None the less, the paper does give some cause for optimism. Its authorship, from both medicine and personnel management, may reflect a new recognition that local solutions are more likely to come from cooperation than confrontation. It provides rare data to add to the continuing debate on what doctors actually do, and it notes (although, revealingly, no comment is made) that the admitting house physician does not go to bed for 34 hours. Let us hope it is read by Mrs Bottomley and her working party.

GRAHAM HENDERSON

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Junior Staff Committee

London E14 9DE

1 Leslie PJ, Williams JA, McKenna C, *et al.* Hours, volume, and type of work of preregistration house officers. *Br Med J* 1990;**300**:1038-41. (21 April.)
2 DHSS Management Services (NHS). *Organisation of the work of junior hospital doctors.* London: HMSO, 1971.

SIR,—As one to whom age and retirement from NHS practice have given the advantage of a slightly more detached viewpoint, I am surprised regularly that the numerous letters and articles on this subject all ignore the question of supply and demand—a theory so dear to our present government.

It is always foolish to ignore the foresight and perspicacity of the young who, before starting medicine, will evaluate their whole careers. The issues that affect juniors are part of that future. If they face a loss of youthful years in labour and stress they will look for the recompense to follow, and although medicine is not a career for the mercenary, money and terms of employment must be considered. What do they see?

When an artisan is paid more for a house call in the day than a general practitioner is paid for a visit at night over the weekend, the future of junior doctors hardly seems generous. Comparison with other occupations is even less favourable. The scope of technological and scientific knowledge, skill, logical reasoning, ability to cope with emergencies, and mental discipline needed by any doctor far exceeds that required for other roles in life, or indeed for any of those occupations advertised with such generous description in the Sunday papers. Young doctors face stress, insecurity, lack of incentive to increase work output and efficiency, no incidental bonuses, and no opportunities to better their lot by transfer to more generous employers who seek talent. Doctors train to middle age and are then tied like serfs within a specialty.

The future implications for the profession are inescapable. Even in countries that offer a better life for junior doctors recruitment is failing. What, therefore, can we expect? The problems of junior doctors represent the tip of an iceberg that is teetering. The problem belongs to us all.

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Radioactive substances decontamination exercise

SIR,—We undertook a similar exercise to that described by Dr B Heaton and his colleagues[1] in collaboration with staff from the Health Physics Department at British Nuclear Fuels Laboratory, Chapelcross. The nature of the supposed injury sustained by the "patient" precluded the use of a shower for initial decontamination. Most of the radioactive contamination was removed with an initial dry wipe of the skin, and the residue was contained by a sterile drape (Steri Drape 2, 3M). The surgeon was then able to simulate incisions through the film to carry out a lifesaving operation. Subsequent removal of the film also removed nearly all the contamination, which stuck to the adhesive.

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1 Heaton B, Matheson AB, Page JG. Radioactive substances decontamination exercise. *Br Med J* 1990;**300**:1121-2. (28 April.)

Notification of drug addicts

SIR,—I write to draw attention to the publication in March of the annual Home Office statistical bulletin, which gives details of the numbers of drug addicts notified to me during 1989[1] and to invite the continued cooperation of the profession in this important work. The bulletin shows that the numbers of new and renotified addicts have continued to increase and are greater than 1988 by 8% and 17%. About two thirds of the new and renotified addicts in 1989 (as in 1988) were reported as injecting drugs. As in previous years, most of the addicts notified (84%) were addicted to heroin. So far the proportion of cocaine addicts (6%) is small.

Although it is well recognised that the number of addicts notified annually by no means precisely measures the number of people who misuse notifiable drugs during any given year, notifications are the best available indicator of trends in drug misuse.

The completeness of statistics based on the register depends upon the cooperation of doctors in complying with their statutory obligations under the Notification of Addicts Regulations 1973. It is important to remember that notification is required whether doctors treat patients they know to be addicts for their addiction or for some other condition, or refer them to specialist drug services.

As the custodian of the notifications, I wish to reassure doctors that the information they provide about their addict patients is held in strictest confidence in the Addicts Index, which is maintained on my behalf at the Home Office. In particular, I wish to emphasise that the police do not have access to information about patients included in the Addicts Index. The only information made available over the telephone is to doctors whose identities have been checked by a call back system and is limited to whether a named patient has been notified previously as an addict and the name of the last notifying doctor. Any further information about patients and their treatment can then be exchanged between the doctor making the enquiry and the doctor who previously notified the patient. Information from the Addicts Index is made available to research workers with my agreement after their bona fides have been checked, the proposed research has been approved, and the researcher has agreed to protect the confidentiality of the information. The enquiry number for the Addicts Index is 071 273 2213.

