itself. Surely doctors would also have to inform the woman that this perinatal mortality rate would, by their own data, still mean a risk increased 28-fold over that in delivery by caesarean section, and I doubt whether many women would find a risk presented in this way very reassuring.

But it is doubtful whether the authors are justified to use their figures for antenatal counselling purposes at all. It has to be recognised, for medicolegal as well as counselling purposes, that women for a "trial of vaginal delivery" and those who actually had a vaginal delivery represent overlapping but essentially different populations. Some women who deliver vaginally were not intended for a trial, and often were not even known to have a breech presentation, and many women who were planned to have a "trial" do not end up being delivered vaginally.

Antenatal counselling must emphasise the increased risk for intrapartum intervention, but the onus of proof for advising a routine intervention such as elective caesarean section must lie with the advocates of such a policy. Unless solid data to the contrary emerge, I will continue to counsel women with a mature fetus presenting by the breech that, given proper antenatal assessment and selection, and with modern methods of obstetric management, there is no evidence of any increase in perinatal mortality associated with a trial of vaginal delivery.

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Serotonin, gastric emptying, and dyspepsia

EDITOR,—In their paper on the role of central serotonin receptors in non-ulcer dyspepsia A Chua and colleagues claim that the prolactin response to buspirone provides an index of the function of central serotonin-1A receptors. Unfortunately for the authors, there is compelling evidence that this is not true and that antagonism of dopamine-D2 receptors is the main mechanism by which buspirone stimulates secretion of prolactin.

Firstly, buspirone binds with only slightly less affinity to dopamine-D2 receptors than to serotonin-1 receptors.¹ Secondly, in an isolated rat pituitary model buspirone was shown to antagonise the inhibitory effects of dopamine on release of prolactin.² Thirdly, in human studies comparison of buspirone with two related serotonin-1A agonists, gepirone and ipsapirone, shows that only buspirone potently stimulates secretion of prolactin whereas they all share similar effects on growth hormone, cortisol, and body temperature.³ This difference is probably due to gepirone and ipsapirone lacking significant affinity for dopamine-D2 receptors.

Fourthly, in an antagonist study using pindolol, a β blocker with serotonin-1A antagonist properties, we found that the growth hormone and hypothalamic responses to buspirone were abolished whereas there was only a small, non-significant reduction in the size of the prolactin response.⁴ Our negative finding has subsequently been replicated by another group.⁵ The study that Chua and colleagues cite in their support of their contention was of only two subjects⁶ and can be dismissed. Blockade of this response by metergoline and methysergide does occur but is probably due to their dopamine-D2 agonist properties,⁸ and, consistent with this, metergoline antagonises the prolactin response to haloperidol in normal

volunteers.⁹ Taken together, these lines of evidence mean that the authors' confident statement that secretion of prolactin stimulated by buspirone is a "good measure of the sensitivity of central serotonin-1A receptors" is not supported by the facts, which indicate dopamine-D2 mediation.

In conclusion, I remain sceptical about this and similar studies using the prolactin response to buspirone as an index of the function of serotonin-1A receptors, particularly when evidence indicates that the growth hormone or adrenocorticotrophic hormone response would be a more valid index.

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AUTHORS' REPLY,—Ian Anderson suggests that the prolactin response to stimulation with buspirone is mediated via dopamine-D2 receptors. Serum prolactin concentration can be increased by 5-hydroxytryptophan, direct acting serotonin agonists, and serotonin releasers, while serotonin receptor blockers lower prolactin concentrations.^{1,2} Investigators have also shown that the serotonergic stimulation of prolactin release is not by inhibition of dopaminergic activity.³

Buspirone is an agonist at presynaptic and postsynaptic 5-hydroxytryptamine type-1A (serotonin-1A) receptors. Its activity at presynaptic dopamine receptors, however, is not considered characteristic of the azapirones.^{4,5} When taken orally buspirone and gepirone, another azapirone with a highly selective ligand for brain serotonin-1A receptors, increase plasma prolactin concentrations.⁶⁻⁸ The fact that plasma prolactin concentrations were not affected by ipsapirone could be explained by its associated serotonin-1 receptor antagonist property.⁹ The prolactin response to buspirone seems to be at serotonin receptors, as suggested by the buspirone-metergoline study, and more specifically at the serotonin-1-like receptors (buspirone-pindolol study).⁷ The different results observed in prolactin suppression with pindolol (mixed agonist-antagonist properties at the serotonin-1A receptor) in Coccaro *et al*'s and Meltzer *et al*'s studies¹⁰ are due to the administration of different doses of D1-pindolol (higher doses tend to display serotonin-1A receptor agonist effects). Effects of buspirone on central dopaminergic receptors remain unresolved with conflicting agonist¹¹ and antagonist properties.

