that smokers who stop smoking weeks or months before surgery are at an increased risk compared with non-smokers, and patients treated by the routine precautions against postoperative deep vein thrombosis (for example, subcutaneous heparin) should have a lower risk of thromboembolic phenomena.

Firm advice to stop smoking given in a hospital environment and repeated in follow up clinics is very successful in persuading people to stop smoking.³³ Admission to hospital for surgery, with the general supportive atmosphere and emphasis on health and disease, provides a prime opportunity to persuade people to stop smoking. This opportunity should not be missed just because smokers appear to have a reduced incidence of deep vein thrombosis—a complication amenable to prevention by other means. Advice to patients to stop smoking as long as possible before surgery will undoubtedly benefit them—not only in the short term because of a reduction in perioperative morbidity—but also in the long term because of the risks of chronic pulmonary disease, carcinoma of the lung, and ischaemic heart disease.

In conclusion, roughly six weeks after stopping smoking patients may expect an improvement in pulmonary function, a reduction in postoperative respiratory morbidity, and a return towards normal immune responses. If, however, patients cannot be persuaded to stop smoking for this period (or permanently) considerable benefit will still accrue from the improvement in cardiovascular function brought about by even 12 to 24 hours of abstinence from smoking—a factor of particular importance in patients with ischaemic heart disease.

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Initiatives in the preregistration year (general clinical training)

When 12 months of postgraduate extra practical training was introduced in 1953 as a prerequisite for full registration the hope was that this step would allow the undergraduate course to become more truly educative.¹ That hope seems to have failed,^{2,3} perhaps because of a combination of entrenched attitudes and the ever enlarging undergraduate curriculum, and despite the liberal style of the General Medical Council's recommendations on basic medical education.

Meanwhile, for the past 30 years the training experience of the preregistration year has remained more or less fixed in a pattern of six months' medicine and six months' surgery. This period of so called "general clinical training"⁴ has come to be regarded as a necessary and proper initiation rite for the young doctor. For the first time he comes face to face with life and death issues, for which he now shares some responsibility. He learns to work long hours. In 1980 the GMC's education committee extended its recommendations to cover this period with guidelines concerning patterns of experience and suitability of posts and hospitals and attempted to solve the problems being generated by ever increasing specialisation in medicine and surgery—for example, by providing for a period of training of up to four months spent in general practice within a health centre.

This potential development was an echo of similar and more elaborate proposals generated in the 1960s by medical teachers⁴ and in the 1970s by the Merrison committee.⁵ The latter proposals—for a two year period of graduate clinical training—had foundered at an early stage, largely because of some medical schools' protests that their five year long curricula (which would have been reduced to four years by the proposals) were solidly established and barely able to accommodate the content already demanded.

In practice, the GMC's encouragement to medical schools to look for new combinations of preregistration experience has led to just one experiment incorporating general practice and this within the University of London at St Mary's Hospital Medical School. A previous experimental post in Southampton in primary care had combined four months in the professorial medical unit and two months in the university health centre linked to a six month post in surgery; but this had faltered—apparently over the issue of prescribing. By contrast, the St Mary's experiment seems to have been highly successful (p 1811).

The report describes the arrangements made for clinical work, supervision, prescribing, teaching, and also the administrative problems. The general practice house officer worked alongside the general practice trainee in certain respects and seems to have had an ample experience of acute and chronic illness, and some experience of preventive approaches, to have learnt to work in a multidisciplinary fashion, and to have been properly supervised from both legal and educational standpoints. The experiment has been monitored by the regional postgraduate dean, and the complementary medical and surgical house officer posts were solidly embedded in the teaching hospital.

