

lack of available colleagues at one time on the ward). Work compression could also reduce job satisfaction and working conditions and further contribute to sickness absence although this is hypothetical and cannot be specifically concluded from this particular study. I would suggest that measures of task density (although difficult to quantify) as an index of work compression should be included in future studies on the effects of EWTD.

Other relevant measures that would have been informative from this study include job sickness rates among more senior medical staff and nursing staff to assess whether the deleterious effects of the EWTD among the well-being of junior medical staff had more far reaching effects on other staff as a consequence. As a final observation, the pre-EWTD sickness rate of having 14% of the total junior medical staff absent on more than one occasion per year seems high (albeit much less than the 38% post-EWTD). Could it be that even a 56-hour working week causes significant work compression (compared to previous longer working weeks) with its resultant adverse effects on well-being, which has been amplified further in the 48-hour week? Strategies and solutions should therefore focus on improvements in task density and other indices of work compression as useful endpoints, as well as the other factors discussed by McIntyre and colleagues in their study.

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European Working Time Directive (2)

Editor – We note with interest the findings of McIntyre *et al* (*Clin Med* April 2010 pp 134–7), although we question the conclusions they reached regarding the role of the European Working Time Directive (EWTD) in increases in sickness absence among junior doctors. Not for the first time, the implementation of the EWTD has been linked to negative effects on junior

doctors' fatigue and well-being.¹ However, we believe that the heightened problems should not necessarily be blamed on the EWTD itself. It is our contention that many of the problems have arisen because of the way in which employers responded in their attempts to comply with the EWTD. While the new work schedules may conform to the EWTD's stipulations (eg a minimum daily rest period of 11 hours), they often fail to take into account other parameters which, although not covered by the EWTD, are nevertheless vital considerations in the management of fatigue.

We recently reported the findings of a large-scale survey of junior doctors in which we showed that such additional parameters are important determinants of the likely impact of EWTD-compliant work schedules on junior doctors' fatigue and well-being.² For example, working more frequent on-calls (either at weekends or during the week) was associated with increased psychological strain and work-life interference, while being restricted to only one rest day after working nights was associated with greater fatigue. In support of the EWTD stipulations, we found that working >48 hours per week and short rest inter-shift intervals were both independently associated with increased fatigue. We also demonstrated that working seven consecutive nights was associated with greater accumulated fatigue and greater work-life interference, compared with working just three or four nights.

We would therefore argue that it is difficult to draw any firm conclusions from the study of McIntyre *et al* regarding the cause of increased sickness absence among doctors following the introduction of the EWTD-compliant working time arrangements, without knowing the way in which the new schedule was implemented and what changes in work schedule features were involved.

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In response to both

In preparing our manuscript we found little formal research into junior doctor welfare. It seems paradoxical that the European Working Time Directive (EWTD) sought to improve this measure without a clear understanding of how this might best be attained. In the face of constant demand, a reduction in trainee hours without increase in numbers permits four scenarios that allow medical care to continue safely. The first is that prior to the reduction in hours there was large inefficiency (>10%). This has not, to our knowledge, been demonstrated. If such inefficiency were not present then, as Medford suggests, either work is being redistributed, omitted or compressed. Significant redistribution of medical work would be needed to cover the loss of nearly one seventh of the medical workforce. While nursing sickness rose during the period covering the introduction of the 48-hour week this finding is confounded by simultaneous alteration to bank staff remuneration which resulted in lesser bank usage. We do not have accurate data on consultant sick leave. Our finding that inpatient mortality and duration of hospital admission were not compromised supports the interpretation that work was not omitted. We may then speculate that work compression and task density must have increased. This effect will be amplified, as we indicated, with higher rates of sickness in a smaller group of trainees. Medford notes that the measurement of work compression and the impact of such compression upon trainees is difficult to assess, however, we found significant psychological stress in two of 15 trainees in a small (non-validated and unpublished) follow-up study. This merits further research.

