- 3 **Department of Health.** *Working together to protect children.* London: HMSO, 1989.
- 4 **Howells JG.** *Remember Maria.* London: Butterworth, 1974.
- 5 **Laming, Lord.** *The Victoria Climbié inquiry.* Report of an inquiry by Lord Laming. Cm 5730. London: Stationery Office, 2003.
- 6 **Department of Health.** *Working together to safeguard children.* London: Stationery Office, 2006.
- 7 **Harris D, Patel T, Dunne J, et al.** Implementation of the healthcare recommendations arising from the Victoria Climbié report. *Arch Dis Child* 2007;**92**:71–2.
- 8 **Shabde N.** Child protection training for paediatricians. *Arch Dis Child* 2006;**91**:639–41.
- 9 **Royal College of Paediatrics and Child Health.** *Child protection companion.* London: RCPCH, 2006.
- 10 **Maguire S, Mann M, Sibert J, et al.** Can you age bruises accurately in children? A systematic review. *Arch Dis Child* 2005;**90**:182–6.
- 11 **Royal College of Paediatrics and Child Health.** *Responsibilities of doctors in child protection cases with regard to confidentiality.* London: RCPCH, 2004.
- 12 **Department of Health.** Connecting for health. www.connectingforhealth.nhs.uk (accessed 27 March 2007).
- 13 **Royal College of Pathologists and Royal College of Paediatrics and Child Health.** *Sudden unexpected death in infancy.* London: RCP and RCPCH, 2004.
- 14 **Department of Health.** *Safeguarding children: a joint chief inspectors' report on arrangements to safeguard children.* London: Department of Health, 1989.
- 15 **Batt J.** *Stolen innocence. A mother's fight for justice.* London: Ebury Press, 2004.
- 16 **Law Commission.** *Murder, manslaughter and infanticide.* Law Commission No.304. London: Stationery Office, 2006.
- 17 House of Lords, 2001. Hansard 17th October 2001, Column 645.
- 18 **Department of Health.** *Bearing good witness. Proposals for reforming the delivery of medical expert evidence in family law cases.* London: Department of Health, 2006.

The Working Time Directive

The implications of the Working Time Directive: how can paediatrics survive?

Colin Campbell, Stephen Andrew Spencer

The changes necessitated by the Working Time Directive are likely to be painful but can be ameliorated by careful planning

In August 2004 the Working Time Directive (WTD) came into force for doctors in training, imposing a maximum of 58 working hours per week with minimum rest requirements. The next challenge will be WTD 2009, which takes the maximum working hours down to 48.¹ For many of us trying to cope with service and training demands and achieve a reasonable work-life balance this may seem a step too far.

The WTD limit already applies to nurses and other National Health Service (NHS) staff including consultants and staff grade doctors. Doctors in training will no longer be exempted from the original WTD, now enacted in the UK as part of health and safety law as the Working Time Regulations (WTR).² The WTR specify maximum hours of work and minimum rest periods based on the SIMAP³ and Jaeger⁴ judgements in the European Court of Justice. All time spent resident in the hospital, even if sleeping, is to count as working time for the purposes of the directive. Taken in conjunction with the New Deal,⁵ working time is limited to 13 h in any 24 with at least an 11 h rest between shifts. These constraints are of particular importance in rota design when providing 24 h emergency cover. An absolute minimum of eight practitioners is currently required to run a basic full shift system. A rota "cell" model⁶ using at least 10 doctors has been proposed to give extra cover for periods of peak activity and facilitate

greatly improved handover. When the 48 h week is implemented, a rota cell of even 10 doctors will be under considerable pressure, further limiting time for experience in clinics and other non-acute work.

There are several radical changes taking place simultaneously within the NHS, even more than envisaged in the RCPCH report by Professor Sir David Hall in 2002.⁷ The most significant in relation to the WTR are the Changing Workforce agenda¹ and Modernising Medical Careers (MMC).⁸ MMC implementation will strictly limit the number of training places in each specialty with the intention of supplying estimated future workforce needs. Training will be more structured and focussed to include specific assessments of competence. These must be verified and documented.^{8,9} Most training and assessment will be done within the workplace and all within working hours in the context of reduced contact time between consultants and trainees. Consultants are also increasingly expected to deliver service personally and to meet increasingly challenging service targets.

