

allaying any residual worries consequent on putting this piece of automation into practice, while the doctor reflects with Mark Twain that there is something fascinating about science as one gets such wholesome returns of conjectures out of such trifling investment of fact.

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- 1 Bagrit L. *The age of automation*. London: Weidenfeld and Nicholson, 1965:61.
- 2 Bruton DM. Medical aspects of cathode ray tube display systems. *Transactions of the Society of Occupational Medicine* 1972;22:56-7.
- 3 Health and Safety Executive. London: *Visual display units*. HMSO, 1983.
- 4 Doelen JV, MacDonald H. Cashier workstation ergonomics. *Occupational Health in Ontario* 1985;6:26-33.
- 5 Starr SJ, Shute SJ, Thompson CR. Relating posture to discomfort in VDT use. *J Occup Med* 1985;27:269-71.
- 6 Anonymous. APEX gets agreement on VDUs at International Harvester and Coventry Climax. *Health and Safety Information Bulletin* 1980;54:5-7.
- 7 Anonymous. New APEX guidelines and ASTMS agreement on VDUs. *Health and Safety Information Bulletin* 1981;65:3-6.
- 8 Anonymous. National agreement on VDUs in the Civil Service. *Health and Safety Information Bulletin* 1983;93:5-9.
- 9 Anonymous. Official guide and new agreements on VDUs. *Health and Safety Information Bulletin* 1983;90:9.
- 10 Anonymous. VDUs, eyesight and operator welfare—an update. *Health and Safety Information Bulletin* 1982;83:2-5.
- 11 Hirming CR, Aitken JH. Cathode-ray tube x-ray emission standard for video display terminals. *Health Phys* 1982;43:727-31.
- 12 Pomroy C, Noel L. Low-background radiation measurements on video display terminals. *Health Phys* 1984;46:413-7.
- 13 Weiss MM, Petersen RC. Electromagnetic radiation emitted from video computer terminals. *Am Ind Hyg Assoc J* 1979;40:300-9.
- 14 Cox E. Electromagnetic radiation emissions from visual display units: a review. *Displays Technology and Application* 1983;4:7-10.
- 15 Jeavons PM, Harding GFA, Drasdo N, Furlong PLF, Bishop AI. Visual display units and epilepsy. *Lancet* 1985;ii:287.
- 16 Binnie CD, Kasteleijn-Nolst Trenite DGA, de Korte R, Wilkins A. Visual display units and risk of seizures. *Lancet* 1985;ii:991.
- 17 Rycroft RJG, Calnan CD. Facial rashes among visual display unit (VDU) operators. In: Pearce BG, ed. *Health hazards of VDTs*. London: Wiley, 1984:13-5.
- 18 Nilsen A. Facial rash in visual display unit operators. *Contact Dermatitis* 1982;8:25-8.
- 19 Tjonn HH. Report of facial rashes among VDU operators in Norway. In: Pearce BG, ed. *Health hazards of VDTs*. London: Wiley, 1984:17-23.
- 20 Lee WR. Little shocks. *Practitioner* 1981;225:1679-83.
- 21 Bergqvist U. Physical and chemical environments at VDT work stations—air ions, electrostatic fields, magnetic fields and PCBs. In: Pearce BG, ed. *Allegations of reproductive hazards from VDUs*. Loughborough: Humane Technology, 1984:55-64.
- 22 Marha K. Electric and magnetic fields around VDTs—review of biological effects. In: Pearce BG, ed. *Allegations of reproductive hazards from VDUs*. Loughborough: Humane Technology, 1984:65-98.
- 23 Rycroft RJG, Smith WDL. Low humidity occupational dermatoses. *Contact Dermatitis* 1980;6:488-92.
- 24 Anonymous. Medical briefing. The screen of fear. *The Times* 1984 Nov 16:12 (cols 5-7).
- 25 Miller JF, Williamson E, Glue J, Gordon YB, Grudzinskas JG, Sykes A. Fetal loss after implantation—a prospective study. *Lancet* 1980;ii:554-6.
- 26 Knill Jones RP. Occupational factors and pregnancy outcome in doctors. London: Faculty of Community Medicine, 1980-9. (MFCM thesis.)
- 27 Strobino BR, Kline J, Shrout P, Stein Z, Susser M, Warburton D. Recurrent spontaneous abortion: definition of a syndrome. In: Porter IH, Hook EB, eds. *Human embryonic and fetal death*. New York: Academic Press, 1980:315-29.
- 28 Himmelfarber DU, Brown BW, Cohen EN. Cigarette smoking during pregnancy and the occurrence of spontaneous abortion and congenital abnormality. *Am J Epidemiol* 1978;108:470-9.
- 29 Kline J, Stein Z, Susser M, Warburton D. Environmental influences on early reproductive loss in a current New York City study. In: Porter IH, Hook EB, eds. *Human embryonic and fetal death*. New York: Academic Press, 1980:225-60.
- 30 Axelsson G, Rylander R. Exposure to anaesthetic gases and spontaneous abortion: response bias in a postal questionnaire study. *Int J Epidemiol* 1982;11:250-6.
- 31 Axelsson G, Rylander R. Validation of questionnaire reported miscarriage, malformation and birthweight. *Int J Epidemiol* 1984;13:94-8.
- 32 McDonald AD, Cherry NM, Delorme C, McDonald JC. Work and pregnancy in Montreal—preliminary findings on work with visual display terminals. In: Pearce BG, ed. *Allegations of reproductive hazards from VDUs*. Loughborough: Humane Technology, 1984:161-75.
- 33 Kurppa A, Holmberg PC, Rantala K, Nurminen T. Birth defects and video display terminals. *Lancet* 1984;ii:1339.
- 34 Paulsson LE, Kristiansson I, Malmstrom I. Radiation from data screens. Arbetsdokument a 84-08. Radiation Protection Board, Stockholm, Sweden. Cited by Bergqvist U. In: Pearce BG, ed. *Allegations of reproductive hazards from VDUs*. Loughborough: Humane Technology, 1984:55-64.
- 35 Delgado JMR, Leal J, Monteagudo JL, Gracia MG. Embryological changes induced by weak, extremely low frequency electro-magnetic fields. *J Anat* 1982;134:533-51.
- 36 Ubeda A, Leal J, Trillo MA, Jimenez MA, Delgado JMR. Pulse shape of magnetic fields influences chick embryogenesis. *J Anat* 1983;137:513-36.
- 37 Maffeo S, Miller MW, Carstensen EL. Lack of effect of weak low frequency electromagnetic fields on chick embryogenesis. *J Anat* 1984;139:613-8.
- 38 Saunders RD, Smith H. Safety aspects of NMR clinical imaging. *Br Med Bull* 1984;40:148-54.
- 39 Bergqvist U, Knave B. Video display work and pregnancy—research in the Nordic countries. In: Pearce BG, ed. *Allegations of reproductive hazards from VDUs*. Loughborough: Humane Technology, 1984:49-53.
- 40 Bayne VJ. Paper outlining a trade union response to the allegations of reproductive hazards from VDUs. In: Pearce BG, ed. *Allegations of reproductive hazards from VDUs*. Loughborough: Humane Technology, 1984:111-26.