In September 1987 a new notification form (HSA2/1(rev)) was introduced. This includes a question on whether the addicted patient injects any drug, whether or not notifiable. It is important that doctors provide this information to help ensure more effective targeting of education about HIV infection and better service provision. During 1989, information on injecting was provided for just over 80% of the addicts notified. This response rate is heartening. The high proportion who are reported to inject is worrying, and shows how important it is to obtain full information about drug misuse. Doctors can help in this by ensuring that they notify on form HSA2/1 (rev). Copies of this with prepaid labels addressed to me can be obtained from family practitioner committees.

Since April 1990 the department has required regions to establish a regional database to collate anonymised information about drug misusers attending a wide range of drug services. This will provide better information to enable preventive work and treatment services to be targeted. The new form is in triplicate and includes a notification form for use by doctors only which will eventually replace form HSA2/1(rev). During the changeover period to the new form it is vital that notifications continue, and I rely on the help and cooperation of all doctors in ensuring this.

A revised *Guide to the Misuse of Drugs Act 1971 and the Misuse of Drugs Regulations* was recently issued by the Department of Health to family practitioner committees. I hope that doctors will find this helpful in clarifying the requirements stipulated by the regulations.

All of us concerned with the prevention and treatment of drug misuse and AIDS have reason to be grateful to the doctors who conscientiously comply with the Notification of Addicts Regulations. Your continued cooperation is essential to the success of our joint efforts in the prevention and treatment of drug misuse.

DONALD ACHESON

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1 Home Office. *Statistics of the misuse of drugs: addicts notified to the Home Office, United Kingdom, 1989.* Croydon, Surrey: Government Statistical Department, 1990. (Statistical Bulletin No 7/90.)

Drug Points

Postmyelographic lateral rectus palsy associated with iopamidol

MESSRS—JOHN A BELL (Department of Ophthalmology, General Hospital, Newcastle upon Tyne NE4 6BE) and G G MCILWAINE (Department of Ophthalmology, Gartnaval General Hospital, Glasgow G12 0NY) write: Cranial nerve palsies are an uncommon aftermath of contrast myelography. We report two cases in which lateral rectus weakness manifested itself after myelography was performed using iopamidol.

Case 1—A previously fit 39 year old woman with intermittent nerve root compression underwent myelography with 10 ml of iopamidol (Niopam 300) at the L2-3 level. Shortly afterwards she started to complain of severe headache, dizziness, and nausea. Three days later she developed a left sixth nerve palsy but had no other focal neurological deficits. Over the following six months she recovered completely.

Case 2—A 46 year old woman with low back pain and right sided sciatica at the L2-3 level underwent myelography with 10 ml of iopamidol (Niopam 300). Soon after she suffered a severe global headache followed by an episode of nausea and vomiting. She developed diplopia 12 days later due to the development of a right sixth nerve palsy. This gradually resolved over four months.

To our knowledge this is the first report in which the contrast agent iopamidol has been implicated in cranial nerve palsies. Separate batches of iopamidol in 61·2% aqueous solution (Niopam 300, E Merck, UK) were used in each case. This material has a better record on side effects than other contrast materials,[1] but it has been associated with severe aseptic meningeal irritation in one patient[2] and prolonged disruption in the cognitive function of another.[3]

Myelography has been associated with various neurological side effects, including abducens palsy. The procedure of lumbar puncture itself can cause a lateral rectus palsy with headache and ocular and auditory symptoms. The slow leakage of cerebrospinal fluid from the puncture site may lead to caudal displacement of the brain and traction on

the meninges and abducens nerve on its long intracranial course.

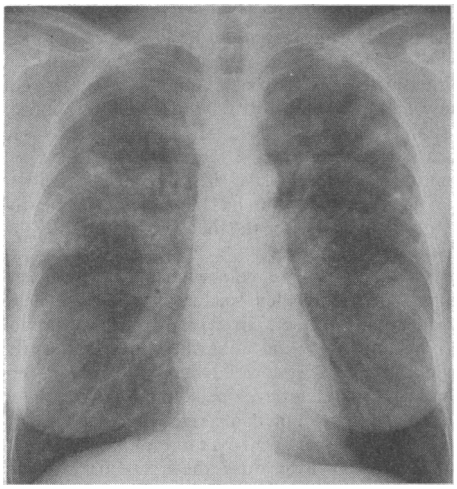
The sixth nerve occupies a superficial position in relation to the fourth ventricle, which communicates directly through the foramina of Magendie and Luschka with the subarachnoid space. Dye studies have shown that agents introduced into the spinal canal frequently reach the medulla, which may explain the peculiar affinity of the sixth nerve to palsy.[4]

The contrast agents introduced in the procedure of myelography have a toxicity of their own, and the incidence of cranial nerve palsy is higher than after merely dural puncture.[5] This may be due to a previously unreported direct neurotoxicity of the contrast agent iopamidol itself.

