formal ethics coursework (Pelligrino et al 1985, Puckett et al 1989, Sulmasy et al 1994). Modelling is also central to the virtue approach to ethics education (Shelton 1999). The person who excels in an activity demonstrates the virtues required of the activity. Role models who exemplify and embody the performance of that activity serve as a standard by which to judge performance and a template for students' actions. Because medical role models simultaneously perform individual and institutional acts, virtues embodied by individuals reflect personal and transpersonal ends associated with these activities. Shelton (1999) provides the example of the goal of caring for the sick. The virtuous acts of the individual physician promote both

his/her own professional excellence and the capacity of the institution to accomplish that end.

3. Learners require task relevant knowledge.

The process of PBL promotes task relevant knowledge and students' view of themselves as capable of the task. In the clinical setting, students' should build on the knowledge they acquired in years 1-3 of the general theories of ethics, law and professional behaviour and awareness of their legal, ethical and institutional obligations.

Students may require stimulation and assistance to activate prior knowledge and relate it to their clinical experience.

This promotes students' view of themselves as capable of the task. Methods which have been employed to facilitate students' learning in clinical settings, which would promote the provision of task relevant knowledge include ethics grand ward rounds and ward rounds with ethicists (Fox et al 1997).

4. Guided practice of a new skill with feedback allows learners to develop positive efficacy perceptions about the task.

Practice promotes the internalisation of personal standards, which can then be used in self-regulation and self-evaluation. Corrective feedback is integral to effective learning. The level of performance achieved is

lower without feedback and feedback itself is less effective when it is not related to a desired outcome (Glaser and Bashook 1989). PBL is designed to provide students with feedback as part of its process. Vocational Studies similarly is designed to provide students with feedback on their performance in developing the interpersonal skills required to practice ethically. In the clinical core, feedback is provided by the educational supervisors. In the ward setting, the provision of feedback is dependent on the individual teachers involved. Further investigation of its effectiveness is required.

In year 3, as part of communication skills, there is a session on breaking bad news using role play with actors. A number of other medical schools have introduced specific courses for improving interactional skills related to medical ethics (Tolle et al 1989, Fox 1991, Gordon and Tolle 1991, Johnson et al 1992). These have usually taken place during the clinical years, the students being challenged to apply ethical concepts in actual practice. Examples include the Yale University Ethical and Humanistic Medicine course, where students watch each other role-play clinical tasks, such as obtaining informed consent, delivering bad news, and discussing "do not resuscitate" orders. They compare the techniques they observe and

perform, and then discuss a list of "practical suggestions" specific to each interactional skill (Fox 1991). In the UK, Cushing and Jones describe a "Breaking Bad News" course at the London Hospital Medical College and St Bartholomew's, which uses group discussion, video presentations, and role-play involving actors, to develop students skills in "breaking bad news" (Cushing and Jones 1995). Further sessions aimed at improving interactional skills related to medical ethics could be provided during years 4 and 5 in the same way as clinical skills sessions are provided.

5. Learners require opportunities for reflection.

Reflection allows integration of new into existing experience and knowledge. It also allows the learner to build accurate and positive perceptions of efficacy based on their experience. Again the process of PBL provides opportunity for reflection. Vocational Studies is similarly designed to enable reflection, as are the Special Study Models. In the clinical core, as mentioned previously, consideration of the macro-ethical perspectives requires the provision of reflective space in which the implications of the cases may be linked against a broader background. The educational supervisor system, the portfolios and the Academic Days are designed to promote students' reflection. Providing students with the opportunity to undertake

retreats has been found to be useful by some universities (Fox et al 1995).

The conditions for learning described above are particularly important in maximising the development of clinical skills, knowledge and behaviours. Students frequently report feeling afraid when required to perform clinical tasks which they have not been formally taught or had the opportunity to practice (Kaufman et al 2000). The traditional curricular approach to ethics learning, which usually involves discrete, discipline-based ethics course(s), often resulted in students feeling unprepared to confront ethical issues in practice (Christakis and Feudtner 1994, Parker et al 1997). A wide variety of skills and behaviours can be more effectively learned if students see a demonstration of the desired performance, can practice and receive feedback. These conditions also ensure that positive efficacy perceptions are developed so that students will continue to perform the skills, monitor their progress and continue to develop and learn in the future. Students who lack confidence in their ability to perform certain tasks are likely to avoid those tasks in the future. Most importantly students need to reflect on their performance to integrate their learning and their experience.

Social cognitive theory and Aristotle's framework for virtue provides approaches, which may help guide teachers in the clinical years to provide a curriculum which will obtain the desired outcomes.

d) Did the initial assessment procedures adopted for the new curriculum detrimentally affect students' learning?

Van der Vleuten (1996) has described at least four ways that assessment can drive the learning process:

- 1 Through its content
- 2 Its structure or format
- 3 What is asked (e.g. the information given)
- 4 Its frequency, timing and the number of repeat examinations.

The first year process evaluation found students to have a strong exam orientation. Ethics questions were initially incorporated into the first and final summative assessments only. With written instruments also being the main assessment instruments used for summative examinations, the importance of ethics in the curriculum was unlikely to have been promoted and important outcomes relating to student's ethical development were not assessed. As Wong and Cheung (2003) stated recently, "Medical schools need to be satisfied that each of their students has reached a minimum standard of ethical competence, just as they need to be satisfied with the clinical competence of their graduates." If Glasgow is to become a fully operational outcomes-based school there needs to be clearer specification of the desired outcomes, which will guide the planning and

implementation of student assessment. Outcome-based education is consistent with the move to more performance-based assessment. It facilitates an assessment-to-a-standard approach in which what matters is the standards students' achieve and not the time they take to achieve this (Harden et al 1997).

CONCLUSIONS

- The medical faculty has made a start in creating an educational environment, which can tackle the problems of the hidden curriculum and promote students' ethical development. However, more needs to be done to build on what has been achieved.
- The decrease in students' abilities, following the first year of the curriculum, to analyse cases with an ethical component and make clinical ethical decisions cast doubt on whether the curriculum in action is achieving the desired outcomes relating to students' ethical development.
- The adoption of the three-circle model of outcomes for the Glasgow curriculum is recommended. This would provide a clear focus for both students and teachers provided they are clearly and unambiguously communicated to all involved in the curriculum.

- To achieve the desired outcomes for ethics and law the curriculum should be built upon an integrated and cohesive structure through the contributions each phase of the curriculum and each discipline makes to achieving the outcomes.
- Adequate provision and coordination of teaching in ethics and law requires at least one full time senior academic in ethics with relevant professional and academic expertise. The University should consider replacing the original post holder.
- Role modelling is one of the most powerful means of transmitting values, attitudes and patterns of behaviour to students. Modelling on-the-job and through the role as teacher should be encouraged throughout the curriculum.

- It is suggested that the change from mainly small group ethics teaching to predominantly lecture and large group teaching in years 2 and 3 of Vocational Studies was a factor in the lack of improvement found post-year 3. It is hypothesised that small group ethics teaching is more effective than the lecture and large group format for teaching in the early curricular years. Further testing is required to establish the generalisability of these findings.
- Small group teaching is particularly effective for learning which requires the integration of cognitive and attitudinal elements.
- Early clinical exposure provided important ethical learning experiences.
- Interdisciplinary and Interprofessional collaborative teaching in the curriculum could be extended.
- The outcome-based approach has the potential to fully integrate ethics into the clinical curriculum and promote trans-disciplinary learning.

- The routemap for ethics and law teaching in the curriculum should include teaching in the clinical core.
- Both students and teachers require a mechanism to provide coherence within medical ethics teaching, particularly in the clinical years, to allow for both microethical clinical decisions and macroethical health care decisions to be defended by rational justifications which are clear and concise. This requires the provision of reflective space in which the implications of a case may be linked against a broader background. The effectiveness of the current arrangements should be investigated.
- If Glasgow is to become a fully operational outcomes-based school the assessment procedures adopted should assess all the desired outcomes using a performance-based approach.
- Social cognitive theory and Aristotle's framework for virtue provide approaches which can help guide clinical teachers provide a curriculum which enables students to achieve the desired outcomes relating to ethics.

- The use of a multi-method approach to outcome evaluation and a continuation of a multi-method process evaluation through the curriculum is recommended to further establish if the outcomes are being achieved and provide greater insight into the curriculum in action and the hidden curriculum. The design would require to be adapted for the different phases of the curriculum.
- The EHCI has potential as an assessment instrument. However, further psychometric testing is required.
- The value of the data obtained by asking subjects to justify their choice of pre-set answers to the vignettes of the EHCI goes beyond what can be easily codified and reduced to numbers.

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APPENDIX 1**Principal Recommendations of the General
Medical Council's "Tommorrow's Doctors"**

Attitudes and behaviour that are suitable for a doctor must be developed. Students must develop qualities that are appropriate to their future responsibilities to patients, colleagues and society in general.

The **core curriculum** must set out the essential knowledge, skills and attitudes students must have by the time they graduate.

The core curriculum must be supported by a series of **student-selected components** that allow students to study, in depth, areas of particular interest to them.

The core curriculum must be the responsibility of clinicians, basic scientists and medical educationalists working together to **integrate** their contributions and achieve a common purpose.

Factual information must be kept to the essential minimum that students need at this stage of medical education.

Learning opportunities must help students explore knowledge, and evaluate and integrate evidence critically. The curriculum must motivate students and help them develop the skills for self-directed learning.

The **essential skills** that graduates need must be gained under supervision. Medical schools must assess students' competence in these skills.

The curriculum must stress the importance of **communication skills** and the other essential skills of medical practice.

The health and safety of the public must be an important part of the curriculum.

Clinical education must reflect the **changing patterns of healthcare** and provide experience in a variety of clinical settings.

Teaching and learning systems must take account of modern educational theory and research, and make use of modern technologies where evidence shows that these are effective.

Schemes of assessment must take account of best practice, support the curriculum, make sure that the intended curricular outcomes are assessed and reward performance appropriately.

When designing a curriculum, putting it into practice and continually reviewing it, medical schools must set up effective **supervisory structures** which use an appropriate range of expertise and knowledge.

Selection, teaching and assessment must be **free from unfair discrimination**.

APPENDIX 2**THE AIMS OF THE NEW GLASGOW MEDICAL CURRICULUM**

By the end of the course students should:

A. Basic sciences and clinical competence

1. Have acquired knowledge and understanding of:
 - a) The sciences upon which medicine depends, with particular reference to
 - b) The structure, function, growth and development of the body and the workings of the mind; the interactions between them; the factors which may disturb them; the common disorders which result from abnormalities of structure and function.
2. Apply in clinical practice an understanding of the influence of social, environmental and psychological factors on acute and chronic illness and of the influence of organic disease on a patient's well-being.
3. Be able to collect, record and communicate clinical information thoroughly and reliably.
4. Be able to use clinical information (and that in 1b) when applying the principles of clinical practice to the whole patient, including chronic and/or terminal illness and rehabilitation.
5. Have the core knowledge and skills that will facilitate the collection of clinical information; and enable them to:
 - a) handle a number of defined, acute, life-threatening emergencies promptly and effectively,
 - b) deal efficiently with common clinical conditions,
 - c) perform a set number of frequently used clinical procedures,
 - d) apply the principles of therapeutics to disease, the relief of symptoms and to disability.

B. Community Care

1. Understand the population perspective on health and disease and be aware of the interrelationship between individuals and communities.
2. Be able to describe and measure the determinants of health and disease and assess the health needs of populations.
3. Understand the principles and practice of the

prevention of disease and of the promotion of health at both the individual and community levels.

4. Be familiar with the resources available through health and social services and be able to use them effectively for the benefit of patients.
5. Appreciate the importance of policy and planning for health and health care and be able to evaluate service provision.

C Learning and Thinking

1. Recognise the limitations of their own knowledge and abilities, admitting areas of ignorance and seeking help when necessary.
2. Be independent learners with attitudes to self-evaluation and continuing self-education that will promote improvement of their clinical practice and help them to adapt to and participate in change.
3. Have acquired knowledge and understanding of scientific and experimental method and be able to:
 - a) apply scientific principles to evaluation of published work and
 - b) demonstrate a critical and reasoned approach in the conduct of their clinical practice.

D. Communication

1. Be able to communicate in an effective and sensitive manner with patients and their relatives.
2. Be able to establish and maintain good working relationships with medical colleagues and other health care professionals.