## Children in accident and emergency departments

Eighteen years ago the *BMJ* published a memorandum on the management of accidents in childhood prepared by the Standing Committee on Accidents in Childhood of the British Paediatric Association.<sup>1</sup> Recently this committee (now a joint committee of the British Paediatric Association and the British Association of Paediatric Surgeons) surveyed the facilities for children in accident and emergency departments and looked at the part played by paediatricians in their management (report obtainable from the British Paediatric Association, 23 Queen Square, London WC1N 3AZ to 31 October, 5 St Andrew's Place, London NW1 4LE thereafter). In the intervening years the specialty of accident and emergency medicine has developed, and great improvements have been made in facilities and the standard of care. Unfortunately, this new survey has shown that so far as children are concerned there are still many deficiencies.

The questionnaire was sent to paediatricians rather than to consultants in accident and emergency medicine, and replies were received relating to 189 hospitals out of the 258 hospitals with large accident and emergency departments. The first deficiency noted was that only 123 of the 189 hospitals kept a record of the number of children attending: one third made no attempt to estimate the demand on their services by children's attendances. The 123 hospitals had a total annual attendance of about one million children, indicating a total of two million in Britain, a figure that agrees reasonably well with other estimates. That is twice the number attending as paediatric outpatients.<sup>2</sup> In 63 districts the main paediatric facilities were in a different hospital from the accident and emergency department, and in 23 there were no inpatient facilities of any sort for children. In some instances the distance between the accident and emergency department and the main paediatric unit was substantial—in nine cases, 10 miles (16 km) or more—a dangerous state of affairs, for sick or injured children would need to be moved considerable distances before they were admitted.

One hundred and five of the 189 hospitals had an accident and emergency consultant, but regular sessional commitment by paediatricians on their staff was rare: only 13 hospitals had such an arrangement, six in separate children's hospitals, three in children's accident and emergency departments alongside adult departments, and only four in general accident and emergency departments. Only 15% of hospitals had a registered sick children's nurse on the establishment, but perhaps surprisingly 47% had a liaison health visitor. A separate waiting area for children was provided in one quarter and a children's treatment room in the same proportion. Comments on interprofessional relationships were asked for: these admittedly were subjective, but on the whole were favourable, particularly with accident and emergency consultants. Problems with administration and staffing were common, however, shortage of junior staff being regarded as a limiting factor preventing an increased paediatric input into accident and emergency work.

