increasing the population prevalence of the trait). Indeed, this resulted in a more proximal location for the putative gene. The trade off, however, was a prevalence in the general population similar to the familial rates in the sample overall. In other words, the evidence for familial aggregation, the cornerstone of a genetic hypothesis, was attenuated.

There are lessons too from other studies—for example, of the hypothesis that another behavioural trait, manic depressive illness, is X linked. Support for this hypothesis was initially furnished by segregation patterns consistent with X linked transmission and reports of linkage to chromosomal region Xq27-28. In some studies the statistical support for these findings far exceeded the significance levels reported by Hamer *et al.*[1] Moreover, the evidence from twin and adoption studies for a genetic component in manic depressive illness was far more compelling than that for homosexuality. Unfortunately, non-replication of the linkage findings by other investigators, as well as extension and reevaluation of the original data, has resulted in diminished support for this hypothesis.[8] This outcome underscores the uncertainties in linkage studies of complex behavioural traits.

The claim of linkage of male homosexuality to chromosome Xq28 has wide social and political implications. Yet the scientific question is a complex one, and the interpretation of these results is hampered by methodological uncertainties. Further study is crucial to confirm or refute this finding.

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Service implications of the Calman report

Consultants' clinical responsibility is not negotiable; administrative structures are

The Calman report[1] has received a cautious welcome as a thoughtful attempt to harmonise European Community directives with the needs of higher specialist training in the United Kingdom.[2] But the report is not just another interesting set of proposals to be debated and then discarded. Because the recommendations are driven by the requirements of European Community directives they seem likely to be implemented. They are therefore big news for junior doctors. They will, however, affect consultants even more than juniors. The Calman report opens the door to a consultant led hospital service, in which consultants deliver the bulk of medical care. In developing such a service it is important to distinguish what is and is not negotiable about the consultant's role.

After Calman it is expected that there will be many fewer registrars (the new higher specialist training grade), that each will spend less time on service work, and that, thanks to the new deal,[3] they will be on call for no more than 72 hours a week. Doctors currently at registrar and senior registrar level will be replaced by an increased number of consultants. What emerges is a basic two tier hospital medical service, with consultants second on call to senior house officers (with or without preregistration house officers) and experienced trainees available only irregularly. In effect registrars will become supernumerary.

Some specialties already run essentially on this basis—in district general hospitals, for provision of elective care, in specialties with little contact with patients, and in the private sector. But the loss of the intermediate tier of junior doctors will have a profound effect on acute specialties which deal with emergencies around the clock and on university hospital units. It will be up to consultants to fill the hole created in service work and 24 hour cover by the departure of registrars. Although the blow may be cushioned to some extent by reallocation of inappropriate tasks, by the subconsultant career grades, and by foreign graduates in visiting posts, the general effect on consultant practice is likely to be profound.

Post Calman consultants would usually be appointed younger, probably at lower starting salaries, and would provide more of the bread and butter care for their patients (just as they might in private practice). What are the advantages? Emergencies would usually be treated by fully trained specialists rather than inexperienced juniors; inpatients would see their consultants on most days; consultants would perform the bulk of operations and procedures; new outpatients would be routinely evaluated by a consultant; and outpatients attending long term would see the same doctor on each visit. All these changes would be popular with the public and general practitioners and therefore with provider units keen to attract purchasers.

The nature of consultants' work would be transformed and their responsibility for out of hours cover would increase. Instead of very long working hours during training being followed by a relatively high degree of protection as a consultant, antisocial hours would thus be more evenly spread across a hospital doctor's career. In making this happen we must be careful not simply to shift long hours from juniors to seniors. The debate on juniors' hours has taught us that humane medical practice is predicated on humane conditions of service. It is clearly unreasonable to expect consultants to do more than their juniors, and the capacity to cope with long hours usually declines through middle age. New practices, including shifts, handovers, and team working, will need to be developed, and these can draw on the experience derived from implementing the new deal. An expanded consultant grade would also have to incorporate the expectation of professional development, with a changing pattern of salary, conditions, and responsibilities at different stages from appointment to retirement.

Such changes may appear to strike at the very foundations of consultant practice, so it is important to consider the

essential nature of the consultant role. The principal factor that distinguishes a consultant from other hospital grades is that the consultant bears ultimate responsibility for clinical care. No matter what the administrative arrangements of the unit, when it comes to the doctor-patient relationship the responsibility lies with the consultant. What goes on around that doctor-patient relationship varies among specialties and hospitals. In this sense administrative structures are negotiable; the core notion of clinical responsibility is not.