E. Ethics and Law

1. Students should:
 - a) have a working knowledge of current ethical guidelines and professional codes of practice and
 - b) apply ethical principles in their clinical decision-making, showing a clear understanding of the value judgements involved in this process and
 - c) have a working knowledge of the principle of accountability and
 - d) understand the ethical principles involved in the relief of suffering and in euthanasia.
2. Demonstrate their understanding of the legal aspects of medicine;
 - consent
 - notification of death

- professional liability
- medical records
- Mental Health Act

APPENDIX 3**PBL Themes in Years 1-3****Year 1**

Block

- 1 - Hierarchy of systems
- 2 - Elementary Topography
- 3&4 - Determinants of Health: Disease patterns, Nutrition, Metabolism, Growth and Development.
- 5 - Homeostasis
- 6 - Risks and responses

Year 2

Block

- 7 - Conception, Growth and development
- 8 - Neurological and Musculoskeletal
- 9 - Cardiovascular, Respiratory and Renal
- 10 - Digestion and metabolism
- 11 - Regulation and responses

Year 3

Block

- 12 - Cardiovascular and Respiratory systems
- 13 - Haematology, Musculoskeletal systems, Dermatology
- 14 - Neurology, Psychiatry
- 15 - Abdomen and Breast

APPENDIX 4**Vocational Studies Learning Domains**

- Understanding people, patients and communities
- Communication skills
- Working with others
- Clinical skills
- Understanding the clinical context
- Information skills
- Evidence based medicine
- Finding out - research and experiment
- The right thing to do - legal, ethical and moral.

APPENDIX 5**Clinical Skills sessions****Year 1.**

Suturing
Limb Movement
Pulse & Blood Pressure
Chest & Heart
Basic Cardiopulmonary Resuscitation

Year 2

Musculoskeletal & Neurological
Cardiovascular & Respiratory
Gastrointestinal & Renal
Thyroid & Heart sounds

Year 3

Examination of peripheral vascular system
Use of the Ophthalmoscope
Assessment of Mental State
Examination of the Ear
Cranial Nerve Examination
Breast Examination on Manikin
Intermediate CPR

APPENDIX 6**Learning outcomes for a competent and reflective practitioner based on the three circle model****What the doctor is able to do****1. Clinical skills**

History taking
Physical examination
Interpretation of findings
Formulation of action plan to characterise problem and reach a diagnosis

2. Practical procedures

Cardiology
Dermatology
Endocrinology
Gastroenterology
Haematology
Musculo-skeletal
Nervous system
Ophthalmology
Otolaryngology
Renal/urology
Reproduction
Respiratory
Surgery
General

3. Patient investigation

General principles
Clinical
Imaging
Biochemical medicine
Haematology
Immunology
Microbiology
Pathology
Genetics

4. Patient management

General principles
Drugs
Surgery
Psychological
Physiotherapy
Radiotherapy
Social
Nutrition
Emergency medicine
Acute care
Chronic care
Rehabilitation
Alternative therapies
Patient referral

5. Health promotion and disease prevention

Recognition of causes of threats to health and individuals at risk
Implementation where appropriate of basics of prevention
Collaboration with other health professionals in health promotion and disease prevention

6. Communication

With patient
With relatives
With colleagues
With agencies
With media/press
Teaching
Managing
Patient advocacy
Mediation and negotiation
By telephone
In writing

7. Appropriate information handling skills

Patient records
Accessing data sources
Use of computers
Implementation of professional guidelines
Personal records (log books, portfolios)

How the doctor approaches their practice**8. Understanding of social, basic and clinical sciences and underlying principles**

Normal structure and function
Normal behaviour
The life cycle
Pathophysiology
Psychosocial model of illness
Pharmacology and clinical pharmacology
Public health medicine
Epidemiology
Preventive medicine and health promotion
Education
Health economics

9. Appropriate attitudes, ethical understanding and legal responsibilities

Attitudes
Understanding of ethical principles
Ethical standards
Legal responsibilities
Human rights issues
Respect for colleagues
Medicine in multicultural societies
Awareness of psychosocial issues
Awareness of economic issues
Acceptance of responsibility to contribute to the advance of medicine
Appropriate attitude to professional institutional and health service bodies

10. Appropriate decision making skills, and clinical reasoning and judgement

Clinical reasoning
Evidence-based medicine
Critical thinking
Research method
Statistical understanding
Creativity/resourcefulness
Coping with uncertainty
Prioritisation

The doctor as a professional

11. Role of the doctor within the health service

- Understanding of health care systems
- Understanding of clinical responsibilities and role of doctor
- Acceptance of code of conduct and required personal attributes
- Appreciation of doctor as researcher
- Appreciation of doctor as mentor or teacher
- Appreciation of doctor as manager including quality control
- Appreciation of doctor as member of multi-professional team and roles of other health care professionals

12. Personal development

- Self learner
- Self awareness
 - enquires into own competence
 - emotional awareness
 - self confidence
- Self regulation
 - self care
 - self control
 - adaptability to change
 - personal time management
- Motivation
 - achievement drive
 - commitment
 - initiative
- Career choice

APPENDIX 7**Educational objectives and clinical competencies
required by students by the end of the rotation****Knowledge and skills**

The clinical rotation aims to provide the student with -

1. An understanding of the biology of the normal life cycle - normal pregnancy, childhood development, the ageing process.
2. An awareness of the normal variation in findings on clinical examination.
3. An ability to communicate effectively, orally and in writing, with
 - patients
 - patients' relatives
 - colleagues
4. The ability to identify common or important clinical presentations in which the student should be able to recognise
 - the differential diagnosis
 - underlying pathology or disease mechanisms
 - relevant psychological, social, cultural, environmental or genetic factors
 - health promotion
 - disease prevention opportunities
 - the role of other health and non-health professions
 - prognosis
 - the psychological impact of the illness
 - the need to work co-operatively with patients and their relatives
5. An understanding of the investigation and/or management of common or important emergency, acute, chronic or terminal conditions.
6. An understanding of common diagnostic and therapeutic interventions, including
 - mechanisms of action
 - indications
 - side effects, precautions or interactions
 - impact upon the patient.

7. A list of basic clinical procedures which all graduates -
 - (a) must be able to perform
 - (b) should have seen before graduation
8. Knowledge of the principles and some experience of the practical applications of medical ethics.
9. Knowledge of the legal aspects of medical practice, including
 - informed consent
 - confidentiality
 - recording of notes
 - drug prescribing
 - certification under Mental Health legislation
 - autopsy permission
 - diagnosis and certifications of death (including when to contact the procurator fiscal / coroner)
 - cremation certificates.
 -

Clinical competencies

All students will be expected to have a range of communication and clinical examination skills which have been taught throughout the Curriculum (e.g. cardiovascular examination, ophthalmoscopy, auriscopy). In addition, however, there are a number of specific skills which will be required by the time of graduation. These can be divided into two groups.

1. Skills which should have been practised on patients, under supervision
 - Venepuncture
 - Finger prick blood sampling
 - Venous cannulation
 - Urinary bladder catheterisation
 - Performing and ECG
 - Peak expiratory flow rate
 - Preparation for a sterile procedure
 - Stick testing of urine and blood
 - Vaginal speculum examination
 - Anthropometry (height, weight, body mass index)

2. Competencies which should have been practised in a skills lab or classroom setting. Those marked with an asterisk may also be practised on patients under supervision if the opportunity arises -
- Cardiopulmonary resuscitation on a manikin
 - *Instructing a patient on inhaler use
 - Medico-legal issues (Valid consent, drug prescription, death certification)
 - Calculation of drug dosage
 - Making up IV drug for infusion
 - Familiarity with a syringe pump for drug administration
 - Safe administration of O₂ therapy
 - Correct use of nebuliser
 - Local anaesthesia
 - Arterial blood sampling
 - *Insertion of a nasogastric tube
 - Endotracheal intubation
 - * Taking a cervical smear

GMC attitudinal objectives

At the end of the course of undergraduate medical education the student will have acquired and will demonstrate attitudes essential to the practice of medicine, including

- (a) Respect for patients and colleagues that encompasses, without prejudice, diversity of background and opportunity, language, culture and way of life.
- (b) The recognition of patients' right in all respects, and particularly in regard to confidentiality and informed consent.
- (c) Approaches to learning that are based on curiosity and the exploration of knowledge rather than on its passive acquisition, and that will be retained throughout professional life.
- (d) Ability to cope with uncertainty;
- (e) Awareness of the moral and ethical responsibilities involved in individual patient care and in the provision of care to populations of patients; such awareness must be developed early in the course;
- (f) Awareness of the need to ensure that the highest possible quality of patient care must always be provided;

- (g) Development of capacity for self-audit and for the participation in the peer-review process;
- (h) Awareness of personal limitations, a willingness to seek help when necessary, and ability to work effectively as a member of a team;
- (i) Willingness to use his or her professional capabilities to contribute to community as well as to individual patient welfare by the practice of preventative medicine and the encouragement of health promotion;
- (j) Ability to adapt to change;
- (k) Awareness of the need for continuing professional development allied to the process of continuing medical education, in order to ensure that high levels of clinical competence and knowledge are maintained;
- (l) Acceptance of the responsibility to contribute as far as possible to the advancement of medical knowledge in order to benefit medical practice and further improve the quality of patient care.

APPENDIX 8**Master List of Clinical Presentations**

Abdominal mass

- Full bladder
- Hepatomegaly
- Pregnancy
- Inflammatory mass
- Intra abdominal aneurysm
- Ovarian tumour
- Splenomegaly
- Abdominal tumour
- Uterine fibroids

Abdominal pain, generalised

- Acute pancreatitis
- Intestinal obstruction
- Mesenteric infarction
- Pregnancy
- Psychogenic
- Recurrent abdominal pain of childhood
- Ruptured aortic aneurysm
- Viscus perforation

Abdominal pain, lower

- Appendicitis
- Acute urinary retention
- Acute painful inflammatory disease
- Chronic pelvic pain
- Diverticular disease
- Irritable bowel syndrome
- Ovarian cysts
- Pain of gynaecological origin

Abdominal pain, upper

- Biliary Disease
- Pancreatitis
- Peptic Ulcer

Abdominal swelling

- Ascitic fluid
- Constipation
- Fat
- Foetus
- Obstructed bowel

Albuminuria

- Microalbuminuria
- Nephrotic syndrome
- Pre eclampsia

Ankle Swelling

- Cellulitis
- Congestive Cardiac Failure
- DVT
- Hypoalbuminaemia
- Lymphoedema
- Pregnancy
- Varicose veins
- Trauma

Ano-rectal pain

- Anal carcinoma
- Anal fissure
- Haemorrhoids
- Peri-anal abscess

Anxiety Anxiety/Panic disorder

- Personality disorder
- Physical cause e.g. Thyroid
- Situation specific e.g. Phobia

Back pain

- Inflammatory spinal disease
- Malignancy
- Mechanical back pain
- Osteoarthritis
- Prolapsed intervertebral disc
- Trauma
- Abdominal aortic aneurysm

Balance disorder

- Acute labyrinthitis
- Cerebellar disorder
- Sensory ataxia

Bed wetting

- Chronic renal failure
- Diabetes mellitus
- Primary nocturnal enuresis
- Urinary tract infection

Bleeding, post menopausal

- Atrophic vaginitis
- Endometrial cancer
- Hormone replacement therapy

Blindness, acute

- Amaurosis fugax
- Central retinal artery occlusion
- Central retinal vein occlusion
- Retinal detachment

Blood pressure, high

- Idiopathic hypertension
- Pregnancy induced hypertension
- Secondary hypertension
- White coat hypertension

Blood pressure, low

- Hypoadrenalism
- Postural hypotension
- Shock

Body image, distorted

- Delusional disorder
- Eating disorders

Bowel habit, altered

- GI Infection
- Colorectal neoplasm
- Diverticular disease
- Inflammatory bowel disease
- Irritable bowel syndrome
- Malabsorption
- Medication

Breast lump

- Benign breast cyst
- Breast abscess
- Breast carcinoma
- Fibroadenoma
- Fibrocystic disease
- Traumatic fat necrosis

Breast pain

- Hormonally based breast pain

Breathlessness, acute

- Asthma
- Left ventricular failure
- Pneumothorax
- Pulmonary thromboembolism
- Stridor
- Superior vena cava obstruction

Breathlessness, chronic

- Anaemia
- Chronic obstructive airways disease
- Left ventricular failure
- Pleural effusion
- Pulmonary fibrosis

Bruising

- Coagulation disorders
- Local trauma
- Thrombocytopaenia
- Anticoagulant therapy

Cardio respiratory arrest

- Acute respiratory failure
- Brain damage
- Brainstem death
- Cardiac arrest

Central chest pain

- Angina
- Aortic dissection
- Gastrointestinal pain
- Musculo skeletal pain
- Myocardial infarction
- Pericarditis

Cervical smear, abnormal
Cancer of the cervix
Cervical dyskaryosis

Confusion acute (History from relative / witness)
Any acute illness e.g. chest infection or heart failure
Brain metastases
Hypercalcaemia
Toxins / drugs

