is still necessary. This workload can be reduced by writing prescriptions for longer periods—three or six months' supply at a time—but the worry that patients have a big stock of tablets in the medicine cupboard remains.

There is, of course, a much simpler way. Why not have a prescription that can be repeated a set number of times at specified intervals? A repeatable prescription would save time for both patients and doctors. It would shift the responsibility for dispensing drugs firmly back to the chemist, where it belongs. Doctors would have an incentive to plan their patients' care. They could advise patients how often they needed to be seen for genuine medical reasons. Dispensing of drugs, which is now a cumbersome two step procedure ("Collect the prescription from the doctor and take it to the chemist"), would become much simpler. Patients would not have to keep huge stocks of hazardous drugs at home. Even chemists might approve of the idea, as it would encourage customers to visit the same pharmacy regularly and each repeat would attract a dispensing fee.

Why has the NHS never adopted this system? Repeatable prescriptions are routinely issued in many countries. They are even in wide use in Britain, but only in the private sector. Wherever patients have to pay to see doctors there is pressure to reduce the number of wasteful and unnecessary consultations. Writing six prescriptions when one would do is a waste of time. Doctors who use their time in this way feel belittled and valueless.

The standard NHS prescription form would need to be changed to allow for repeats. And chemists would have to introduce new systems to ensure that prescriptions did not get lost and that they were paid for each time they supplied a "refilled" prescription. Is it beyond the wit of the NHS to introduce this? I hope not but I expect it is.

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Rugby injuries

SIR,—In their editorial on rugby injuries W M Garraway and colleagues suggest that registers of injuries incurred during rugby should be set up.[1] As chairman of the Rugby Football Union's prevention of injuries working party I would like to draw attention to several facts.

Firstly, the Rugby Football Union has, for the past 10 seasons, been encouraging all clubs and schools in England to register with the union all the injuries incurred by their first two teams, just as the editorial recommends.

Secondly, so that the information can be analysed a standard format for recording injury is made available to be completed by non-medical people; just as the editorial recommends.

Thirdly, all information is fed into our computer and we publish reports annually. As a result of our work the laws of the game have been altered to help make the game safer, and advice has been promulgated to all coaches throughout the country, just as the editorial suggests might happen if such research was undertaken.

Finally, it is not possible to enforce registration as the editorial suggests. We are aware that this was done for American football in the United States, but there they were dealing with a professional game. In Rugby Union football, an amateur game, we have to rely on the good will and enthusiasm of unpaid officials to produce the information. Only a small percentage of clubs and schools think it necessary to send us their information on injuries; they do not seem to perceive the incidence of injury as worrying.

We at Twickenham wish to reduce the incidence of injury as much as possible, and that is why, many years ago, we introduced the scheme suggested by Garraway and colleagues. I agree with their thinking, but we need to receive more cooperation from a larger number of clubs and schools so that our research can be of even greater value.

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1 Garraway WM, Macleod DAD, Sharp JCM. Rugby injuries. *BMJ* 1991;**303**:1082-3. (2 November.)

Assault after ingestion of antidepressant

SIR,—Matthew Patrick and Roger Howells suggested that paradoxical disinhibition by sedative drugs may explain reports of uncharacteristic violence after ingestion of amitriptyline.[1,2] This does not, however, explain the similar observations made on fluoxetine ("The Prozac File," *Despatches*, Channel 4, 19 Dec 1990) as fluoxetine has little sedative action.[3]

We suggest that antidepressants may cause uncharacteristic violence or mania, or both, in those patients with a predisposition to manic-depressive illness. This effect may be greatest with antidepressants that affect inhibition or serotonin re-uptake. Amitriptyline and fluoxetine have such an action.

Interestingly, there is an association between low cerebrospinal fluid concentrations of the serotonin metabolite 5-HIAA and impulsive aggression,[4] and depressed subjects with low concentrations of this metabolite in their cerebrospinal fluid may be more vulnerable to developing mania when receiving antidepressants that significantly inhibit serotonin re-uptake.[5] It may be that subjects with low serotonin turnover are predisposed to develop uncharacteristic violence after taking certain antidepressants. This is clearly an area that requires further study.