The value of this arrangement lies in its benefit to the patient. The question is moral as much as anything. When dealing with the profound matters which make up medical practice both parties must face each other as autonomous individuals. This is why consultants, rather than juniors, ought to be the people to break bad news and discuss matters of life and death—not because they are always more skilled or sensitive but because the junior is not an autonomous agent. The same applies to subconsultant grades and is another reason why the cheap option of subconsultant expansion should be resisted.

Such reasoning is the ultimate justification for a consultant led hospital service. Medicine is not only a science and skilled trade: there is an unavoidable moral element. This moral element—which probably explains the public's instinctive dislike of being cared for only by junior doctors—has never properly been addressed by the pyramidal hierarchy of a traditional consultant firm. Maintaining the core values of clinical autonomy and responsibility for patients with a much greater number of consultants should be an essential outcome of change. This goal is compatible with any number of different research, teaching, and administrative specialisations between consultants, or even managerial hierarchies (such as already exist in the clinical directorate).

The desirability of a consultant led service has been advocated for several decades without any serious attempt at reform.[2] Likewise unreformed have been the discredited educational traditions of the patient as an unwitting guinea pig; "see one, do one, teach one" as a principle of training: and "sink or swim" as a substitute for supervision.[4] The Calman report tackles these longstanding deficiencies. Despite the difficulties of its implementation, which must be handled with the greatest consideration for local and specialist needs, Calman offers the possibility of better quality hospital medical services. The role of consultants will be changed more radically than at any time since the foundation of the NHS. This is without doubt personally threatening and potentially disruptive to standards. But it is also a chance to remedy old abuses and move forward to something better. Future generations may judge consultants by how they responded to Calman.

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Midwives to manage uncomplicated childbirth

A proposal worth supporting

"What happens in pregnancy and childbirth is of the greatest concern to us all," said Britain's select committee on health last year.[1] That report has now been followed by another, from an expert working group chaired by Baroness Cumberlege.[2] It concludes that continuity of maternity care and communication between providers and recipients of care should both be improved. In particular, the report proposes that women with uncomplicated pregnancies should be offered comprehensive antenatal care from a small team of named midwives; the same midwives should then continue their responsibility through labour, calling in obstetricians only when complications arise or on request.

In many parts of Britain midwives are already in charge of antenatal care, and the policy to go still further makes sense to those who believe that continuity of care is desirable, that care shared between midwives and doctors is inevitably discontinuous, and that midwives can spot risk factors as well as obstetricians can.

It is hard not to believe that continuity of care is beneficial, and this is consistently identified as a priority, both by consumer representatives and in a poll carried out by the Market and Opinion Research Institute and published in the report. In theory, enhanced continuity of care for most women may result in less continuity for those who develop acute complications. But doctors are in short supply and must remain so if they are to maintain their skills: it is impossible for an obstetrician to know all the women in a service that is large enough to provide adequate experience. Furthermore, transfer of responsibility when necessary does not mean that the role of the named midwife is over: she can continue as a "friend in the system." Nor does the principle of continuity mean that women must be bound to a particular team of midwives or even to midwifery care in general.

Shared care results in couples seeing too many people, receiving contradictory advice, and failing to find a familiar figure at times of stress. Lines of responsibility should be quite clear, both to staff and to the couples themselves. When I am called to attend a woman with antepartum haemorrhage I need to be in full charge. Similarly, if labour is progressing well but threatens to overwhelm a woman she does not need me, she needs the self confidence that the familiar presence of her midwife can give.

There is no reason to suppose that midwives cannot spot problems as effectively as doctors, and this has been confirmed by trials collected at the Cochrane Centre in Oxford. Midwives now do degree courses, and there are professors of midwifery. The tort system is a powerful incentive to refer when appropriate, and clinical audit should not only maintain but enhance current standards.[3,4] These measures, rather than tribal insistence that doctors have the monopoly on vigilance, will enhance standards.

Changes in the organisation of maternity services will also make economic sense for Britain, which has about 35 000 practising midwives and 910 specialist obstetricians. But what will happen to the obstetricians? Surrendering power always causes misgivings, but I think that most obstetricians welcome the current trend: indeed, many have taken a lead in introducing these patterns of service. Nevertheless, the