Consciousness, sudden loss of
Cardiac arrhythmias
Epilepsy
Vaso-vagal

Constipation
Anal fissure
Hirschprung's disease
Hypothyroidism
Inappropriate diet
Large bowel obstruction
Opioid induced
Psychogenic pain

Cough, chronic
Bronchiectasis
Bronchopulmonary dysplasia
Chronic infection (TB)
Chronic obstructive airways disease
Neoplasm

Deafness
Acoustic Neuroma
Chronic suppurating otitis media
Otosclerosis
Sensori-neural loss
Wax

Development, delayed

- Cerebral palsy
- Chronic disease
- Inborn errors of metabolism

Dialysis, patient on

- Continuous ambulatory peritoneal dialysis,
(C.A.P.D.)
- Haemodialysis
- Renal transplantation

Dizziness

- Acute viral labyrinthitis
- Postural hypotension
- Vertebrobasilar insufficiency

Dysmorphism

- Down's syndrome
- Turner's syndrome

Dysuria

- Bladder tumour
- Stones
- Urinary tract infection

Ear, discharging

- Chronic suppurating otitis media
- Foreign body
- Otitis externa

Ear, painful

- Acute otitis externa
- Acute otitis media

Expistaxis

- Bleeding disorders
- Polyps / tumours
- Trauma

Eye injury

- Chemical and radiation injury
- Corneal abrasion
- Penetrating & non-penetrating trauma

Eye, acute painful red

- Acute glaucoma
- Acute iritis
- Allergic eye disease
- Collagen vascular disease
- Conjunctivitis

Falls, recurrent

Chronic neurological disorder, e.g. Parkinson's disease

- Dementia
- Postural hypotension
- Visual impairment

Fatigue, chronic

- Anaemia
- Chronic disease
- Hypothyroidism
- Leukaemia
- Post viral syndrome

Fever

- Intra abdominal sepsis
- Meningitis
- Osteomyelitis
- Septicaemia
- Tonsillitis
- Urinary tract infection

Fever, unexplained

- Infection
- Malignancy
- Collagen diseases
- Factitious fever

Fits / faints / funny turns

- Seizures
- Febrile convulsion
- Hypoglycaemia
- Neuro-degenerative disorders
- Space occupying lesions

Genital discharge in men
Chlamydia
Gonorrhoea
Non Gonococcal Urethritis

Genital skin lumps
Condylomata lata
Genital warts
Herpes viral infection
Molluscum contagiosum
Physiological papillae
Skin tags

Genital ulceration
Genital herpes
Syphilis
Carcinoma

Haematemesis / melaena
Bleeding disorder
Gastritis
Gastro-oesophageal ulcer
Oesophageal varices
Peptic ulcer disease

Haematuria
Bladder tumour
Glomerulonephritis
Renal tract calculus
Renal tract injury
Urinary tract infection

Haemoptysis
Bronchial carcinoma
Coagulation disorder
Infection
PTE

Haemorrhage, postpartum
Atonic uterus
Retained placenta
Scar rupture

Hands, pain after cold exposure
Raynaud's disease

Head injury
Concussion
Extradural haemorrhage
Intracerebral haemorrhage / contusions
Subdural haematoma

Headache
Meningitis
Migraine
Raised intracranial pressure
Sub-arachnoid haemorrhage
Temporal arteritis
Tension headache

Hearing voices / odd ideas
Alcoholic hallucinosis
Dementia
Depression
Hallucinations
Psychosis
Schizophrenia
Puerperal psychosis

Hip pain
Fracture hip
Lumbar spine disorder
Osteoarthritis
Perthes disease
Referred spinal pain
Slipped epiphysis

HIV, A person worried about
HIV - screening and counselling

Hoarseness
Bronchial carcinoma
Laryngeal tumour
Recurrent laryngeal nerve palsy
Upper respiratory tract infection

Hyperactivity

- Behavioural
- Drug and food reactions

I can't stop drinking / taking drugs

- Alcohol misuse / dependence
- Consider another psychiatric diagnosis
 - e.g. Personality Disorder or chronic depression
- Drug misuse / dependence

I keep washing my hands over and over

- Obsessive compulsive disorder
- Psychosis e.g. schizophrenia

Immobility, chronic

- Arthritis
- Chronic arthropathy
- Chronic dyspnoea
- Dementia
- Previous fractures
- Stroke

Impotence

- Diabetes mellitus
- Drug therapy
- Pituitary disease
- Post surgical
- Psychogenic
- Vascular disease

Urinary incontinence

- Stress incontinence
- Bladder instability
- Child - enuresis
- Multiple sclerosis
- Urinary tract infection

Infant, sick

- Low birthweight infant (IUGR)
- Neonatal asphyxia
- Neonatal infection
- Neonatal jaundice
- Prematurity

Inguinal / scrotal lump

- Epididymo - orchitis
- Hernia
- Hydrocele
- Lymphadenopathy
- Testicular tumour
- Malignancy

Injury

- Child abuse
- Fractures
- Malnutrition
- Poisoning (accidental & intentional)

Intrauterine growth retardation

- Congenital abnormality
- Foetal distress
- Placental insufficiency
- Pregnancy induced hypertension

Involuntary movements

- Benign essential tremor
- Huntington's disease
- Parkinson's disease

Jaundice

- Biliary Tract Obstruction (Intra & extra hepatic)
- Cirrhosis
- Haemolytic disease
- Viral Hepatitis
- Neonatal

Joint, single, acutely painful

- Gout
- Reactive arthritis
- Septic arthritis
- Trauma

I'll kill myself

- Association with physical illness and disability
- Depression

Labour, problems in

- Caesarean section
- Cephalopelvic disproportion
- Dysfunctional labour
- Malpresentation

Large for dates

- Diabetes Mellitus
- Hydatiform mole
- Multiple pregnancy
- Polyhydramnios

Leg pain on walking

- Arthritis
- Peripheral vascular disease

Loin pain

- Acute renal infection (pyelonephritis)
- Adult Polycystic Kidney Disease (APKD)
- Renal calculus

Low mood, tearfulness

- Adjustment reaction
- Depression
- Personality disorder
- Physical illness

Lymphadenopathy

- Glandular fever
- Leukaemia
- Lymphomas
- Non-haematological malignancies

Memory loss, progressive (history from relative / witness)

- Alzheimer's disease
- Diffuse Lewy body disease
- Vascular dementia

Menopausal symptoms

- Hormone therapy

Menstrual disorders

- Bleeding diatheses
- Dysfunctional uterine bleeding
- Dysmenorrhoea
- Endocrine disorders
- Fibroids
- Pre-menstrual syndrome

Micturation, difficult

- Drugs
- Prostatic hypertrophy (benign or malignant)
- Spinal cord compression

Motor weakness

- Facial weakness, e.g. due to Bell's palsy
- Hemiparesis due to stroke
- Paraplegia due to spinal cord compression
- Peripheral neuropathy

Neck lump

- Branchial cyst
- Goitre
- Lymphadenopathy
- Salivary gland swellings

Neck pain

- Cervical spondylosis
- Cervical torticollis
- Thyroiditis
- Trauma

Nipple discharge

- Breast carcinoma
- Duct ectasia
- Duct papilloma
- Galactorrhoea
- Prolactinoma

Oligomenorrhoea / amenorrhoea

Eating disorder
Endocrine abnormality (polycystic ovarian syndrome)
Premature menopause

Palpitations

Anxiety
Dysrhythmias

Pelvic mass

Bowel cancer
Constipation
Fibroids
Ovarian cancer /cysts
Prostate cancer
Bladder cancer
Pregnancy
Uterine cancer

Physical symptoms in absence of physical findings

Dissociative disorders
Factitious disorders
Malingering (not a psychiatric diagnosis)
Somatoform disorders

Pleuritic pain

Pneumonia
Pneumothorax
Pulmonary thromboembolism

Polyarthrititis

Osteoarthritis
Psoriatic arthritis
Rheumatoid arthritis
Systemic lupus erythematosus

Polyuria

Chronic renal failure
Diabetes mellitus
Diuretic therapy
Hypercalcaemia

Pregnancy, pain in

- Amnionitis
- Early pregnancy - ectopic
- Early pregnancy - miscarriage
- Late pregnancy - abruption
- Late pregnancy - labour
- Surgical causes
- Urinary tract infection

Pregnancy, medical problems in

- Chronic renal failure
- Collagen diseases
- Diabetes mellitus
- Heart failure
- Pregnancy induced hypertension / eclampsia
- Urinary tract infection

Pregnancy, normal

- Analgesia in labour
- Care of normally pregnant patient
- Counselling for pregnancy loss
- Prenatal screening
- Trauma in pregnancy

Pregnancy, requesting termination of

- Congenital abnormality
- Unwanted pregnancy

Rectal blood loss

- Bleeding disorder
- Colorectal cancer
- Colorectal polyps
- Diverticular disease
- Haemorrhoids
- Inflammatory bowel disease

Seeing things

- Acute and chronic organic brain syndrome

Serum creatinine, chance finding of raised level

- Chronic renal failure

Shocked patient

- Anaphylactic - transfusion reaction
- Burns: thermal, electrical & chemical
- Cardiogenic
- Hypovolaemia
- Multiorgan failure
- Septic

Shoulder, painful

- Capsulitis
- Dislocation
- Fracture / trauma
- Subphrenic abscess

Skin nodules

- Erythema nodosum
- Molluscum contagiosum
- Simple warts

Skin - pigmented lesions of

- Benign pigmented lesions
- Birth marks
- Melanoma

Skin rashes

- Atopic eczema
- Connective tissue disorders
- Contact dermatitis
- Drug induced
- Infectious diseases of childhood
- Napkin dermatitis
- Pityriasis rosea
- Psoriasis

Skin spots

- Acne vulgaris
- Impetigo
- Pustules and carbuncles

Skin ulcers

- Basal cell carcinoma
- Herpetic lesions
- Squamous carcinoma
- Vascular ulcers

Speech disturbance

- Dysarthria
- Dysphasia e.g. due to stroke
- Dysphonia e.g. due to vocal cord paresis

Stature, short

- Chronic illness in childhood
- Familial
- Growth hormone deficiency

Stridor

- Croup
- Extrinsic compression
- Foreign body

Sub-fertility

- Ovulatory problems
- Tubal pelvic disease
- Oligospermia
- Psycho-sexual disorders

Swallowing, difficult

- Anxiety
- Benign stricture
- Neurological causes
- Oesophageal carcinoma
- Stroke

Thrive, failure to

- Chronic infections
- Chronic lung disease (CF & BPD)
- Coeliac disease
- Congenital heart disease
- Inadequate dietary intake

Tingling / numbness

Hyperventilation

Nerve root / peripheral nerve compression

Peripheral neuropathy

Unconscious patient

Cerebral hypoperfusion

Cerebro vascular accident

Drug / alcohol overdose

Endocrine - hypoglycaemia / hyperglycaemia

Trauma

Urine, reduced output

Postrenal oliguria

Prerenal oliguria

Renal oliguria

Vaginal bleeding in pregnancy

Bleeding in early pregnancy - miscarriage / ectopic pregnancy

Bleeding in late pregnancy - abruption

Bleeding in late pregnancy - placenta praevia

Vaginal discharge

Acute pelvic pain

Cervicitis

Physiological

Sexually transmitted disease

Vision, double

Cranial nerve problems

Muscular problems

Visual acuity, reduced

Age related maculopathy

Cataract

Diabetes mellitus

Glaucoma

Presbyopia

Visual field, defect

- Age related macular degeneration
- Glaucoma
- Pituitary and other intracranial tumours
- Stroke

Vomiting

- Acute gastritis
- Drugs
- Infective gastro-enteritis
- Intestinal obstruction
- Pancreatitis
- Pregnancy
- Raised intracranial pressure

Weals

- Blistering conditions
- Stings
- Urticaria

Weight gain

- Hypothyroidism
- Obesity
- Oedema
- Diabetes mellitus

Weight loss

- Hyperthyroidism
- Infection
- Malabsorption
- Neoplasm
- Psychogenic

Wheeze

- Asthma
- Cystic fibrosis
- Gastro-oesophageal reflux
- Inhaled foreign body
- Upper respiratory tract infection

TRAUMA MANAGEMENT ISSUES

Acute Head Injury (e.g. Assault of intoxicated patient)

Admission and discharge policy

Follow up arrangements

Initial assessment of the "unco-operative" patient

Psychological sequelae

Relevant investigations - CT, x-rays

Ward management / observational details

Facial injury (e.g. accidental kick in cheek during karate)

CT scanning

Recognise malar fractures including blow out fractures

Relevant eye examination

Surgery and follow up

x-ray interpretation

Multiply injured patient (e.g. pedestrian in RTA)

Definitive care - surgical procedures

Initial assessment in accident and emergency

Pre-hospital care including first aid

Primary survey, (A,B,C,D,E) and resuscitation

Secondary survey - head to toe examination

Transfer and transport principles

Spinal injury (e.g. fall downstairs producing fractured cervical spine)

Application of collar and spinal board

Common types of fracture and radiographic appearance

Imaging in Major Trunk / head injury

Immediate safe management

Log rolling

Referral to and management by Spinal Injuries Unit

Trauma, penetrating (e.g. stab injury to the chest)

Emergency room thoracotomy

Epidemiology "the Glasgow scene"

How to recognise and treat haemopneumothorax

Investigative techniques: C.T.