1 Lamb JT. Iohexol versus iopamidol for myelography. *Invest Radiol* 1985;**20**(suppl):537-43.
2 Wallers K, Chaudhuri AKR. Severe meningeal irritation after intrathecal injection of iopamidol. *Br Med J* 1985;**291**: 1688.
3 Robinson C, Fon G. Adverse reaction to iopamidol. *Med J Aust* 1986;**144**:553.
4 Fawcett KR. Extraocular muscle paralysis following spinal anaesthesia. *Minn Med* 1931;**14**:648-9.
5 Fincham RW, Joynt RJ, Skultety FM. Neurological deficits following myelograpy. *Arch Neurol* 1967;**16**:410-4.

Hypersensitivity pneumonitis induced by trimethoprim

Drs T Higgins (Department of Paediatrics) and P M Niklasson (Department of Infectious Diseases, Växjö County Hospital, S-385 17 Växjö, Sweden)
 write: We report on a patient who developed hypersensitivity pneumonitis induced by trimethoprim. A 43 year old woman with no history of allergy received a 25 day course of trimethoprim 100 mg/day in February 1989 for recurrent urinary tract infection. A new course was begun in September 1989. Four weeks later she presented with a two week history of a severe hacking cough and a five day history of fever, muscle pain, nausea, and headache. No other medications had been taken. The chest radiograph showed a nodular pattern of opacities (figure).



Chest radiograph showing nodular pattern of opacities

Myoplasmal pneumonia was tentatively diagnosed and a 10 day course of erythromycin succinate 500 mg twice daily was prescribed and trimethoprim withdrawn. Three days later the patient felt well and restarted prophylaxis with trimethoprim. Within eight hours of taking one tablet she developed a temperature of 39·5°C, an incessant cough, muscular pains, and joint pain. Investigations showed a white cell count of $8{\cdot}3\times10^9$/l with 11% eosinophilia and moderately raised liver enzyme activities. Trimethoprim and erythromycin succinate were withdrawn and the patient was prescribed a 10 day course of doxycycline 100 mg/day. She improved rapidly. The chest radiograph, the liver enzyme activities, and the differential blood count were normal three weeks later. Paired sera analysed for antibodies to viral pathogens, ornithosis, *Mycoplasma pneumoniae*, and toxocara gave negative results. A nasopharyngeal culture was negative. No cysts or ova were found in three examinations of the stools.

We believe that our patient had hypersensitivity pneumonitis induced by trimethoprim because the symptoms vanished when trimethoprim was withdrawn and reappeared when it was restarted and there were pulmonary infiltrates similar to those seen in Loeffler's syndrome, transient eosinophilia, and a lack of evidence of infectious disease. A rechallenge would have provided definitive proof but was deemed unethical. Rash is a common adverse reaction associated with trimethoprim. The British Committee on the Safety of Medicines has received reports of bronchospasm and dyspnoea in connection with trimethoprim. Neither the Swedish Advisory Committee of Adverse Drug Reactions, the Committee on Safety of Medicines, nor the manufacturer (Astra, Sweden) has received reports of hypersensitivity pneumonitis in connection with trimethoprim.

Interstitial nephritis associated with indapamide

Drs C G Newstead, R H Moore, and A J Barnes (The London Hospital, London E1 1BB)
 write: Acute interstitial nephritis secondary to thiazide diuretics has been reported, but it has not been reported with the new generation of thiazides. We report a case of tubulointerstitial nephritis leading to acute renal failure associated with the use of indapamide.

A 74 year old man had been taking digoxin 0·0625 mg and one tablet of Navidrex-K (cyclopenthiazide 250 µg and potassium 8·1 mmol) every morning for four years following a diagnosis of hypertension. He visited his general practitioner 35 days before admission complaining of lethargy. The dose of digoxin was doubled, and indapamide 2·5 mg every morning was substituted for Navidrex-K. Seventeen days later he developed a generalised purpuric urticarial rash. This was attributed to the indapamide, which was stopped. The rash resolved over three days. The following week the patient noticed a diminution in his urine volume, as well as progressive fatigue and anorexia. Five days before admission he developed a chest infection, which was treated with ciprofloxacin 250 mg twice daily. On admission he was clinically acidotic and uraemic. Investigations showed haemoglobin 121 g/l, bicarbonate 9 mmol/l, potassium 5·5 mmol/l, phosphate 2·99 mmol/l, urea 75·6 mmol/l, creatinine 1819 µmol/l, and 24 hour protein excretion 0·74 g, and ultrasound showed normal sized non-obstructed kidneys. No casts or eosinophils were seen in the urinary deposit. Later a percutaneous renal biopsy showed increased fibrosis in the interstitium with a patchy infiltrate of lymphocytes and occasional polymorphs; immunofluorescence gave negative results.