Yet after all these years only one such apparently successful scheme seems to exist. This may reflect resistance to change and to the idea itself (though there are clearly also problems in switching to four monthly from six monthly rotational schemes) and the report from Harris and his colleagues is opportune (p 1811). Influenced perhaps by its new mood of introspection as well as manpower problems, pressure from the juniors, and public opinion, the medical profession seems now to be thinking that "general clinical training" may no longer be encompassed simply by working within the hospital system in medicine and surgery. Means may need to be devised which will not lengthen training but will nevertheless permit exposure at this stage to subjects such as general practice, obstetrics and gynaecology, laboratory clerkships, psychiatry, and community medicine. This is quite evident from the profession's response to the proposals of the GMC's education committee on basic specialist training, which called for broadening of that next phase.⁶

The education committee is currently looking at general clinical training. Any effective proposals for change will have to be practicable in statutory terms as well as acceptable in educational and professional ones. More adequate supervision and guidance may also be necessary during this period. Such supervision might protect the house officer from defensive blunting of his sensitivity to human problems, which may otherwise sometimes be the price to be paid for the traumas of the initiation rite, and which others have perhaps wrongly attributed exclusively to deficiencies of undergraduate training.²

The recent tendency has been to blame undergraduate education for inadequacies such as alleged deficiencies in clinical skills when it may be that the preregistration and early specialist training phases are more culpable. With better supervision for preregistration training (and there are resource implications in this) this phase can perhaps become a properly coordinated part of medical education and practice. For instance, at present the trainee starts with a clean sheet on graduation and then finds an abrupt change of responsibility for his medical education at the point of registration; this change may be a block to the idea of continuity in the educational process. It is the GMC's education committee which, since 1978, has been given statutory responsibility for coordinating all stages of medical education. If this can be done then perhaps the undergraduate course may finally be liberated from its present overriding commitment to detail in its many compulsory course units. The detail is often said to stultify creative thinking and problem solving skills, but one of the essential steps in training young doctors is helping them to understand the relation of the minutiae to the whole—an understanding vital to the later tasks of medical practice in both its specialist and generalist forms and presumably also to the ability to adopt when necessary an holistic approach. Yet as things stand at

present the young doctor is required to be "complete" by the time of full registration, for this step gives a legal right to practise independently.

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Unconventional viruses or prions?

In his recent book *Late Night Thoughts* Lewis Thomas made a list of "Seven Wonders of the Modern World."¹ His fourth wonder is the infectious agent commonly known as scrapie virus, which produces a fatal degenerative disease of the central nervous system in sheep and goats—as well as in several laboratory animals such as mice and hamsters. Thomas's decision to place the scrapie agent among his wonders is based on the fact that no nucleic acid has yet been found among the infectious material. Indeed, it has been suggested that the agent may be composed entirely of protein. To quote Thomas, "looked at this way, the scrapie agent seems the strangest thing in all biology. . . ."

The disease of sheep, now termed scrapie, was described in the scientific literature of the last century in a *Note sur les lésions nerveuses de la tremblante du mouton* by Besnoit and Morel.² Only in the past few decades has the agent responsible for the transmission of the disease been recognised as being odd or unconventional.³⁻⁵ Numerous attempts have been made to define the scrapie agent in terms of its chemical composition and place it alongside other infectious agents such as the viruses of animals and man or the viroids of plants. To date, all efforts to show the presence of a nucleic acid (either DNA or RNA) have completely failed. The agent has proved resistant to all nucleases, to irradiation with ultraviolet light, to divalent cation hydrolysis, to chemical inactivation with agents such as hydroxylamine, and to psoralen photoinactivation.⁶ These are all agents which modify nucleic acids. Most viruses, especially those whose genetic information is contained within relatively low molecular weight DNA or RNA, may prove recalcitrant to one or more of these processes, but no virus has ever before proved resistant to all of them. In this regard the scrapie agent is unique. On the other hand, its infectivity has been shown to be susceptible to numerous processes which inactivate proteins—for example, the hydrolytic activity of trypsin. Experiments such as these have provided the basis for the suggestion that a protein, or proteins, may be exclusively required for infectivity and led to the suggestions of Prusiner that the scrapie agent may be better defined not as a virus but