Investigative techniques: Echocardiograph

Investigative techniques: Pericardiocentesis

Peritoneal lavage

Pitfalls in diagnosis

The initial assessment

APPENDIX 9**Content of Academic Days**

1. Genetics and disease
2. Psychosocial aspects of disease
3. Infectious diseases
4. Occupation and disease
5. Gender and racial issues in medicine
6. Will you live to be 100?
7. Screening
8. WOSCOPS and beyond
9. Palliative Care
10. Medico-legal issues
11. Diseases of lifestyle
12. Rationing health care
13. Ethics and clinical practice

APPENDIX 10**GMC CURRICULAR THEMES**

- The scientific basis of practice
- Treatment
- Clinical and practical skills
- Communication skills
- Teaching skills
- General skills
- The working environment
- Medico-legal and ethical issues
- Disability and rehabilitation
- The health of the public
- The individual in society

APPENDIX 11**Suggested format of teaching in the
core clinical blocks**

- Clinical teaching (1-2 sessions per week)
 - A one-hour session with a designated Educational supervisor
 - Two, two-hour sessions of clinical teaching (maximum of six students per group)
 -
- Supervised Clinical experience (2-4 sessions per week)
 - Outpatient and ward rounds
- Community experience (1 session per week)
- Plenary/Fixed resource session (1 per week)
- Self-directed learning (4-5 sessions per week)
 - PBL
 - Portfolio cases
 - Finding accessing patients
 - CAL packages etc.

Clinical Skills sessions are also available, which are organised centrally

- Year 4
 - Intravenous skills
 - Catheterisation
 - Pharmacology
- Year 5
 - Advance Life Support
 - Medical Cardiology
 - Radiology
 - Radial artery puncture

**TEXT BOUND INTO
THE SPINE**

University of Glasgow Medical School

Years 4 & 5 Student Assessment

NAME _____

MATRIC NO. _____

		Highly Satisfactory	Satisfactory	Adequate	Borderline Pass	Borderline Fail	Unsatisfactory
A	Attendance & reliability						
B	Ability to manage own learning						
C	Relationship with colleagues						
D	Knowledge						
E	Clinical Competence: <i>History taking</i>						
F	Clinical Competence: <i>Clinical examination skills</i>						
G	Clinical competence: <i>Clinical judgement</i>						
H	Communication skills						
I	Practical procedures						
J	Portfolio cases						
K	No. & Standard of Portfolio Cases						
L	Overall Rating						

Consultant's Signature

Student's Signature

Consultant's Name (please print)

Department and Address

Date Completed

APPENDIX 13

Routemap of Ethics Teaching in the Glasgow Curriculum

INTRODUCTION

Why Study Ethics?

Doctors regularly encounter problems that require difficult decisions. There are times when the best choice of action isn't obvious. Times when choices, beliefs and values do not coincide with those of others. Even times when conflicts emerge with colleagues, other professionals, superiors, accepted guidelines and, most significantly with patients.

Ordinarily, we tend to rely on our own intuitions and beliefs to settle these difficulties, but they may be what is causing the conflict in the first place. So we need to look elsewhere.

The purposes of a course on the ethics of health care are to improve patient care by:

- Creating awareness of other perspectives.
- Sensitising us to our reasons for our beliefs.
- Enabling conclusions which are aware of both of the above.
- Developing skills in constructing reasoned arguments.
- Introducing a variety of ethically sensitive issues relevant to medicine.

In the process of this you will encounter practical cases on issues ranging from euthanasia and abortion, to informed consent and truth-telling. Questions will arise such as the ethical acceptability of ante-natal screening for Down's syndrome, and whether surrogacy is an acceptable treatment for infertility. Most especially the conflict between the rights of individuals and the best interests of the community, will be contrasted with the physician's desire to heal that rift by providing care for individual patients while being sensitive to the need to make best use of scarce resources. Arguments will be presented to provide balanced perspectives of the positions involved. This means that few, if any, fixed answers will be given. Instead, you will be provided with different views and some tools for reaching your own conclusions supported by arguments, counter-arguments and analyses.

As it stands today we have no absolutes for handling difficult decisions; there are no clear sign-posts and no true way. They wouldn't be 'difficult' decisions if we did have formula answers for them. But that means we need to find ways of coping with the difficulties that do arise, and the discussions in Vocational studies Right Thing To Do sessions will help with that.

Every session will begin with case studies, which will provide the backdrop for drawing out discussions about general principles and theories. Different perspectives will be considered and study or discussion questions will be provided. This is meant to encourage you to pursue the issue in greater depth and in conversation with colleagues and people not involved in professional health-care delivery. The more you debate and challenge your opinions the stronger they will become, and more confident you will be when coping with uncertainty.

YEAR 1

◆ BLOCK 1 - WEEK 0: PLENARY - THE CORE VALUES OF MEDICINE

• Aim:

To construct a draft set of core values, analogous to the GMC statement on Duties of a Doctor.

• Objective:

Compose a first draft of core values of medicine.

• Activities:

Students break into groups and given 20 minutes to discuss "What is a good doctor good at?" and report their conclusions at a plenary. The exercise is an ongoing procedure.

• Details:

1hour, large plenary, led by course designer.

◆ BLOCK 1 - WEEKENDS 2-6 RESIDENTIAL WEEKEND - MORAL IMAGINATION

• Objectives:

- Discuss the significance of the moral imagination in health care delivery and its advantages and disadvantages for patients and practitioners.

- Critically assess the concepts of sympathy, empathy and moral imagination as they relate to health care delivery.

- Perform exercises that encourage moral imagination.

• Activities:

Groups of 60 take part in moral imagination workshop. Exercises may include developing and writing an "autobiography" as a fictional character based on a theatrical monologue.

◆ BLOCK 1 - WEEK 5: VS GROUPS - FUTILITY V UTILITY: WHAT IS THE AIM OF MEDICINE?

• Objectives:

- formulate and justify current personal perceptions of the nature of medical practice and the role of the doctor; and relate these to other commonly held perceptions.

- recognise that there is a difference between useful and futile treatment.

- re-evaluate the core values of medicine established in week 0 in light of this discussion.

• Activities:

Discussion about the aims of medicine, prompted by examples of different models of care e.g. paternalistic, patient-centered, curative, palliative etc. Also, notions regarding utility and futility are discussed. Cases are drawn from current media events.

◆ **BLOCK 2 - WEEK 6: PLENARY - MEDICAL, LEGAL, & ETHICAL ISSUES RELATED TO ALCOHOL**

● **Objectives:**

- summarise the medicolegal responsibilities and professional guidelines regarding alcohol and emergency care.
- argue from the different viewpoints of the protagonists of the case scenario.
- consider the physical, social and psychological perspectives of alcohol use and abuse.

● **Activities:**

Students discuss the testimonials given by a panel including A&E consultant, SHO and nurse; forensic GP; and the patient and family member present. This complements the PBL case on issues relating to a road traffic accident with a drunk driver, and following the A&E visit. Covered in the plenary are the legal requirements for treating drunk drivers and potential conflicts concerning confidentiality and the doctor-patient relationship.

◆ **BLOCK 2 - WEEK 6: VS GROUPS - WHO DECIDES? AUTONOMY AND CONSENT**

● **Objectives:**

- characterise the concept of autonomy, and show how it is relevant to decision making in health care.
- discuss competence as it relates to autonomy.
- examine the ways in which competence is related to the person's capacity for autonomous decision making.
- prepare questions on legal aspects of autonomy and competence for the fixed resource session with a legal expert.

● **Activities:**

Discussion of whether a drunk person can consent to treatment, introducing issues of competence and consent. Legal tests of competence are considered e.g. *Gillick* and *Canterbury v. Spence*.

◆ **BLOCK 2 - WEEK 9: PLENARY-AUTONOMY AND CONSENT: THE LEGAL PERSPECTIVE**

● **Objectives:**

- state the legal definitions of autonomy and competence.
- analyse and list some of the differences between the legal and the philosophical characterisations of autonomy and competence.
- formulate answers to the questions set in vocational studies session 9.

● **Activities:**

Plenary with a member of the MDDUS regarding the legal aspects of autonomy and consent.

◆ **BLOCK 2 - WEEK 10: PBL - ORGAN DONATION**

The scenario introduces the issue of organ donorship and elective ventilation.

◆ **BLOCK 3 - WEEK 11: VS GROUPS- PATIENT RECORDS**

● **Objectives:**

- examine the role of confidentiality in record keeping.
- identify who has the legal right to see records, when, and why.
- determine the advantages and disadvantages of patient held records.
- assess the quality of information in medical records.

● **Activities:**

Following exercise reviewing case-notes of diabetic patients, discussion concerning rights and responsibilities in relation to access to medical records. Discussion of the impact of the Patient Information Act.

◆ **BLOCK 3 - WEEK 12 VS VULNERABILITIES-PATIENTS'AND DOCTORS': (SESSION SHARED LIFE HISTORY PROJECT FIRST HOME VISIT):**

● **Objectives:**

- to examine the significance of vulnerabilities in health care.
- be able to identify and appreciate the ways in which a patient is vulnerable.
- be able to identify and appreciate the ways in which a doctor may be vulnerable.
- be able to state ways in which patients and doctors may cope with or eliminate these vulnerabilities.

● **Activities:**

Following a visit to a patient at home, debriefing discussion about vulnerability. Students are encouraged to use their own experiences of vulnerability in patients' homes, to empathise with the vulnerability experienced by patients in the equally unfamiliar setting of the hospital or surgery.

◆ **BLOCK 3 - WEEK 13 VS GROUPS - INFORMED CONSENT: (SESSION SHARED WITH SCIENCE IN MEDICINE THE PLACEBO EFFECTS)**

● **Objectives:**

- Discuss the nature, relevance and implications of informed consent.
- Explain the significance of informed consent in research.
- Describe the difference between positive and negative rights.
- Describe the difference between active and passive duties.

● **Activities:**

Small group discussion of issues related to seeking informed consent for research and the responsibilities this raises in view of protection of patient rights. The role of the Research Ethics Committee is also considered.

◆ **BLOCK 5 - WEEK 22: VS GROUPS -"DOCTOR, I DON'T WANT HER TO KNOW": DISCLOSURE AND CONFIDENTIALITY**

● **Objectives:**

- identify who is involved in the statement: *"Doctor, I don't want her to know"*
- argue for and against the importance of information sharing
- know why truth-telling and confidentiality are essential to personal identity and patient autonomy
- analyse and state reasons for the importance of confidentiality
- grasp the impact of patient relatives on truth-telling and confidentiality
- appreciate why a doctor may consider breaking confidentiality
- know the GMC guidelines on subjects covered in this session.

● **Activities:**

Discussion prompted by example of relatives asking doctor not to tell the patient her diagnosis, and of a patient asking her doctor not to disclose information to her family.

◆ **BLOCK 5 - WEEK 25: VS GROUPS – ABORTION: (SESSION SHARED WITH COMMUNICATION SKILLS)**

● **Objectives:**

- Observe & take part in role-plays with feedback on communication skills.
- Discuss some of the ethical issues related to the abortion debate including:
Foetal rights. Bodily integrity
Mothers' rights and responsibilities Doctrine of the double-effect
Fathers' rights and responsibilities Duties of the doctor
The philosophical concept of personhood
- Identify this session's key terms and write the glossary inserts.

● **Activities:**

Students participate in role played case studies in which abortion is the main focus. This is followed by discussion of the topic including examination of the arguments for and against abortion.

YEAR TWO

◆ BLOCK 7 - WEEK 4: VS GROUPS - *INFERTILITY*

● Objectives:

- Review and discuss the ethical implications of fertility treatment and its relationship to rationing.
- List the relevant laws and legal obligations concerning infertility and treatment.
- Critically assess the case issues related to infertility that have received media attention in the past year.

● Activities:

A list of cases of patients requesting IVF is supplied. Students are asked to discuss their individual entitlement for funding and set a prioritisation list. This is followed by discussion of the legal and ethical aspects of options for treating infertility.

◆ BLOCK 7 - WEEK 5: PLENARY - *RATIONING*

● Objectives:

- Know the ethical information on the concept of rationing.
- Know how these relate to the issue of infertility.