NEONATAL SERVICES

An additional pressure for paediatrics is the Department of Health review of newborn services.¹⁰ This defines three different levels of newborn care and staffing requirement. Level 3 (full intensive care) requires two tiers of cover separate from

general paediatrics; level 2 (high dependency and short-term intensive care) requires one separate basic tier but allows sharing of the middle tier with general paediatrics. Level 1 (special care and emergency resuscitation) is essentially nurse led and does not require any separate medical cover from general paediatrics. Whether level 1 is generally viable when separated from paediatrics as in the Ashington model is still open to debate.¹¹

The following scenario is typical of the current and emerging difficulties in the neonates and obstetrics services.

Take three hospitals (A, B and C) within a radius of 10 miles, serving a combined population of 800 000 and with a combined delivery rate of 11 500 per annum. Each of the three hospitals currently has acute in-patient paediatrics. High-risk obstetrics is practiced on all three sites. A level 3 neonatal unit is justified in one of the hospitals (A) and a level 2 neonatal unit is required on each of the remaining two sites (B and C) to provide cover for the maternity services.

To cover general paediatrics and neonates, hospital A will require two basic and two middle grade tiers for 24 h cover. Hospitals B and C will each require two basic and one middle grade tier. For legal rotas, each tier currently requires a minimum of eight doctors. Therefore, together the three hospitals require a minimum of 48 basic level practitioners (advanced nurse practitioners (ANPs) or paediatric trainees) and 32 middle level practitioners to run all three hospitals. In 2009 the numbers will increase to 60 at the basic level and 40 at the middle level.

This level of staffing is unlikely to be practical or affordable. Numbers of specialty trainees and trained nurse practitioners will be limited. The population could not realistically provide enough experience for all those doctors in training.

Abbreviations: ANP, advanced nurse practitioners; MMC, Modernising Medical Careers; NHS, National Health Service; WTD, Working Time Directive; WTR, Working Time Regulations

Reducing the tiers will have consequences. Closing one paediatric unit to overnight general paediatrics may save 10 basic level practitioners but would create difficulties for covering the level 2 neonatal unit. Downgrading to level 1 will prevent a hospital practicing high-risk obstetrics.

PRACTICAL CONSIDERATIONS

How are these competing challenges to be addressed? In 2004, WTD compliance was achieved by stretching rotas and employing more medical staff to plug the gaps. In the intervening period most units have achieved full shift rotas, but with severe compromises in rota quality due to barely sufficient doctor numbers. Further tweaking of the current system will not be successful and certainly not sustainable. More fundamental change is required to provide stable solutions.

Role change for non-medical staff

ANPs may be employed to carry out "medical" duties. In neonatology, ANPs have been successfully combined with senior house officers to create a hybrid shift for the basic tier and, where sufficiently skilled, might be used in place of middle grade doctors. Without doubt, this will be an important component of any future solution, but it is not an easy or cheap option. The lead-time for training ANPs is long and the funding of training and backfill remains a serious constraint. There is still a lack of recognised training courses, qualifications and clear career progression. A high throughput is required to maintain skills and justify expenditure.

Senior doctors resident on-call

This model has been implemented successfully in some intensive care and emergency areas, either with a full consultant rota or by consultants sharing second tier slots with staff grades and/or specialist registrars. The Department of Health Review of Neonatal Services¹⁰ envisages consultants resident on a level 3 intensive care unit at all times. The principle is that each person on the rota must be capable of performing satisfactorily at the appropriate level. This paves the way for the "senior medical appointment" at the end of the new-style specialist training.¹² However, little thought has been given to the future career path for senior medical appointments as it seems most unlikely that doctors in acute specialities will be prepared to work shifts over their whole career, especially with the predicted rise in retirement age.

Hospital at Night

The Hospital at Night (H@N)¹ model is proposed as a potential solution for

emergency services and for out-of-hours care. It involves a resident multi-professional generic team dealing with all acute admissions and events out-of-hours with specialist back up off-site. This is a key strategy in most district general hospitals' plans for adult services. The H@N team will replace resident specialty rotas for adults but will not cross-cover paediatrics and obstetrics.¹³ Modifications of this model should be successful in children's hospitals where there are several specialities currently with separate on-call teams.