Studies in our unit with bromocriptine (a dopamine agonist) in patients with non-ulcer dyspepsia did not show any difference from findings in healthy controls (unpublished). Furthermore patients with non-ulcer dyspepsia treated with sertraline and fluoxetine (selective

serotonin reuptake inhibitors) show a precipitation of their symptoms initially, further supporting the theory of hypersensitive serotonergic receptors (this study is continuing).

In reply to Malcolm H Duncan's letter,¹² all the patients investigated in our study had dyspeptic symptoms of more than three months' duration with no concomitant symptoms or illness. They were all within 10% of their ideal body weight. As mentioned in our paper, they constitute up to 35% of our patients with functional dyspepsia. All the above patients underwent a full psychiatric assessment by a consultant psychiatrist, including completion of the comprehensive psychopathological rating scale.¹³ None of the patients studied had any evidence of psychiatric disorders.

Only one patient with non-ulcer dyspepsia had a prolactin response that overlapped that in the controls, though it was in the upper range of normal. One patient did have a particularly high response, but assessment of the prolactin response with geometric means showed a similar significant difference between patients and controls. Furthermore, later studies with other patients have shown similarly high responders.

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Hepatitis B vaccination

EDITOR,—There is a developing paradox in relation to hepatitis B vaccination of health care workers.

Firstly, we have the advice that, at least in adults, the immune status in relation to hepatitis B does not depend on the level of circulating antibodies—that the long term protection resides in the memory cells in the immune system.¹ We are told that no health care worker who has initially responded to the vaccine has developed hepatitis B infection or carrier status regardless of the reduc-

tion in the concentration of hepatitis B surface antigen.

Secondly, there is advice that if a surgeon is to continue operating he or she must either be known to have been immunised or have detectable hepatitis B surface antigen.² This advice is echoed in recommendations of the United Kingdom Advisory Group on Hepatitis, which says, "All staff who perform invasive surgical procedures . . . should be immunised against hepatitis B . . . and . . . their immunity should subsequently be checked."³

There is the possibility that health care workers who are immune, according to the first view, will be discriminated against. In our experience it is not uncommon for some individuals who are known to have responded to quickly become seronegative on routine testing. Further, it is well recognised that a few people persistently do not respond to the vaccine. Some Japanese authors describe the delayed-type hypersensitivity (DTH) skin reaction as "a useful and reliable marker for the acquisition of active cellular immune responsiveness of HBsAg."⁴ This may provide a solution. But in the absence of any standardised current test of the memory cells or of the cellular component of immunity against hepatitis B how would such discrimination be avoided?

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Disorienting stationary escalators

EDITOR,—Surely the answer to the disorientation that accompanies climbing or descending a stationary escalator¹ is that the stairs on a static escalator have disconcertingly unfamiliar graduated rises at the top and bottom, with higher rises than on normal stairs in between. As Bernard Dixon so accurately describes it, "The sensation becomes less odd as you go downwards, but stepping off at the bottom is equally disconcerting."

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1 Dixon B. Out of steps. *BMJ* 1992;305:1101. (31 October.)

Juniors' hours and conditions

EDITOR,—In her article on juniors' hours Fiona Godlee mentions that the task forces are responsible for seeing that juniors' living conditions are improved.¹ They should look into the difficulty of sleeping in many on call rooms.

Time and time again I find that when I eventually get to bed I am deprived of sleep by assorted disturbances: other doctors' telephones and bleeps going off (dividing walls seem to be paper thin); patient monitor alarms sounding; and busy nurses, porters, and relatives coming and going. At the crack of dawn (usually just before I get to bed) the cleaners arrive, greeting each other loudly and

singing while they polish the floors with a noisy machine. All this is against a background drone of unseen machinery punctuated by sounds from dyspeptic plumbing. Other sensory disturbances are no less infuriating: the light, be it from daybreak, streetlights, or carpark floodlights, which threadbare curtains do not keep out; rock hard or marshmallow soft mattresses; and, occasionally, foul smells.

Little time seems to have been given to finding ways of improving the quality of juniors' sleep while they are on call. Most of the above problems could be solved at minimal expense by considerate planning of the location of on call rooms and provision of adequate sound proofing and light proofing, such as double doors on rooms and lined curtains that cover windows fully. I hope that the task forces deploy some effort and money on this problem.