● Activities:

Students explore the reasons for rationing, prioritisation and deprivation in the NHS and on the international level. Considerations regarding *ethically and socially responsible means of priority setting are described.*

◆ BLOCK 7 - WEEK 3: VS GROUPS - SCREENING FOR DOWN'S SYNDROME: (SESSION SHARED WITH COMMUNICATION SKILLS)

● Objectives:

- Review and discuss the legal and ethical aspects of screening.
- Describe how these relate to Down's Syndrome.
- Prepare for debate on value of life in week 35.

● Activities:

Case studies are given for role-play involving students. These raise issues regarding screening for disability and the ethical issues it raises.

◆ BLOCK 7 - WEEK 4: PLENARY- THE VALUE OF A LIFE

● Objectives:

- Critically consider two sides of the "value of a life" debate.
- Review the issues discussed in RTTD over the past three weeks.
- Recognise the arguments regarding quality of life.

● Activities:

Discussion focuses on the notion that life may be of inherent value *qua* life, or can be determined to be of relative value. Questions regarding how such decisions are made, and who ought to make them, follow.

◆ BLOCK 8 - WEEK 7: PLENARY - FAMILY LAW, FAMILY ETHICS**• Objectives:**

Discuss the legal and ethical issues related to medicine and the family.

• Activities:

Consideration of the special legal and ethical issues related to children and the elderly are made, with reference to the role of the family.

◆ BLOCK 11 - WEEK 28: PLENARY - RACE AND GENDER IN MEDICAL LAW & ETHICS**• Objectives:**

Discuss the legal and ethical issues of race and gender as they relate to medicine.

• Activities:

This is an interactive plenary led by recognised experts in the field.

Students are asked to consider the relevance of gender and ethnicity to lifestyle choices and medical practice.

YEAR THREE

◆ BLOCK 11: PLENARY - OATHS, CODES AND REGULATIONS

● Objectives

- Understand and appreciate the burden of responsibility of being a self-regulating profession.
- Know the main professional obligations of doctors in the United Kingdom as endorsed by the institutions which regulate or influence medical practice particularly those specified by the General Medical Council.

● Activities

An invited speaker will highlight the codes relevant to medical practice and discuss the responsibilities associated with self-regulation.

● Details

1 hour, plenary, led by guest speaker.

◆ BLOCK 11: PLENARY-EUTHANASIA AND QUALITY OF LIFE

● Objectives

- Recognise the ethical and legal arguments related to euthanasia.
- Describe the role of palliative care in quality of life.
- Recognise when there is a need to "shift gears" from active pursuit of cure to management of symptoms.

● Activities

Discussion of a case study regarding the need to recognise the change in the pattern of illness that demands different responses in treatment. Students will be asked to consider the effects this has on the medical team.

● Details

1 hour, plenary, led by course designer.

◆ BLOCK 11: FRS WORKSHOP - EUTHANASIA AND QUALITY OF LIFE

● Objectives:

Be aware of the ethical arguments related to withholding and withdrawing life prolonging treatment, and explain the difference between active and passive euthanasia.

Cite the ethical arguments related to non-provision of life prolonging treatment and the duty of care: killing and letting die, double effect, ordinary and extraordinary means.

Know the ethical and legal arguments related to euthanasia and assisted suicide.

● Activities:

Small group workshop including video case study to raise discussion of the issues mentioned above.

● Details

1 hour, plenary, led by course designer.

◆ BLOCK 13: PLENARY-DEALING WITH MEDICAL MISTAKES**● Objectives:**

Know the relevant elements of malpractice.

Know the relevant elements of negligence, the law of negligence, NHS complaints and disciplinary procedures.

Understand and appreciate the responsibility of self-regulation.

Be able to recognise unethical and unsafe practice in medicine.

Know the relevant elements of whistleblowing.

● Activities:

A representative of the MDDUS will lead this session. Students will discuss the importance of "responding appropriately to clinical mistakes: [including the practitioner's] personal, legal and ethical responsibilities."

● Details:

1 hour, plenary, led by representative from the MDDUS.

YEARS FOUR AND FIVE

Each of these sessions includes objectives directly concerned with ethics or law.

1. Genetics and disease Dr D. Wilcox

Will contain some reference to ethics.

2. Psychosocial aspects of disease Dr K. Millar

Will contain some reference to ethics.

3. Infectious disease Dr D. Kennedy

Could be relevant in disease prevention and outbreak management.

4. Occupation and disease Dr E. Macdonald

Could include RTTD relevance in terms of state support and conflicts of interest inherent in occupational medicine.

5. Gender and racial issues in medicine Dr Kohli & Ms Laughlin

Ethical issues will be raised.

6. Will you live to be 100? Prof. DJ Stott

Raises ethical questions about the relevance of age to treatment and quality of life. Also, economics will be discussed including rationing questions.

7. Screening Drs McIlwain & Dobson

Ethical and economic considerations will be raised.

8. WOSCOPS and beyond Prof Shepherd

Ethics of RCT to be revisited here.

9. Palliative Care Prof Welsh

The euthanasia debate will be revisited here.

10. Medico-legal issues Dr J. Rodger

Informed consent, confidentiality, organ donation and DVLA issues will be revisited here.

11. Diseases of lifestyle Dr A. Tannahill

Raises relevant ethical issues concerning utility, autonomy and beneficence.

12. Rationing health care Dr H. Burns

Ethical issues will be revisited here.

13. Ethics and clinical practice Dr L. Schwartz

Students will consider the reality of applying ethical decision models in practice.

◆ YEAR 4 OR 5: SMALL GROUP WORKSHOP - *INTER-PROFESSIONAL EDUCATION*

• Aims:

- To explore means of working together within the multidisciplinary team that would ensure the best interests of the patient.
- To explore expectations and increase understanding of the unique and collaborative roles of nurses and doctors.
- To discuss ethical issues that are raised by team or multidisciplinary approaches to care.

• Objectives:

- Discuss some of the core principles of bioethics including: consent; confidentiality; respect for patient autonomy; utility (appropriate use of skills and resources); respect for skills and experience of professional colleagues
- Describe strategies for coping with uncertainty
- Discuss issues with colleagues within the team
- Discuss issues with colleagues outwith the team
- Assess the value of their own contribution and that of their colleagues to the effects of working as a team within this case scenario.

Activities:

In years 4 or 5 the General Practice attachment includes 1 department based Inter-professional Education session with final year students from the School of Nursing and Midwifery Studies. Through role-play and case studies, students discuss ethical and legal issues related to working in teams in community care.

• Details

2 hour, small group workshop, led by lecturers from department of General Practice and School of Nursing and Midwifery Studies.
(Links with Working with Others Routemap)

◆ YEAR 4 OR 5: SMALL GROUP WORKSHOP - *ETHICS IN GENERAL PRACTICE*

Group discussion of ethical issues brought by students in general practice attachments.

• Details

1hour, department based, small group work, led by GP clinical senior tutor.

APPENDIX 14 Range of assessment tools for ethics learning in the new curriculum

Element	Assessment Tools		For Use at Entry to Medical School		
	Used Now at Glasgow		For use at mid-point	For use before Graduation.	
Historical Background					
Past					
Current	X				
Future					
Medical Anthropology					
Power of Health Care Professionals			X	X	Portfolio
What are these?			X		Portfolio X Portfolio
How should they be used?					Portfolio MEQ
Medicine in multicultural societies		X			Portfolio MEQ
Relationships of doctors with: (1) individuals, (2) communities and (3) state.		MEQ		X	X
Moral Philosophy					
Moral Theory		X		X	X
Groundwork for moral theory				X	
Virtue Theory in relation to character of physicians				X	X
Medical Ethics and Professionalism					
Ends of life issues (i.e. abortion & euthanasia)	X	Portfolio	MEQ,		
Truth telling				X	MEQ X Portfolio, Osier
Ethics in medical research		SSMs, Portfolio		X	X
Allocation of scarce resources				X	X
Theories of medical ethics		Short notes Portfolio		X	X
Rights and responsibilities				X	X
Professional codes		X		X	X
Pastoral Care (Suffering, grief, "chronic" care)		X			Portfolios, MEAs, Osiers

		Used Now at Glasgow	For Use at Entry to Medical School	For use at mid-point	For use before Graduation.
Evidence Based Medicine					
What is valid evidence?				X	X
Different types of evidence				X	X
Interpreting evidence in context	SSMs			X	X
Applying research findings to particular individual patients				X	X
	Portfolios				
	Block assessments				
Dealing with uncertainty	Osiers			X	X
Medical Law					
Consent	Short notes			X	X
Confidentiality	Short notes			X	X
Error management					
Malpractice				X	X
Negligence				X	X
Reflective Clinical Reasoning and Decision Making					
	Block assessment				
Clinical reasoning	Osier			X	X
	Block assessment				
Diagnostic ability	Osier			X	X
	OSCE				
Pattern recognition					
	Osier				
Problem Solving	OSCE		X	X	X
	Portfolio				
Reflective ability					
"Multiplicity" i.e. Capacity for arguing both sides of a case (Perry)			X	X	X
Ability to commit to decision				X	X
P pluralistic view of collateral issues in decision making				X	X

This grid shows the elements of what our group has called the "Philosophy of Medicine". It indicates the times in the course as well as the assessment methods used. This grid describes the current Glasgow situation. Aberdeen and Dundee grids look very similar. The St. Andrews grid is not comparable, since students go elsewhere for clinical studies.

"Block" = End of Block, "MEQ" = Modified Essay Question, "OSLER" = Objective Structured Long Examination Record.

APPENDIX 15

Summary of the recommendations of the UK Consensus Statement on a model for the UK core curriculum in Medical Ethics and Law

AIMS OF THE CURRICULUM

Teaching should reinforce the overall aims of medical education:

The creation of good doctors who will enhance and promote the health and medical welfare of the people they serve in ways which fully and justly respect their dignity, autonomy and rights.

These goals will be achieved through:

- Ensuring students understand the ethical principals and values that underpin the practice of good medicine.
- Enabling students to think critically about ethical issues, to understand and appreciate alternative and sometimes competing approaches and to be able to argue and counter-argue in order to contribute to informed discussion and debate.
- Ensuring students know the main professional obligations of doctors in the United Kingdom as endorsed by the institutions which regulate or influence medical practice, particularly the GMC.
- Providing students with a knowledge and understanding of the legal process and the legal obligations of medical practitioners sufficient to enable them to practice medicine effectively and with minimal risk.
- Enabling students not only to enjoy the intellectual satisfaction of debates within medical ethics, but also appreciate that ethical and legal reasoning and critical reflection are natural components in their clinical decision-making and practice.
- Enabling students to understand that ethical and legal issues arise not only in extra-ordinary situations, but

also occur in everyday practice.

CORE CONTENT

1. Informed consent and refusal of treatment

- The significance of autonomy: respect for persons and for bodily integrity
- Competence to consent: conceptual, ethical and legal issues
- Further conditions for ethically acceptable consent: adequate information and comprehension, non-coercion
- Treatment without consent and proxy consent - when and why morally and legally justified
- Assault, battery, negligence and legal standards for disclosure of information
- Problems of communicating information about diagnosis, treatment and risks: the importance of empathy

2. The clinical relationship truthfulness, trust and good communication

- The ethical limits of paternalism towards patients
- The significance of honesty, courage, prudence, and facilitating attitudes: virtues in practice of good medicine
- Legal and ethical boundaries of clinical discretion to withhold information
- Practical difficulties with truth telling in medicine: inter/intra professional conflicts and other barriers to good communication
- The ethical and legal importance of good communication skills and the significance of the patient's narrative (as distinct from other professional narratives) in building relationships of trust. The importance of cultural, gender, inter-generational, religious and racial sensitivity.