Service re-configuration

Service re-configuration would concentrate current staff numbers on fewer sites providing 24 h care. This is a realistic option to deliver paediatric and obstetric care while achieving WTR compliance. It is attractive in that it maximises efficiency for full-shift teams, whatever their composition, and will provide sufficient workload to maintain skills. Training can be further enhanced by developing rotations through acute units and ambulatory-only units, enabling trainees to acquire the experiences and competences needed for specialist practice in a variety of settings. However, serious service re-configuration is notoriously difficult to achieve. There are inevitable knock-on effects for other services within the hospital and the local health economy, and the public often perceive the change as a cost driven service reduction. Change cannot be achieved quickly because of the need for public consultation.

As the Department of Health recognised that paediatrics and obstetrics pose special problems in achieving WTD compliance, each Strategic Health Authority was offered funding in 2004/5 to facilitate the development of innovative solutions, with further funding provided the following year. In the West Midlands this funding is being used to facilitate networking between adjacent Trusts with a view to rationalising services,¹⁴ the development of a Maternity Network¹⁵ and the establishment of a West Midlands Re-configuration Board.

There are also National Workforce projects, the one most relevant to paediatrics being the North Central London Paediatric Services Project.¹⁶ It has four modules which should be of considerable interest as the findings emerge which aim to:

- optimise deployment of existing medical staff,
- develop new models for service and education delivery,
- reduce dependence on medical staff and
- reduce dependence on hospital services.

Linked to the National Workforce projects is the Maternity and Paediatrics Workforce Project which is managed by the Care Services Improvement Partnership (CSIP)¹⁷ who have a team available to advise on local issues.

CONCLUSION

The next 3 years will see the biggest change in the medical and non-medical workforce, training and practice since the inception of the NHS. Almost every aspect of a doctor's working life will change. Currently, trainees are juggling shifts and daytime work and becoming understandably frustrated and disillusioned. So are consultants, who are supervising training with limited contact time for meaningful assessment and learning by apprenticeship. In the near future small units will no longer survive by employing medical staff for long hours, albeit at low intensity. Given the constraints, there seems no option but to severely curtail the number of sites on which resource-hungry 24 h medical cover is to be provided. Exactly how this should be done in each locality must not be decided centrally but will be informed by evidence from the current projects. Clinical networks are likely to be an important component of the solution. Implementing these changes should lead to safer and more comprehensive care for children as well as better training and job satisfaction for trainees and consultants. The current annual job planning exercise will enable consultants in acute units to expand their interests and be challenged in different ways with increasing seniority. There is light at the end of the tunnel, but the transition is likely to be painful. This can be ameliorated by deliberate planning, involving cooperation rather than directives and avoiding politically driven quick fixes which would be unsustainable in the longer term.

Arch Dis Child 2007;**92**:573–575.

doi: 10.1136/adc.2006.094912

Authors' affiliations

Colin Campbell, Stephen Andrew Spencer, University Hospital of North Staffordshire NHS Trust, Stoke-on-Trent, UK

Correspondence to: Stephen Andrew Spencer, Neonatal Unit, Maternity Hospital, University Hospital of North Staffordshire NHS Trust, Newcastle Road, Stoke-on-Trent ST4 6QG, UK; andy.spencer@uhns.nhs.uk

Accepted 5 February 2007

Competing interests: None.

REFERENCES

- 1 NHS. National Workforce Projects. <http://www.healthcareworkforce.nhs.uk> (accessed 16 March 2007).