On admission probable acute tubulointerstitial nephritis was diagnosed. Haemodialysis was started and he was treated with prednisolone 60 mg every morning and cimetidine 200 mg twice daily; all other drugs were withdrawn. The patient required haemodialysis for eight days; his creatinine concentration subsequently fell to 130 µmol/l.

Acute interstitial nephritis has been described after treatment with thiazide drugs[1,2] but no cases of interstitial nephritis due to indapamide are known to the manufacturers or to the Committee on Safety of Medicines. Hypokalaemia is the most frequent problem observed with this drug,[3] and in one case of profound hypokalaemia in a 39 year old man there were also electrocardiographic changes, renal casts, marked muscular weakness, and proteinuria. Renal function, however, was normal.[4]

In this case the patient was admitted to hospital in a state of advanced uraemia, and a renal biopsy confirmed the clinical diagnosis of tubulointerstitial nephritis. There was no evidence of infection or obstruction or of multisystem or immunological disease. There was no history of exposure to toxins apart from drugs. Several features suggest that indapamide was responsible. The patient had been taking an alternative thiazide diuretic (cyclopenthiazide) for four years without any side effects; the urticarial rash developed 17 days after he started indapamide and resolved after he stopped this drug; the improvement in the rash occured while digoxin was continued at the same dose. The history suggested that the renal disturbance had antedated the admission by two weeks, some nine days before first exposure to ciprofloxacin, and the degree of kidney disturbance on admission was too profound to have been caused by ciprofloxacin started only five days earlier. Thus the clinical evidence points to an acute drug induced hypersensitivity reaction secondary to indapamide being responsible for this patient's acute renal failure.

1 Anonymous. Case records of the Massachusetts General Hospital: progressive azotemia in an elderly hypertensive man. *N Engl J Med* 1983;**309**:970-8.
2 Pusey CD, Saltissi D, Bloodworth L, Rainford DJ, Christie JL. Drug associated acute interstitial nephritis: clinical and pathological features and the response to high dose steroid therapy. *Q J Med* 1983;52:194-211.
3 Thomas JR. A review of 10 years' experience with indapamide as an antihypertensive agent. *Hypertension* 1985;7:11-152.
4 Di Giacomo V, Tedeschi A. Grave episodio ipocaliemico indotto da abuso di fluroprednisolone acetato per via nasale e contemporanea assunzione orale di indapamide. *Clin Ther* 1985;**112**: 163-7.

Mononeuritis multiplex associated with prolonged vancomycin treatment

Drs G Leibowitz, D Golan, D Jeshurun, and M Brezis (Department of Medicine, Hadassah University Hospital-Mt Scopus, Jerusalem, Israel)
 write: Vancomycin is the antibiotic of choice for methicillin resistant staphylococci and has relatively few side effects (fever, phlebitis, allergic reactions, ototoxicity, and neutropenia[1]). We recently observed a patient with severe peripheral nerve toxicity after prolonged vancomycin administration. After mitral valve replacement a 49 year old woman developed methicillin resistant staphylococcus septicaemia from a sternal wound infection. Her fever rapidly remitted on vancomycin treatment, which was continued for several weeks for suspected endocarditis. Serum concentrations of vancomycin were therapeutic. The only other medications were warfarin and diuretics, which she had been taking for many years. After a month on vancomycin she complained of tinnitus and weakness of her right leg. She remained afebrile, and neurological examination showed foot drop of her right leg. Nerve conduction studies confirmed right peroneal nerve block and disclosed bilateral partial block of the tibial nerves, consistent with mononeuritis multiplex. On discontinuation of vancomycin the tinnitus resolved but the foot drop persisted.

Vancomycin can cause vestibular toxicity, but peripheral neuropathy has not been reported. Although vancomycin can, rarely, induce a vasculitis,[2,3] mononeuritis multiplex has not been observed. Our patient showed no evidence of systemic vasculitis. We conclude that peripheral neuropathy may be an additional adverse effect of vancomycin.

1 Levine JF. Vancomycin: a review. *Med Clin North Am* 1987;71: 1135-45.
2 Markman M, Lim HW, Bluestein HG. Vancomycin-induced vasculitis. *South Med J* 1986;79:382-3.
3 Rawlinson WD, George CR. Vancomycin-induced vasculitis. *Med J Aust* 1987;**147**:470.