3. Confidentiality and good clinical practice

- Professional information, privacy and respect for autonomy
- Trust, secrecy and security in the sharing of information: the practical demands of good practice
- The patient and the family: potential moral and legal tensions
- Disclosure of information: public versus private interests
- Compulsory and discretionary disclosure of confidential information: professional and legal requirements

4. Medical research

- Historical and contemporary examples of abuses of medical research
- Individual rights and moral tension between duty of care to the individual and the interests of others. Therapeutic and non therapeutic research
- Professional and legal regulation of medical research
- The ethical significance of the distinction between research, audit and innovative and standard therapy as well as between patients and healthy volunteers
- Research and vulnerable groups: ethical and legal boundaries of informed and proxy consent
- Research on animals: ethical debates and legal requirements

5. Human reproduction

- Ethical debates about, and the legal status of, the embryo/foetus
- The maternal-foetal relationship: ethical tensions

- Abortion: professional guidelines, legal requirements and debates about the use of tissue from aborted fetuses
- Sterilisation: ethical and legal issues
- Pre and postnatal screening and testing: ethical issues concerning informed consent and the determination of the interests of the future child
- Assisted conception: legal boundaries and ethical disputes

6. The "new genetics"

- Gene therapy: ethical issues concerning the distinction between treating the abnormal and improving the normal
- Somatic versus germline treatment and research; ethical and legal arguments
- Eugenics versus patient-centred care
- Genetic counselling: responsibilities to patients versus responsibilities to families
- Benefits and dangers of genetic testing and screening after birth; the risks of unwelcome information and of genetic stigmatisation
- Cloning: genetic versus personal identity - ethical implications

7. Children

- Respect for the rights of children: evolution of current ethical issues
- The relevance of age in the determination of competence to consent to or refuse treatment
- Ethical debates about legal boundaries of consultation

with younger and older children as regards consent to treatment

- The doctor/parent relationship: proxy decision-making and protecting children's interests
- Good ethical and legal practice in reporting suspected child abuse

8. Mental disorders and disability

- Definitions of mental disorders, mental incapacity (including mental illness, learning disability and personality disorder)
- Ethical and legal implications of, and research on, the seriously mentally disordered with or without consent
- Patient, family and community: ethical and legal tensions

9. Life, death, dying and killing

- Palliative care, length and quality of life and good clinical practice
- Attempting ethically to reconcile non-provision of life-prolonging treatment with the duty of care: killing and letting die, double effect, ordinary and extra-ordinary means
- Withholding and withdrawing life-prolonging treatment - and potentially shortening life - in legally acceptable ways
- Euthanasia and assisted suicide: ethical and legal arguments
- Transplantation: ethical and legal issues
- Death certification and the role of the coroner's court

10. Vulnerabilities created by the duties of doctors and medical students

- Public expectations of medicine: difficulties in dealing with uncertainty and conflict. Ethical importance of good inter- and intra- professional communication and teamwork
- The General Medical Council. Professional regulation, standards, and the Medical Register. Implications for students and their relationships with patients.
- Responding appropriately to clinical mistakes: personal, legal and ethical responsibilities. Unethical and unsafe practice in medicine: "whistle-blowing"
- The law of negligence, NHS complaints and disciplinary procedures
- The health of doctors and students and its relationship to professional performance: risks, sources of help and duties to disclose
- Medical ethics and the involvement of doctors in police interrogation, torture and capital punishment

11. Resource allocation

- Inadequate resources and distributive justice within the NHS: the law
- Theories and criteria for equitable health care: needs, rights, utility, efficiency, desert, autonomy
- Debates about rationing: personal, local, national and international perspectives. Markets and ethical differences between competing health care delivery systems
- Boundaries of responsibility of individuals for their own illnesses and ethical implications

12. Rights

- Conceptions of rights - what are they?
- Links between rights and duties and responsibilities
- International declarations of human rights
- The importance of the concept of human rights for medical ethics
- Debates about the centrality of rights for good professional practice in medicine

- Rights and justice in health care

THE ORGANISATION OF CLINICAL TEACHING IN ETHICS AND LAW

- Its adequate provision and coordination requires at least one full-time senior academic in ethics and law with relevant professional and academic expertise.
- Ethics and law should be introduced systematically in order to prepare students to meet their own professional and legal responsibilities when working with patients.
- Ethics and law teaching should be fully integrated with the rest of the curriculum.
- Full integration should include the provision of courses and workshops for teachers, including house officers.
- Ethics and law should be formally assessed as with all other core subjects within the curriculum.
- Ethics and law should have sufficient curriculum time and Resources to achieve the aforementioned goals.

TEACHING METHODS

- A variety of teaching methods is consistent with achieving the aforementioned goals. Ideally, these will entail a mix between large and small-groups, exploring issues in a base-based fashion.
- Coverage of core material should not falter in the face of insufficient teaching resources for small groups. Interactive work with large groups can still be effective and should always be considered rather than opting for little or no cover.
- The key is to make all teaching of whatever sized groups both clinically relevant and pitched to the academic background and ability of the audience taught.

APPENDIX 16

**VOCATIONAL STUDIES
SESSION EVALUATION QUESTIONNAIRE**

SESSION:.....

DATE:.....

What was good about this session?

What was not so good about this session?

What could be better next time?

Any other comments?

APPENDIX 17

**VOCATIONAL STUDIES
EVALUATION OF TUTOR**

Name of Tutor _____

Date _____

		Insufficiently	Neutral	Sufficiently
1.	The tutor stimulates all students to participate actively in the tutorial group process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	The tutor stimulates individual and group self-assessment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	The tutor demonstrates understanding of the subject matter covered in the course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	The tutor assists students in distinguishing main issues from minor issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	The tutor uses expert knowledge appropriately	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	The tutor contributes towards a better understanding of the subject matter.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	The tutor gives the impression of being motivated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	The tutor demonstrates respect for the contribution of individual group members.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Any other comments?

APPENDIX 18

ETHICS IN HEALTH CARE SURVEY

GENERAL INSTRUCTIONS:

Please Read Carefully:

In each case below, please assume that all the options presented are equally available to you. Consider yourself to be the physician in the case.

Choose from among the listed options, the one course of action that seems to you to best express respect for the deepest and most important ethical commitments in medicine. In the space below each answer, briefly set out the reasons for your choice. In other words, given the listed alternatives, which choice should a responsible physician make under the circumstances described.

.....

1. Assisted Suicide

Katherine Lewis is a 40 year old woman suffering from Guillain Barre Syndrome, a painful neurological illness that leaves its sufferers paralysed for unpredictable lengths of time. Many people recover from the syndrome more or less completely and live long relatively healthy lives. However, Katherine herself has been paralysed for THREE years and requires assistance from a ventilator to breathe. During this time she has been under your care. Ten months ago, it was determined that Katherine would never be able to move or breathe on her own again because of the extent of damage to her nerves and muscles. You explained this to Katherine in a gentle but clear manner. Last week Katherine asked to speak with you privately. She told you that she had considered her options, and had decided that she no longer wanted to live. She said her life held no value for her if it meant being in constant pain and without the freedom to move or even breathe on her own. She tells you that she has discussed this with her family and that they have accepted her wishes to have the ventilator removed.

You have two options:

1. _____ You apply for a court order to permit you to withdraw the treatment.
2. _____ You refuse to assist her.

Please state your reasons for this choice.

2. The patient with epilepsy

Edith Gratton is a sexually active, somewhat immature 24-year-old woman, who has suffered from a treatment-resistant form of epilepsy. Although a newly available medication promises to help her significantly, it imposes 10% risk of severe birth defects should she become pregnant. As a Catholic, Ms. Gratton is opposed to abortion and has reservations about birth control. Should she be informed of this new medication? Should it be prescribed if she requests it?

You have two options:

1. ___ Do not inform her of this new medication.
2. ___ Inform her about this new medication and prescribe it if she requests it.

Please state your reasons for this choice:

3. The Patient's Family

Joseph Castle, now 72, has been your patient for the last twelve years. He has said that if it ever happened that he should permanently lose consciousness, he would not want to be kept alive "on tubes". Having sustained severe brain damage following a cerebral haemorrhage, Mr. Castle now appears to have permanently lost consciousness: recovery is now extremely unlikely. He had been kept on a naso-gastric tube for nutrition and hydration until the prognosis became clear. When his sister and nephew (his only living relatives) are informed about the impending removal of all life support, they demand that he be kept alive. Despite extensive discussion with them, they are adamantly opposed to letting him die.

Your have two options:

1. ___ Go along with his relatives wishes.
2. ___ Seek court approval to remove the naso-gastric tube and permit the patient to die of dehydration.

Please state the reasons for your choice:

4. The Jehovah's Witness

You are a surgeon on call at the district general. A 27-year-old woman is brought in after an automobile accident. Having sustained internal injuries and significant blood loss, she is in need of immediate surgery. You speak with her - she is still quite clear headed - and you tell her what you propose to do. She agrees to surgery but tells you that, because she is a Jehovah's Witness, she will not consent to a blood transfusion. Jehovah's Witnesses believe that transfusions are contrary to the word of God. The patient will probably require a transfusion if she is to live. Further conversation discloses that she has been a Jehovah's Witness all her life, is unmarried with no dependants, and is serious about the refusal of the transfusions. She says she wants to live very much and asks you to do what you can to save her.

You have three options:

1. ___ Refuse to perform the operations unless she will permit you to administer the transfusion that will almost surely be necessary. She will not give you permission and, without the operation, there is a 97% chance that she will die.

2. ___ Agree to perform the operation, promising to administer no transfusion, even if necessary to save the woman's life. With this restricted procedure there is an 85 % chance that you will watch her die on your operating table, knowing you might save her by doing something you told her you would not do.

3. ___ "Agree" to perform the operation, promising to administer no transfusion, even if necessary to save the woman's life. But if a transfusion becomes necessary to save the woman's life - this is what will probably happen - do it, notwithstanding your promise. There will be only a 5% chance that the woman will die.

Please state the reasons for your choice:

5. The Prostitute

Carla Harris, a prostitute, has been your patient for four years. Having been treated for many sexually transmitted diseases, she finally tests positive for the HIV antibody. You urge her repeatedly to change her behaviour, to refrain from acting in ways that could transmit the virus. Despite your best efforts, she gives you no assurance that her clients will be protected. Indeed six weeks later she contracts yet another venereal infection.

You have two options:

1. ___ Notify the Health authorities so that they can intervene to protect your patient's clients.
2. ___ Continue to try to alter your patient's behaviour but do not report her.

Please state the reasons for your choice:

6. Teenager Requests Abortion

The Lamberts, a strict Catholic family, has attended your practice for ten years. Their 15-year-old daughter consults you, without her parent's knowledge, and asks you to refer her for an abortion. She explains that a pregnancy would ruin her plans to attend university. Mary insists that her parents not be informed of her choice.

You have three options:

1. ___ Refer her for the abortion and do not disclose this to her parents.
2. ___ Refer her for the abortion and inform her parents.
3. ___ Inform her parents of their daughter's request and ask their consent.

Please state the reasons for your choice:

7. The Down's Baby

The Mather's were in their mid-thirties with two other children. At birth their son was diagnosed clinically as having Down's Syndrome complicated by duodenal atresia. Babies with Down's Syndrome will display some degree of mental retardation as they become older. Without surgery to correct the duodenal atresia, the child cannot digest or pass food and will die. The Mather's refuse to consent to the surgery. They will not give up the baby but firmly believe that it would be unfair to their other children to raise them with a Down's Syndrome child.

You have two options:

1. ___ Go along with the parents' request.
2. ___ Obtain legal authority to treat the child against the will of the parents.

Please state the reasons for your choice:

8. Childhood Leukaemia

Sunitha is a bright 12-year-old girl whom you have been treating for leukaemia. Her condition is not responding to treatment, and you realise that there is nothing more that can be done for her. Her parents are informed of this and they are adamant that Sunitha should not be told. They feel that she has suffered enough through this illness and do not want to spoil the little time remaining by telling her that she is dying.

You have two options:

1. ___ Tell Sunitha.
2. ___ Abide by her parents' decision.

Please state the reasons for your choice:

9. The Attractive Patient

You have just taken over a single-handed practice on a remote, small Scottish island. You have always wanted a rural practice, and hope someday to marry and raise children on the island. Lee Cuthbert is an attractive, intelligent, levelheaded patient whose family has lived on the island for generations. Lee is also a member of the bird watching club you have joined. You have been treating Lee for some time for a difficult and unpleasant skin condition, which appears to be clearing up. Although surgery visits will continue to be necessary for monitoring, the patient is substantially improved. At the end of a visit, Lee smiles warmly and invites you for dinner, clearly evidencing an interest in being more than your patient.

Your options are:

1. ___ Accept the invitation.
2. ___ Do not accept the invitation.

Please state the reasons for your choice:

10. The Registrar

You are a senior house officer. Mrs. Katz is a 54-year-old woman who has been on your ward for nine days. She is in the terminal stages of cancer and is clear headed and aware. Afraid of the pain, she has said to her doctor "please do not let me suffer". This was accepted and written in her chart as an advanced directive. One day, Mrs. Katz tells you she wants to live to see the birth of her first grandchild. Later that night, while you are on duty, you are called to attend Mrs. Katz who has suffered a cardiac arrest. Your registrar, heading the team, decided not to resuscitate, despite your information regarding Mrs. Katz's comment made earlier that day.

Your options are:

1. ___ Do nothing.
2. ___ Recount the incident to the consultant in charge.

Please state the reasons for your choice:

11. The New Face

You are a plastic surgeon working in a private hospital. Andrew Thompson, a wealthy man in his 40s, has requested facial reconstruction that carries significant risk. Although there are no deformities, he has been obsessed with the idea that his face is not his own. Though he appreciates that there is no rational basis for his belief, he wants the surgery anyway. In the course of conversation with Mr Thompson's psychiatrist, it becomes clear to you that, while there is no reason to expect that Mr Thompson's distress at his facial condition will be relieved by plastic surgery, there is equally no reason to expect that it will be made any worse. Your lawyer advises you that the patient is competent to understand the medical risks of the procedure and to give consent to the surgery.