We welcome the comments of Tucker and Folkar and note their contention that it is not the reduction in hours per se but the response of the employer, through rota design, that may be responsible for any negative effects. Underpinning this conclusion must be the fundamental assumption that that the same workload can safely be achieved, for both patients and staff, with reduced hours and less staff. Little guidance was available in meeting the 48-hour limit. We agree that enhanced rota design might improve the impact of EWTD implementation, but note that the authors refer to the 'likely (our italics) impact of EWTD-compliant work schedules'. We are thus unclear if they were able to show that it is possible, without increasing staff numbers, to construct such a rota, meet full EWTD compliance and maintain workload and safe patient outcome? We would thus be concerned if attention were prematurely drawn away from the reduction in hours towards the responsibilities of the employer. We acknowledge that there are many uncertainties. Although our study has obvious limitations we sought to be as objective as possible in an attempt to lessen the speculation of ourselves and others. Contrary to the expectation of some, we did not find a reduction in standards of care. We did, however, find that sickness among trainees was markedly increased. This requires explanation. Surely trainees deserve more formal assessment of alternative ways of providing safe patient care while meeting EWTD compliance before it can be confidently stated that a working week of 48 hours is good for their welfare and training? We would hope such a view is shared by Tucker and Folkar and endorsed by all those with responsibility for junior doctors.

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What about physical activity and exercise medicine?

Editor – Adlan *et al* lay bare an institution-alised and unbalanced portrayal of obesity treatment and their conclusions appear misleading (*Clin Med* April 2010 p 206).

Obesity and type 2 diabetes are symptoms of pandemic physical inactivity and poor diet making their results far from surprising.¹ The authors omit any reference to physical activity preferring to concentrate on diet and medication as the only alternatives to bariatric surgery. Physical activity is of fundamental importance as a primary treatment (along with diet) for obesity, type 1 and type 2 diabetes. It is concerning that they conclude there is a lack of effective alternative treatments, while evidence for physical activity interventions suggests the contrary.^{2–4}

Moreover, recent systematic and Cochrane reviews evaluating surgery for obesity are inconclusive, as long-term data on numerous outcome measures remain unknown.^{5,6} Recent research suggests that the most obese and those with existing comorbidities are at the greatest risk of post-bariatric surgery mortality and this could be very relevant to many patients in a secondary care diabetic clinic, when compared to those managed in primary care.⁷

Admittedly, there is a deficiency of training on physical activity and exercise medicine within undergraduate and postgraduate medical education, a lack of comprehensive physician training to counsel patients effectively on lifestyle modification (and physical activity promotion) and a lack of provision of well-constructed physical activity schemes across the UK for patients with chronic disease.

However, is it not misleading for surgery to be portrayed as the only effective 'magic bullet' treatment for obesity and made increasingly available? Lee *et al* demonstrated in a prospective study, following 21,925 men, that obesity-related health risks are reversed by physical activity even without weight reduction, while the benefits of leanness are lost through physical inactivity.⁸

When these issues are addressed and considered holistically, perhaps physicians will be better placed to manage patient expectations and treatment with balance and, most importantly, with a sound evidence base.

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In response

We are grateful to Weiler for his response. A close reading of our report would show him that our aim was to demonstrate the high prevalence of obesity qualifying for bariatric surgery in hospital diabetic clinic attendees. In doing so we hoped to highlight the lack of an adequately funded multidisciplinary bariatric surgery service. It was not our intention to make direct comparisons of treatment options for obesity eg exercise versus bariatric surgery. However, there are several points we would like to make.

- We do not portray surgery as a 'magic bullet'. The indications for bariatric surgery in these patients are well defined in National Institute for Health and Clinical Excellence guidelines as quoted and is reserved for those who have failed a trial of diet, exercise and drugs.¹
- There are numerous studies in well-motivated obese diabetic patients,