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1 Patrick M, Howells. R. Assault after ingestion of antidepressant. *BMJ* 1991;**303**:1200. (9 November.)
2 Sugarman P, Hughes T. Assault after ingestion of antidepressant. *BMJ* 1991;**303**:720. (21 September.)
3 Cooper GL. The safety of fluoxetine—an update. *Br J Psychiatry* 1988;**153** (suppl 3):77-86.
4 Linnoila M, Virkkunen M, Scheinin M, Nuutila A, Rimon R, Goodwin F. Low cerebrospintal fluid 5-hydroxyindole acetic acid concentration differentiates impulsive from non-impulsive violent behaviour. *Life Sci* 1983;**33**:2609-14.
5 Bunney WE Jr, Murphy DL, Goodwin FK. The switch process in manic depressive illness: I. A systematic study of sequential behavioral changes. *Arch Gen Psychiatry* 1972;**27**:295-302.

Changing patterns of work

SIR,—In his article on changing patterns of work Peter Doyle describes a four person partial shift system in which the number of hours worked weekly averages 63·5.[1] He unfortunately omits to mention the 36 weeks' study and annual leave taken by four people during the year and the 20 days in lieu of shifts worked on public holidays, resulting in the need for at least 0·8 full time equivalent person.

Few district general hospitals employ more than three senior house officers in the small but onerous specialty of paediatrics. Cross cover is not feasible because of the special skills needed (and the strain on consultants until these skills are acquired, in the absence of middle grade staff). Therefore two extra people are needed and restrictions on manpower do not allow these to be senior house officers (despite the demand for more training posts in paediatrics by trainee general practitioners). The only option then is the new staff grade.

We must be grateful that it seems that the staff grade can be employed on the partial shift system, but how many of these doctors will wish to spend the rest of their lives as a house officer? And where will these doctors go when they are too old to put up drips or intubate neonates—or even lose the ability to adapt to shift working? Or must they work only by day so that trainees work their shortened week, but all in the hours of darkness?

Many units, not only in paediatrics, are in the same situation. How far do 50 new posts stretch? And we have not started to approach the implementation of the safety net recommendations, requiring a further three middle grade doctors in units where trainee general practitioners provide most senior house officer cover. Or do we accept that a consultant in an onerous specialty will forever be required to work hours that would be considered to be an unfair imposition on the registrar (if there was one)?

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1 Doyle P. Changing patterns of work. *BMJ* 1991;**303**:982-4. (19 October.)

Audit of radiological investigations

SIR,—The results of the audit of radiological investigations by the Royal College of Radiologists Working Party show a clear need for wider education of clinicians on the benefits, risks, and limitations of radiological investigations.[1] In their discussion the authors make the statement that most hospitals in England and Wales cannot assure compliance with the Ionising Radiation Regulations, 1988. They base this statement, which has already been quoted in the national press, on two grounds. Firstly, they know of only eight hospitals with computer systems capable of monitoring workload to the extent required, and six of these were included in their study. I suggest that the number may be higher as the North Manchester General Hospital, and thus presumably other hospitals unknown to the working party, has been computerised to this extent for several years.

More importantly, the working party states that this degree of workload analysis is required in law to comply with the 1988 regulations. As far as I am aware this is not the case, and this interpretation of the law has never to my knowledge been stated in radiation protection circles. In their interpretation of the regulations the working party states that "Compliance with the Ionising Radiation Regulations (1988) requires organisations responsible for providing *x* ray examination facilities to establish procedures to ensure that patients receive no more diagnostic radiation than is clinically necessary." The use of guidelines for radiological investigations and the audit of investigations is to be encouraged, but contrary to the working party's statement it is not, at present, a legal requirement. Review of the regulations suggests that the working party has based its statement on section 4(3); but the regulations are primarily concerned with radiation protection training, and section 4(3) applies to "physical" directors (who are radiographers in over 95% of exposures) of radiation and not to the "clinical" directors of radiation, these definitions being clearly stated at the introduction of the statute.

Once the Royal College of Radiologists' guidelines have become accepted practice it will effectively be illegal not to follow them, as stated by section 4(2) of the 1988 regulations: "No person