Your options are:

1. ___ Agree to perform the surgery.
2. ___ Decline to perform the surgery.

Please state the reasons for your choice:

12. The Cabby

Daniel Steward is a 46-year-old taxi driver who was recently diagnosed as having epilepsy. You have broken the bad news to him, and explained that a consequence of this illness is that he must give up his driver's licence for his safety and that of others. He is angry about this, but promises to report it to the Driver and Vehicle Licensing Agency (DVLA) rather than have you do it. A few weeks later, you are walking home after surgery, and you happen to see Mr. Steward picking up a fare in his taxi.

You have two options:

1. ___ Try to persuade Mr. Steward to keep his promise and give up his licence.
2. ___ Report Mr. Steward yourself.

Please state the reasons for your choice:

APPENDIX 19**INITIAL CLASSIFICATION OF SUBJECTS' WRITTEN JUSTIFICATIONS
OF THEIR PRE-SET ANSWERS TO THE VIGNETTES OF THE EHCI****CONSENSUS RESPONSES**

Category 1 - Based on the consensus reasoning of experts in the field of medical ethics, legal requirements on practitioners, or on policies issued by relevant professional institutions.

SUBCATEGORIES OF NON-CONSENSUS RESPONSES

Category 2 - Based on the subject's personal values/morality.

Category 3 - Influenced by other non-medical/legal value systems.

Category 4 - Although based on moral argument, it is not consistent with the profession's normative values.

Category 5 - Indeterminate

APPENDIX 20

HIERARCHY OF SUBJECTS' ACTION JUSTIFICATIONS

Level 4

The subject, in proposing a course of action, not only demonstrates the ability to identify, classify and analyse the issue(s) involved, but also demonstrates the ability to consider alternatives when deciding his/her course of action.

|

Level 3

The subject, in proposing a course of action, demonstrates his/her ability to identify, classify and analyse one or more of the ethical issue(s) contained.

|

Level 2

The subject, in proposing a course of action, demonstrates that he/she is able to recognise and/or identify one or more of the ethical issue(s) contained.

Level 1

|

The subject, in proposing a course of action, does not identify the ethical issue(s) contained in the vignette.

APPENDIX 21

VALUES RECOGNITION HIERARCHY

Level 4

The subject recognises the value system(s) inherent in his/her course of action, the value system(s) of the individuals involved in the decision making process and those of wider society.

|

Level 3

The subject recognises both the value(s) inherent in his/her course of action and those of the individual(s) involved in the decision making process.

|

Level 2

The subject recognises the value(s) inherent in either his/her course of action or those of the individual(s) involved in the decision making process.

|

Level 1

There is no recognition of the value(s) inherent in the subject's proposed course of action or those of the individual(s) involved in the decision making process.

APPENDIX 22

Name of Assessment	Description	No. of Items/ codes	Reliability of data/codes (see method for definitions)	Validity of data (see method for definitions)	Notes
Ethics-Affective					
Anderson Cheating Questionnaire (Anderson & Obenshain, 1994)	Assesses opinions about extent to which behaviors are ethical and prevalent; self-administered questionnaire; yes/no response options (Y/N)	15	None reported	None reported	Purpose: Research Setting: Medical school Participants: Medical students (all years), faculty
Baldwin Cheating Questionnaire (Baldwin, et al., 1996)	Assesses attitudes toward cheating, observations of cheating, and own cheating behavior; self-administered questionnaire; 7 pt scale ("strongly agree" to "strongly disagree"), Y/N	20	None reported	None reported	Purpose: Research Setting: 31 medical schools Participants: Medical students (2nd-yr.)
Coverdale Attitudes toward Doctors' Social and Sexual Contact with Patients Questionnaire (Coverdale & Turbott, 1997)	Assesses attitudes toward physicians' social and sexual contact with patients; self-administered questionnaire; 3-point scale ("usually" to "never" appropriate), qualitative	22	None reported	None reported	Purpose: Education Setting: Medical school (New Zealand) Participants: Medical students (5th-yr.) survey has also been used with practicing physicians

Coverdale Cheating Behaviors Questionnaire (Coverdale & Henning, 2000)	Assesses opinions toward unacceptable and acceptable behaviors; self-administered questionnaire; 3 pt scale ("acceptable, neutral, unacceptable"), frequency question	20	None reported	None reported	Purpose: Education Setting: Medical school (New Zealand) Participants: Medical students (2nd & 4th-yr.)
Feudtner Personal Development and Ethical Environment Survey (Feudtner et al., 1994)	Assesses 1) whether students encountered ethically problematic situations, 2) their attitudes toward those situations, 3) their perceptions of their personal ethical development; self-administered questionnaire; multiple choice questionnaire (MCQ), qualitative	38	None reported	Face Content: Preliminary research	Purpose: Research Setting: 6 medical schools Participants: Medical students (3rd & 4th-yr.)
Freeman Deception of Third-Party Payers Questionnaire (Freeman et al., 1999)	Assesses willingness to deceive third-party payers and attitudes toward same; self-administered questionnaire; 5 pt scale ("clearly justified" to "clearly unjustified"), 2 pt scale ("deceive" or "not deceive"), Y/N	24	None reported	Face Construct: Positive relationship between sanctioning deception, severity of illness	Purpose: Research Setting: Metropolitan areas nationwide Participants: Practicing Physicians (Internal medicine)
Green Survey to Determine Willingness to Deceive (Green et al., 2000)	Assesses attitudes toward using deception; self-administered questionnaire; 5 pt scale ("very likely" to "very unlikely" to deceive)	5 vignettes2 versions of each	None reported	Face Content: Item relevance tested via field tests	Purpose: Research Setting: Nationwide Participants: Residents (members of the American College of Physicians)

Hayes Survey on End-of-Life Decision Making ((Hayes et al., 1999)	Assesses attitudes toward end-of-life issues; self-administered questionnaire; two 5 pt scales ("very important" to "very unimportant", "strongly agree" to "strongly disagree"); Y/N	31	None reported	None reported	Purpose: Education Setting: A medical school Participants: Medical students (3rd-yr)
Levitt Ethical Issues Questionnaire (Levitt, 1994)	Assesses frequency of encountering, and difficulties posed by, ethical issues; self-administered questionnaire; 5 pt scale ("never" to "at least once a day"); 4 pt scale ("the least difficult" to "the most difficult")	28	None reported	Face Content: Expert review	Purpose: Education Setting: Medical center Participants: Residents (family medicine), faculty
Novack Physicians' Attitudes toward Using Deception Questionnaire (Novack et al., 1989)	Assesses willingness to use deception; self-administered questionnaire; MCQ, 4 pt scale ("strongly agree" to "strongly disagree"), 4 pt scale ("never" to "often"), ranking, qualitative	19	None reported	Face	Purpose: Research Setting: Statewide Participants: Practicing physicians
Shorr Assessment of Medical Ethics Education (Shorr et al., 1994)	Assesses attitudes toward and knowledge of selected ethical issues; self-administered questionnaire, MCQ, true/false (T/F)	13	None reported	Face	Purpose: Education Setting: Medical school Participants : Medical students (1st-yr.)

Simpson Medical Student Honor Code Survey (Simpson et al., 1989)	Assesses opinions about cheating; self-administered questionnaire; 2 pt scale ("appropriate" or "inappropriate"), 4 pt scale ("strongly agree" to "strongly disagree")	18	None reported	None reported	Purpose: Research Setting: Medical school Participants: Medical students (1st to 4th-yr.)
Sulmasy Questionnaire for House Officers (Sulmasy et al., 1995)	Assesses knowledge, attitudes and confidence pertaining to selected ethical issues; self-administered questionnaire; MCQ, T/F, 5 pt scale ("very low confidence" to "very high confidence")	50	None (for items assessing attitudes)	Face	Purpose: Research Setting: Two medical centers Participants: Residents and practicing physicians (internal medicine)
Waz Assessment of Ethics Education (Waz & Henkind, 1995)	Assesses frequency of encountering and comfort with selected ethical situations; self-administered questionnaire; 3 pt scale ("very frequent" to "never"), 3 pt scale ("very comfortable" to "uncomfortable")	28	None reported	Content: Questionnaire items based on data obtained from a preceding exploratory study	Purpose: Education Setting: Medical centers Participants: Residents (pediatrics)
White Ethical Dilemmas Survey (White et al., 1991)	Assesses most difficult ethical dilemmas; structured interview; qualitative	6	None reported categories emerged from data collected	None reported	Purpose: Education Setting: 5 medical centers Participants: Residents (paediatrics) Feasibility: Train coders to analyze data

Ethics-Cognitive

Beijing-San Francisco Study of Medical Practices Questionnaire (Feldman et al., 1999)	Assesses ethical reasoning; self-administered questionnaire; MCQ, Y/N/other, qualitative	14	None reported	Face	Purpose: Research Setting: Multiple practices (U.S. and China) Participants: Practicing physicians (internal medicine)
Christie Ethical Decision-making Questionnaire (Hoffmaster et al., 1991)	Assesses ethical decision-making; self-administered questionnaire; MCQ	24	Test-retest: 0.75-90	Face Content: Cases developed from physicians' experiences, reviewed by experts	Purpose: Research Setting: Britain, Canada, United States Participants: Practicing physicians (family medicine)
Defining Issues Test (DIT) (Baldwin & Bunch, 2000; Self et al., 1992)	Assesses moral reasoning; self-administered questionnaire; 5 pt scale ("great importance" to "no importance"), 4 pt rank order ("most important" to "fourth most important")	102	Test-retest: 0.65-0.75	Previously established; In 1992 study discriminated between ethics course participants and non-participants	Purpose: Education, research Setting: Medical schools, medical centers Participants: Medical students, residents, practicing physicians
Ethics and Health Care Survey Instrument (Goldie et al., 2002)	Assesses knowledge of ethical issues; self-administered questionnaire; MCQ, qualitative	24	None reported	Face Content: Expert review Construct: Detected changes due to learning via cohort study	Purpose: Education Setting: Medical school Participants: Medical students (2nd-yr.)

Farber Decision to Breach Confidentiality Questionnaire (Farber et al., 1989)	Assesses ethical reasoning; self-administered questionnaire; 7 pt scale (from "don't tell police" to "should definitely tell police"), qualitative	14	None reported	Construct: Relationship between disclosure and crime type	Purpose: Education Setting: Medical center Participants: Residents (internal medicine)
Fleetwood Medical Ethics Assessment (Fleetwood et al., 2000)	Assesses ethical knowledge and behaviors; self-administered questionnaire and a checklist completed by standardized patients (SPs); MCQ, checklist	29 (knowledge) 11(checklist)	None reported	Content: Expert review (checklist)	Purpose: Education Setting: Medical school Participants: Medical students (2nd-yr.) Feasibility: Train SPs
Gramespacher Perceptions of Ethical Problems Interview (Gramespacher et al., 1986)	Assesses knowledge of ethical problem; structured interview; qualitative	4 categories emerged	None reported	None reported	Purpose: Research Setting: Medical center Participants: Residents, fellows (internal medicine), nurses Feasibility: Train coders
Grundstein-Amado Ethical Decision Making Processes Interview (Grundstein-Amado, 1992)	Assesses ethical decision making; structured interview; qualitative	41 codes	None reported	None reported	Purpose: Research Setting: Two medical centers Participants: Practicing physicians and nurses Feasibility: Train coders
Hayes Ethical Reasoning Assessment (Hayes et al., 1999)	Assesses ethical reasoning skills; self-administered questionnaire; qualitative	4 categories emerged	Intra-rater=0.93	None reported	Purpose: Education Setting: Medical school Participants: Medical students (3rd-yr.) Feasibility: Train coders

Hebert's Ethical Sensitivity Vignettes (Hebert et al., 1992)	Assesses ethical knowledge; self-administered questionnaire; qualitative	4 open-ended questions	None reported	None reported	Purpose: Research Setting: Medical school Participants: Medical students (all years) Feasibility: Train coders
Knabe Understanding of Ethical Issues in the Ambulatory Setting Questionnaire (Knabe et al., 1994)	Assesses knowledge of ethical issues; self-administered questionnaire; Y/N, 5 pt scale ("very significant" to "very insignificant"), qualitative	36	None reported	None reported	Purpose: Research Setting: Medical school Participants: Medical students (2nd to 4th-yr.)
Moral Judgment Test (Lind, 2000)	Assesses moral attitudes and competencies; self-administered questionnaire; MCQ	24	None reported	Construct: Results consistent with theoretical precepts	Purpose: Research Setting: Medical school (Germany) Participants: Medical students (all years)
Peter Moral reasoning Questionnaire (Peter & Gallop, 1994)	Assesses moral reasoning; self-administered questionnaire; qualitative	Lyons' Coding Scheme-2 Walker Classification-2 categories	Inter-rater (Kappa): 0.88 (Lyons Coding Scheme), 0.9 (Walker Classification)	None reported	Purpose: Research Setting: Medical center Participants: Medical students (3rd and 4th-yr.) nurses Feasibility: Train coders
Professional Decisions Values Test (Rezler et al., 1992)	Assesses ethical reasoning; self-administered questionnaire; MCQ	20	Inter-item (Cronbach's alpha): 0-0.23, Test-retest: 0.56-0.92	Content: Expert review Construct: Results consistent with theoretical precepts	Purpose: Research Setting: Medical school, law school Participants: Medical and law students (1st -yr.)