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1 Godlee F. Juniors' hours: is the end in sight? *BMJ* 1992;305:937-40. (17 October.)

EDITOR,—Fiona Godlee states that centrally funded consultant posts are allocated in order to reduce the hours of those who work for these seniors.¹ As a surgical house officer, I worked alongside another house officer for the same consultant. With the introduction of a newly appointed consultant my opposite number was removed and told to work for his new boss. My workload effectively doubled.

As Godlee recognises, there is still a long way to go in achieving a reduction in the hours and an improvement in the conditions endured by junior doctors. Guidelines may be set, but this does not mean that they are followed. An example is the filtering of out of hours calls by the night co-ordinator. Rightly, the aim is to let the night sister deal with some of the problems and to save up other calls until a reasonable hour. But it does not work; in practice, many nurses just bleep the doctor anyway.

Nurses are not permitted to give intravenous drugs if they completed their courses at alternative hospitals. But doctors do not attend courses on intravenous drips, let alone one at the hospital where they currently practise. And being tired is likely to lead to mistakes and to doses being given at erratic times.

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1 Godlee F. Juniors' hours: is the end in sight? *BMJ* 1992;305:937-40. (17 October.)

EDITOR,—Fiona Godlee's article on the problems facing regions attempting to reduce junior doctors' hours provides a useful summary of the current difficult situations.¹ She is not quite correct, however, when she states that regions "have no jurisdiction over senior house officer posts." The National Health Service (Vocational Training) Regulations (1979), introduced as a result of the National Health Service Act 1977, empower regional postgraduate committees to select posts for general practice training from the pool of posts approved by the specialty colleges. In practice this covers most senior house officer posts in accident and emergency, medicine, paediatrics, geriatrics, obstetrics and gynaecology, and psychiatry.

In the Oxford region all these departments are now being visited by a team that includes the postgraduate dean, a regional adviser in general practice, and the regional adviser in the specialty concerned. Particular attention has been paid to educational aspects and to living conditions. The exercise has provided the opportunity for a useful

dialogue and results in a report, which includes a list of good points and recommendations. In one case approval for general practice training was removed from an accident and emergency department because of inadequate supervision and monitoring, thereby stimulating the appointment of additional staff.

What started out as an exercise to improve training conditions for doctors intending to enter general practice has become a channel whereby the regional postgraduate education advisory board can monitor what is happening in a large percentage of the region's junior hospital posts.

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1 Godlee F. Juniors' hours: is the end in sight? *BMJ* 1992;305:937-40. (17 October.)

Partial shifts

EDITOR,—Fiona Godlee and D J Vassallo and colleagues highlight the difficulties in achieving reductions in juniors' hours.^{1,2} The surgical directorate at the Royal Hallamshire Hospital comprises seven general surgeons and seven house officers, with 114 acute surgical beds, a high dependency unit, and a day unit. The partial shift has one house officer on nights (seven days, 2300 to 0900) with the remaining six staff working days (0800 to 1800), cover (0800 to 2300), or take (0800 to 2400). Unlike at St Bartholomew's Hospital,³ a house officer is needed for evening cover because of the workload. Staff and measures introduced to facilitate the rota include a bed manager, phlebotomist, resident pharmacist, filing clerk, and admissions unit.

The main benefit is protected time off duty between shifts, but when house officers are on leave the remaining doctors work extra hours and are delayed in performing routine duties. Doctors who moved from a rota to the shift system were enthusiastic, but recent house officers who have experienced only the new system are sceptical about working evenings frequently, disrupted weekends, and restrictions on the timing of vacations. The August intake initially worked up to 20 extra hours but has improved with experience. This problem will recur annually, highlighting the need for improved induction courses.

The management has shown genuine commitment to complying with recommendations of the task force, but resistance has come from consultants who fear the end of the firm system and loss of continuity of care (because doctors fail to hand over patients adequately despite overlaps of one hour).

We will persist with the partial shift system because we do not believe that excessively long periods on duty are beneficial for doctors or their patients. Other units have been unable to adopt this system as it becomes impractical when there are insufficient doctors in the rota to allow for prospective cover. Partial shifts may work at St Bartholomew's Hospital, where there are fewer beds and more doctors, but to suggest that they can succeed in a district hospital by increasing cross specialty cover fails to recognise the excessive number of patients in such hospitals.

When all inappropriate duties have been re-allocated it will be apparent that there are not enough doctors for the volume of work. We disagree with Godlee that the answer is to form a subconsultant grade, which fails to serve the interests of patients and trainees. We support the aims of *Achieving a Balance*, with an increase in consultants (concomitant with an increase in