Clearly there is room for improvement in the contribution of paediatricians to the care of children attending accident and emergency departments and in the facilities for their treatment. Paediatricians should surely be able to advise about the general management of children and their special needs compared with adults, and the very large numbers warrant a consultant paediatrician being appointed to share

the responsibility for the general arrangements for children and to be the contact point between the accident and emergency department and the paediatric unit. More than this is needed, however: the causes of attendance vary from trauma, acute illness, social pathology, and child abuse to cot deaths, and this wide scatter justifies the further development of the subspecialty of paediatric accident and emergency medicine. Paediatricians with a special interest or total commitment to particular branches of the care of children have developed their subject and improved the standard of the care of children in those specialties. The exception is paediatric accident and emergency medicine. There are only three consultants—in Sheffield, Liverpool, and Dublin—and more of such posts should be established, possibly one in each region. Senior registrars in paediatrics might with profit spend some time during their training in such accident and emergency departments (or even in a general accident and emergency department) in the same way that senior registrars in accident and emergency medicine have to spend some time in a general paediatric unit. Other staffing improvements are needed: a senior nurse (grade 6) with a registered sick children's nurse qualification and a liaison health visitor should be appointed to each accident and emergency department. New accident and emergency departments should be sited only in hospitals having inpatient accommodation for children, and appropriate waiting, treatment, and other facilities for children should be provided.

The substance of these changes was almost all recommended 18 years ago in the memorandum on the management of accidents in childhood and later in the Court report.<sup>1</sup> The joint paediatric committee of the Royal Colleges of Physicians and the British Paediatric Association made similar recommendations to the chief medical officers of England and Wales, Scotland, and Northern Ireland in 1983, and we believe that these will have the support of the Casualty Surgeons' Association (unpublished recommendation). It is time this Cinderella of services for children was transformed.

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1 Standing Committee on Accidents in Childhood of the British Paediatric Association. Memorandum on the management of accidents in childhood. *Br Med J* 1967;iii:103-5.

2 Committee on Child Health Services. *Fit for the future*. Vols 1 and 2. London: HMSO, 1976. (Court report.)

## Gridlock and incentives in NHS

The National Health Service is trapped in gridlock and lacks the incentives to break out. That is the message from Professor Alain C Enthoven of Stanford University, who earlier this year spent several weeks as a fellow at St Catherine's College Oxford studying the management of the NHS. His conclusions (summarised at page 1067) are contained in a monograph, *Reflections on the Management of the National Health Service*, published by the Nuffield Provincial Hospitals Trust, which sponsored the visit.<sup>1</sup> North America is a fertile source of flying critics of the NHS, but, fortunately, Professor Enthoven, a former Rhodes

scholar, is knowledgeable and constructive. Described as one of America's leading experts on the economics of health care by the *Economist*—which showed its appreciation of his ideas in a four page article<sup>2</sup>—his analysis is sharp and his solutions radical.

Describing each country's health system as a product of its own history and culture, Enthoven offers no North American miracle cures and acknowledges that the NHS is Britain's democratic choice. The United States has equally serious problems, and he offers experience drawn from a battle against rising health care costs in his country of a ferocity that makes the arguments over the political, financial, and management troubles of the NHS genteel by comparison.

Gridlock, for those unfamiliar with New York, occurs when the streams of North/South traffic become so interlocked with the streams of East/West traffic that all vehicles are caught in an immovable mass. The NHS is held in the grip of similar interlocked forces that make real change difficult. These Enthoven lists as government imposed cash limits, consultants' long term contracts, general practitioners' contractual independence, nationally negotiated agreements with unionised staff, a lack of management incentives for improved performance, the institutional rule of "do no direct harm," politicisation that generates aversion to risk, the preference of politicians for cosmetic changes with short term electoral benefits, and a private sector "safety valve" that lessens the pressure for change from the articulate section of the public.

These forces are, indeed, powerful and immense political will would be needed to modify any of them. For example, what politician would care to invite consultants to accept short term contracts or suggest to general practitioners that their traditional independence should be restrained? As to the continuation of central negotiations, only last week the BMA council was vigorously supporting the Hospital Junior Staffs Committee in its complaint that a national agreement on standards of residential accommodation was being eroded by health authorities with tacit government approval (p 1062).

Viewed objectively, however, Enthoven has identified some vulnerable targets. Take consultants' contracts: to change the specialty mix of its medical staff, he points out, a regional health authority must wait for deaths and retirements. Ironically, the pressure for a change of mix arises largely from the profession's own success in advancing the frontiers of medicine, the growth of gastroenterology and geriatric medicine providing two recent examples. Certainly in today's high technology industries such a restraint on staff would be crippling. Indeed, it has been argued that the inability or reluctance to change has contributed greatly to Britain's industrial decline. Yet, to return to the NHS, there are dangers in introducing a limited term contract for consultants: appointments could be too readily subject to passing fashion or to local political or personality pressures. The idea of modifying contracts, however, will appeal to health service managers as well as politicians so the profession will need to marshal its arguments on the subject with care. It will find comfort as well as anguish in Enthoven's chapter on medical leadership. While sharply criticising the misuse of clinical freedom—particularly in the context of waiting lists and private practice—he supports the concept of doctors in management, drawing on American experience. "In the leading cost effective organised systems of care in the United States, systematic involvement of doctors in questions of resource use is considered absolutely essential to economy in medical care. Physicians make the key cost