Savulescu Ethics Competence Tool (Savulescu et al., 1999)	Assesses ethical reasoning; self-administered questionnaire; qualitative	18	Inter-rater: Spearman's rank correlation (signif.); Wilcoxon signed rank test (not signif); Test-retest: F-test (not signif.)	Content: Signif. correlation between untrained and trained raters	Purpose: Education Setting: Medical school (Australia) Participants: Medical students (1st and 3rd clinical yr.) Feasibility: Train raters
Shapiro Assessment of Ethical Issues (Shapiro & Miller, 1994)	Assesses ethics knowledge and decision-making; self-administered questionnaire; qualitative	4 codes	Inter-rater (mean)=0.82	None reported	Purpose: Education Setting: Medical school Participants: Medical students (2nd yr.) Feasibility: Train coders
Shorr Assessment of Medical Ethics Education (Shorr et al., 1994)	Assesses attitudes toward and knowledge of selected ethical issues; self-administered questionnaire; MCQ; true/false (T/F)	13	None reported	Face	Purpose: Education Setting: Medical school Participants: Medical students (1st-yr)
Siegler Assessment (Siegler et al., 1982)	Assesses ethical reasoning; self-administered questionnaire; qualitative	15 codes	Inter-rater: 0.88	Construct: Discriminated between course participants and non-participants	Purpose: Education Setting: Medical school Participants: Medical students (3rd yr.) Feasibility: Train coders
Smith Assessment of Moral Reasoning and Ethical Judgment (Smith et al., 1994)	Assesses ability to recognize and address ethical issues; data collected via rating by SP and self-administered questionnaire; 5 pt scale ("excellent" to "failing"), qualitative	5 items (one case)	Inter-rater (for qualitative only): 0.6-0.9 (Rho)	None reported	Purpose: Education Setting: Medical school Participants: Medical students (4th yr.) rated by SPs Feasibility: Train SPs and coders (qualitative data)

Socio-Moral Reflection Measure (Self et al., 1989)	Assesses moral reasoning; self-administered questionnaire; qualitative	9	None reported	Construct: Post-course improvement in performance	Purpose: Education Setting: Medical school Participants: Medical, veterinary students (1st yr.) Feasibility: Train coders
Spooner Ethics Test (Spooners et al., 1989)	Assesses knowledge of ethical and moral issue; self-administered questionnaire after viewing video scenarios; qualitative	6	Inter-rater: 0.76-0.97	None reported	Purpose: Education Setting: Medical school (Canada) Participants: Medical students (1st yr.) Feasibility: Train coders
Sulmasy Questionnaire for House Officers (Sulmasy et al., 1985)	Assesses knowledge, attitudes and confidence pertaining to selected ethical issues; self-administered questionnaire; MCQ, T/F, 5 pt scale ("very low confidence" to "very high confidence")	50	Inter-item: (Cronbach's alpha) 0.76-0.86 (confidence & knowledge scales)	Face	Purpose: Research Setting: Two medical centers Participants: Residents, practicing physicians (internal medicine)
Walker Perceptions of Ethics Problems Assessment (Walker et al., 1991)	Assesses perceptions of ethics problems; semi-structured interview; qualitative	19 categories	None reported	None reported	Purpose: Research Setting: Medical center Participants: Practicing physicians, nurses Feasibility: Train interviewers, coders
Wenger Orthopaedic Surgeons' Knowledge of Medical Ethics Questionnaire (Wenger & Lieberman, 1998)	Assesses knowledge of medical ethics; self-administered ;MCQ, T/F	26	Test-retest: 0.93	Content: Expert review	Purpose: Research, education Setting: Medical center Participants: Practicing physicians, residents (orthopedic surgery)

White Ethical Dilemmas Survey (White et al., 1991)	Assesses most difficult 6 categories ethical dilemmas; structured interview; qualitative	None emerged from data collected	None reported	None reported	Purpose: Education Setting: 5 medical centers Participants: Residents (pediatrics) Feasibility: Train coders
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Ethics-Behavioural

Baldwin Cheating Questionnaire (Baldwin et al., 1996)	Assesses attitudes toward cheating, observations of cheating, and own cheating behavior; self-administered questionnaire; 7 pt scale ("strongly agree" to "strongly disagree"), Y/N	20	None reported	None reported	Purpose: Research Setting: 31 medical schools Participants: Medical students (2nd-yr.)
Coverdale Cheating Behaviors Questionnaire (Coverdale & Henning, 2000)	Assesses opinions toward unacceptable and acceptable behaviors; self-administered questionnaire; 3 pt scale ("acceptable, neutral, unacceptable"), frequency question	20	None reported	None reported	Purpose: Education Setting: Medical school (New Zealand) Participants: Medical students (2nd & 4th-yr.)
Ethics OSCE (Singer et al., 1996)	Assesses ability to address ethical situations; trained rater observed student interact with SP; checklist ("done" or "not done")	8 to 10	Inter-rater: 0.44-0.8, Generalizability coefficient: 0.28	Face	Purpose: Education Setting: 5 medical schools Participants: Medical students (4th-yr.), foreign graduates Feasibility: Need 12 examiners/raters and 8 SPs (for 4 cases), training for each group
Fleetwood Medical Ethics Assessment (Fleetwood et al., 2000)	Assesses ethical knowledge and behaviors; self-administered questionnaire and a checklist completed by standardized	29 (knowledge) 11 (checklist)	None reported	Content: Checklist reviewed by experts	Purpose: Education Setting: Medical school Participants: Medical students (2nd-yr.) Feasibility: Train SPs

	patients (SPs); MCQ, checklist				
Green's Guidelines on Ethics Questionnaire (Green et al., 1996)	Assesses self-reported behaviors regarding ethical issues derived from the ACP Ethics Manual; self-administered questionnaire; Y/N, if yes complete 4 pt scale and MCQ	55	None reported	Face	Purpose: Research Setting: Multiple medical centers Participants: Residents (all yrs and members of the American College of Physicians)
Holloran Ethical Decision Making Categories (Holloran et al., 1995)	Assesses ethical decision making; data obtained via medical record review; Length of stay (LOS) and qualitative data	9 categories and LOS	None reported	Construct : Could be inferred from improved performance during course implementation	Purpose: Education Setting: Medical center Participants: Residents (surgery)
Moral Behavior Analysis (Sheehan et al., 1987)	Assesses skills in addressing medical-moral problems; trained raters observed learner interactions with SP (videotaped); checklist	26	Inter-rater: 0.77-0.89	Construct: Discriminated between course participants and non-participants	Purpose: Education Setting: Medical center Participants: Residents (family medicine, internal medicine), medical students (4th-yr.) Feasibility: Train raters
Smith Assessment of Moral Reasoning and Ethical Judgment (Smith et al., 1994)	Assesses ability to recognize and address ethical issues; data collected via rating by SP and self-administered questionnaire; 5 pt scale ("excellent" to "failing"), qualitative	5 items (one case)	Inter-rater (for qualitative only): 0.6-0.9 (Rho)	None reported	Purpose: Education Setting: Medical school Participants: Medical students (4th yr.) Feasibility: Train SPs and raters (qualitative data)

White Ethical Dilemmas Survey (White et al., 1991)	Assesses most difficult ethical dilemmas; structured interview; qualitative	6 categories emerged from data collected	None reported	None reported	Purpose: Education Setting: 5 medical centers Participants: Residents (pediatrics) Feasibility: Train coders
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Ethics-Environmental

AAMC Graduation Questionnaire (Kassebaum & Cutler, 1998)	Assesses reports of mistreatment; self-administered questionnaire; 4 pt scale ("never" to "frequently"), 5 pt scale ("very satisfied" to "very dissatisfied"), Y/N, choose all that apply	22	None reported	None reported	Purpose: Research, education Setting: All medical schools in U.S. Participants: Medical students (4th-yr.)
Anderson Cheating Questionnaire (Anderson & Obenshain, 1994)	Assesses opinions about extent to which behaviors are ethical and prevalence; self-administered questionnaire; yes/no response options	15	None reported	None reported	Purpose: Research Setting: Medical school Participants: Medical students (all years), faculty
Baldwin Cheating Questionnaire (Baldwin et al., 1996)	Assesses attitudes toward cheating, observations of cheating, and own cheating behavior; self-administered questionnaire; 7 pt scale ("strongly agree" to "strongly disagree"), Y/N	20	None reported	None reported	Purpose: Research Setting: 31 medical schools Participants: Medical students (2nd-yr.)
Bissonette Ethical Issues in Clinical Education Questionnaire (Bissonette et al., 1995)	Assesses reports of ethical issues encountered in clinical education; self-administered questionnaire; qualitative	7 codes	None reported	None reported	Purpose: Education Setting: Medical school Participants: Medical students (2nd & 4th-yr.)
Elnicki Multiinstitutional Study of Medical Student Abuse (Elnicki et al., 1999)	Assesses perceptions of abuse; self-administered questionnaire;	11	None reported	None reported	Purpose: Research Setting: Medical school Participants: Medical students (3rd-yr.)

Feudtner Personal Development and Ethical Environment Survey (Feudtner et al., 1994)	Choose all that apply, 7 pt scale ("least severe" to "most severe"), qualitative Assesses 1) whether students encountered ethically problematic situations, 2) their attitudes toward those situations, 3) their perceptions of their personal ethical development; self-administered questionnaire, MCQ	38	None reported	Face Content: Preliminary research	Purpose: Research Setting: 6 medical schools Participants: Medical students (3rd & 4th-yr.)
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Levitt Ethical Issues Questionnaire (Levitt et al., 1994)	Assesses frequency of encountering, and difficulties posed by, ethical issues; self-administered questionnaire; 5 pt scale ("never" to "at least once a day"), 4 pt scale ("the least difficult" to "the most difficult")	28	None reported	Face Content: Expert Review	Purpose: Education Setting: Medical center Participants: Residents (family medicine), faculty
Richardson Medical Student Perception of Mistreatment Questionnaire (Richardson et al., 1997)	Assesses incidents of mistreatment; self-administered questionnaire; 4 pt scale ("very unfavorable" to "very favorable"), Y/N	11	None reported	None reported	Purpose: Research Setting: Medical school Participants: Medical students (2nd & 3rd-yr.)
Richman Experiences of Abuse Questionnaire (Richman et al., 1992)	Assesses perceptions of abusive behavior; self-administered questionnaire; 4 pt scale ("never" to "most of the time")	8	None reported	None reported	Purpose: Research Setting: Medical school Participants: Medical student cohort followed from 1st to 4th-yr.
Satterwhite Occurrence of Unethical Situations Questionnaire (satterwhite et al., 1998)	Assesses exposure to unethical situations; self-administered questionnaire; MCQ	30	None reported	None reported	Purpose: Research Setting: Medical school Participants: Medical students (all yrs.)
Sheehan Survey of Medical Students' Perceptions of Abuse (Sheehan et al., 1990)	Assesses perceptions of abusive behavior; self-administered questionnaire; 4 pt scale ("never" to "frequently"), qualitative	44	None reported	Face	Purpose: Research Setting: 10 medical schools Participants: Medical students (4th-yr.)
Silver Medical Student Abuse Questionnaire (Silver & Glick, 1990)	Assesses perceptions of abusive behavior; self-administered; Y/N, 3 pt scale ("minor importance" to "major importance"), qualitative	10	None reported	Content: Expert review	Purpose: Research Setting: Medical school Participants: Medical students (all yrs.)
Waz Assessment of Ethics Education (Waz & Henkind, 1995)	Assesses frequency of encountering and comfort with selected ethical situations; self-administered	28	None reported	Content: Questionnaire items based on data obtained from a preceding	Purpose: Education Setting: Medical centers Participants: Residents (pediatrics)

	questionnaire; 3 pt scale ("very frequent" to "never"), 3 pt scale ("very comfortable" to "uncomfortable")			exploratory study	
White Ethical Dilemmas Survey (White et al., 1991)	Assesses most difficult ethical dilemmas; structured interview; qualitative	6 categories emerged from data collected	None reported	None reported	Purpose: Education Setting: 5 medical centers Participants: Residents (pediatrics) Feasibility: Train coders