- 2 *The Working Time Regulations 1999*. London: Stationery Office. <http://www.opsi.gov.uk/si/si1999/19993372.htm> (accessed 16 March 2007).
- 3 **Council of European Municipalities and Regions**. Position on the Commission's communication on working time. http://www.ccre.org/prises_de_positions_detail_en.htm?ID=26 (accessed 16 March 2007).
- 4 **Department of Health**. Jaeger judgment: information for NHS and social care employers. http://www.dh.gov.uk/PolicyAndGuidance/HumanResourcesAndTraining/WorkingDifferently/EuropeanWorkingTimeDirective/EWTDGuidanceLinksArticle/fs/en?CONTENT_ID=4068970&chk=o8qFL1 (accessed 16 March 2007).
- 5 **Department of Health**. Table of New Deal requirements: hours of work and rest requirements - a comparison. <http://195.33.102.76/assetRoot/04/06/92/04/04069204.pdf> (accessed 16 March 2007).
- 6 **Royal College of Physicians**. Designing safer rotas for junior doctors in the 48-hour week. Report of a multidisciplinary working group. <http://www.rcplondon.ac.uk/pubs> (accessed 16 March 2007).
- 7 **Royal College of Paediatrics and Child Health**. The next ten years: educating paediatricians for new roles in the 21st century, January 2002. http://www.rcpch.ac.uk/doc.aspx?id_Resource=1867 (accessed 16 March 2007).
- 8 **NHS**. Modernising medical careers. <http://www.mmc.nhs.uk> (accessed 16 March 2007).
- 9 **Royal College of Paediatrics and Child Health**. Training paediatricians of the future - 2005 update. http://www.rcpch.ac.uk/doc.aspx?id_Resource=1990 (accessed 16 March 2007).
- 10 **Department of Health**. Report of DH expert working group on neonatal intensive care services, 2003. http://www.londonpaediatrics.org.uk/trpg/NSF_Neonatal.pdf (accessed 16 March 2007).
- 11 **Hall D, Wilkinson A**. Neonatal services provided by advanced neonatal nurse practitioners at Ashington - what have we learned in the first five years? June 2001. http://www.healthcareworkforce.nhs.uk/images/Projects/maternityandpaediatrics/ashington_report.pdf (accessed 16 March 2007).
- 12 **NHS**. Modernising medical careers. MMC career map. <http://www.mmc.nhs.uk/pages/interactive-diagram> (accessed 16 March 2007).
- 13 **RCPC**. Position statement on the European Working Time Directive and cross cover arrangements (2004). http://www.rcpch.ac.uk/doc.aspx?id_Resource=1678.
- 14 **Partners in Paediatrics**. <http://www.partnersinpaediatrics.org.uk> (accessed 16 March 2007).
- 15 **Staffordshire, Shropshire and Black Country Neonatal Network**. <http://www.newbornnetworks.org.uk/staffs/> (accessed 16 March 2007).
- 16 **North Central London Paediatric Services abridged project outline**. http://www.healthcareworkforce.nhs.uk/working_time_directive/pilot_projects_locations/north_central_london_paediatric_services.html.
- 17 **Care Services Improvement Partnership (CSIP)**. Working time directive. <http://www.csip.org.uk/our-initiatives/workforce/working-time-directive.html> (accessed 16 March 2007).

ARCHIVIST.....

Coeliac disease and diabetes

It has been known for 30 years or more that there is an association between type 1 diabetes and coeliac disease. About 5% of children and adolescents with type 1 diabetes have coeliac disease, which may be asymptomatic or atypical. A study at a London paediatric diabetes clinic (C Goh and K Banerjee. *Postgraduate Medical Journal* 2007;**83**:132-6) has provided more data about the prevalence and clinical features of coeliac disease in these children.

The study population consisted of 58 males and 55 females, all under the age of 19 years (mean 12.1 years, range 6.5-17.2 years) and with type 1 diabetes. Seven patients (6.2%) had positive tests for coeliac antibodies (antiendomysial and tissue transglutaminase or antigliadin antibodies, or both) and five of these seven (4.4% of the 113 patients) had coeliac disease confirmed by jejunal biopsy (one had a negative biopsy and one has not yet had a biopsy). The time between the diagnosis of diabetes and the diagnosis of coeliac disease varied widely. Of the five patients with confirmed coeliac disease, one had no symptoms, four had recurrent abdominal pain, two had weight loss and two had recurrent hypoglycaemia. Coeliac disease did not affect growth or diabetic control. The effect of a gluten-free diet on the diabetes could not be assessed adequately. Two of the seven patients with coeliac antibodies had autoimmune thyroid disease, one with hypothyroidism and one with hyperthyroidism. Non-adherence to a gluten-free diet may be common among patients with diabetes and coeliac disease and the avoidance of gluten-containing sources of carbohydrate may be difficult. Nevertheless, untreated coeliac disease carries a risk of loss of bone density and of gastrointestinal malignancy and the authors of this paper recommend periodic screening of children with type 1 diabetes for coeliac disease.