with the agent in question this is a price that must be paid.

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1 De Klippel N, Sennesael J, Lamote J, Ebinger G, de Keyser J. Cyclosporin leukoencephalopathy induced by intravenous lipid solution. *Lancet* 1992;339:1114.

Treating tuberculosis in developing countries

EDITOR,—Botswana's national tuberculosis programme has an impressive completion rate of over 90% using short course chemotherapy and daily supervised treatment.¹ Most developing countries could not, however, implement such a programme.

There are an estimated 17 million active cases of tuberculosis worldwide, 60% of which are in Asia. Nepal has a prevalence of active tuberculosis of 5/1000.² We accept that short course chemotherapy is the cornerstone of tuberculosis control and that although the drugs are relatively expensive it is a highly cost effective intervention at US\$1-4 per year of life saved.³ However, successful implementation of a national programme requires political commitment and government structure to provide for cost of drugs, training, secure drug supply, cooperation, and integration of tuberculosis control into the general health service; it also requires diagnosis based on smear microscopy, and proper recording and reporting of patients. All of these conditions have been met in Botswana, which has then been able to introduce short course chemotherapy successfully and go one step further with daily supervised treatment.

The situation in Nepal and many countries in southern Asia is very different. Firstly, the geographical terrain in Nepal is very difficult. Secondly, Nepal is one of the poorest countries in the world: the gross national product per capita was US\$170 in 1988 compared with US\$940 in Botswana.⁴ The health infrastructure is poorly developed. Many people live two hours to two days from the nearest health post. Each health post in Nepal serves 15 000-20 000 people. Government expenditure on drugs was 3.3 pence per person in 1991,⁵ hence annual drug supplies in health posts run out in a few months. Thirdly, social conditions are very poor in Nepal: 71% live below the poverty line (income below US\$150 per capita a year)⁶ and literacy rates are low, estimated at 36% in 1989,⁷ in comparison to Unesco's figure of >95% in Botswana.

Kumaresan and Maganu admit that the cost of their programme needs to be evaluated. If their programme proves cost effective, it may well be an ideal role model for tuberculosis programmes in the faster developing countries of south Asia—Thailand and Malaysia, for example—but for countries such as Pakistan, Bangladesh, and Nepal such a programme is unfortunately a long way off.

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King's College Hospital's A&E department

EDITOR,—We are writing to express our concern about John Warden's news article on the accident and emergency department at King's College Hospital.¹ The short title on the cover was inappropriate, the actual title was misleading, and the text contained several errors of fact. The net effect was a misrepresentation of the high standard of clinical care provided in the department.

Camberwell Health Authority, the region, and central government have long recognised that the physical environment of the accident and emergency service at King's College Hospital is unsatisfactory, and the long argued case for investment has at last been acknowledged. Our other main problem has been the potential for long delays for those awaiting inpatient admission, but several recent initiatives have led to improvements. The establishment of an emergency admission ward, coordination of bed management, reductions in length of stay in hospital, and increased efficiency of discharge planning now enable more than 90% of patients to be admitted from the department within four hours of a bed being requested.

The two patients specifically mentioned in Warden's report were both under the clinical care of on call medical teams. One of the patients was left in the accident and emergency department by ambulance staff without referral to the nursing staff, and we acknowledge that there was thus an unacceptable delay before clinical assessment. But his subsequent death occurred in the department only because inpatient admission was difficult to arrange and not because of any lack of care. The 75 year old patient was receiving appropriate nursing attention and frequent monitoring but fell from the trolley in the department while awaiting admission. His death did not occur "during transfer to Guy's Hospital" but four days later.

Accident and emergency care at King's College Hospital has an excellent reputation, and in neither case considered by the coroner was a causal link suggested between the unfortunate outcomes and deficiencies in clinical care. Indeed, the coroner's concern was not about the accident and emergency department itself but about the intolerable additional strain imposed on accident and emergency staff by the continuing long delays for admission from an already overcrowded department.

An accident and emergency service is only as good as its related facilities, and these need improvement. Unfortunately, however, reports about South East Thames Regional Health Authority's inquiry failed to acknowledge publicly the remarkable efforts made by many staff over many years in enabling a chronically under-resourced accident and emergency department to cope with the additional strain of long delays to admission. These efforts are now being supported by capital investment in the department and by improvements in staffing. This is not the "new casualty regime" suggested in the title of the article but a new regime in support of the department.

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1 Warden J. New casualty regime at King's College Hospital. *BMJ* 1992;305:437. (22 August.)

Partners in practice

EDITOR,—As a community health doctor working in child health I have greatly enjoyed the series on partners in practice; many of the articles have lessons for all in the new NHS.¹ I looked forward to

a discussion of partnership with community health doctors in the management of chronic disability, child protection, and health promotion in the child and adolescent population in the community, as well as the integration of primary and secondary care. To my regret these important topics were not mentioned although there was reference to partnership with hospitals, patients, the family health services authority, health visitors, and members of the primary health care team. I was surprised, too, that with regard to advising schools on pupils' smoking, the two main groups of health professionals with this skill already working in schools—school medical officers and school nurses—did not merit a mention.

Many community health doctors are based in health centres with general practitioners, and with their skill in developmental, social, and educational paediatrics they can serve the interests of children best by conducting a continuing dialogue with general practitioners. To give some examples, one in five children have special educational needs at some time during their school careers. Community health doctors have a statutory responsibility under the Education Acts 1981 and 1991 to collate medical factors and advise the education authority accordingly. General practitioners may become aware early on of families' anxieties about their children's difficulties at school, and discussion with community health colleagues would be helpful in this. Similarly, general practitioners could share with community health doctors their concerns regarding developmental difficulties or suspicions of child abuse in order to benefit from their specialist skills. We would welcome such a partnership with our general practitioner colleagues.

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1 Lawrence M. Caring for the future. *BMJ* 1992;305:400-2. (15 August.)

Reducing pain associated with injection of lignocaine

EDITOR,—J A H Davidson and S J Boom report that warming lignocaine reduces the incidence of pain on injection.¹ An alternative, simple method is to apply counter-irritation.^{2,3} The operator scratches the skin near the site of injection for one or two seconds before and during the injection. Bourke showed that this effectively reduced awareness of the needle and the pain associated with injection of local anaesthetic solution.¹

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- 1 Davidson JAH, Boom SJ. Warming lignocaine to reduce pain associated with injection. *BMJ* 1992;305:617-8. (12 September.)
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EDITOR,—Dental surgeons collectively give many more local anaesthetics annually than are given in any other specialty in medicine, and it is disappointing that work in dentistry aimed at making the administration of local anaesthetics as painless as possible—for example, by warming the anaesthetic, which has been widely accepted in dentistry for many years—has been largely ignored by the medical profession.¹

In particular, the use of extra-short, ultrafine needles (30 gauge), which are strong enough for

most intradermal infiltrations, and the longer 27 gauge needles for infiltration along a dermal edge—for example, before lacerations are sutured—could be more widely adopted. Obviously these needles are less rigid than the 21 gauge (green) and 23 gauge (orange) needles used at present, and 21 gauge needles must be used for procedures such as deep nerve blocks and intracapsular joint injections. For giving most other local anaesthetics, however, the 27 gauge and 30 gauge needles would be adequate, and, I am sure, preferable for the patient. I am a dental surgeon, and during my current undergraduate medical training I have witnessed many patients being given unnecessarily painful injections of local anaesthetic by doctors who have received only rudimentary training in techniques. Little or no thought is being given to methods of reducing the discomfort of injection. This is at its worst in accident departments, with paediatric units giving most consideration, mainly by using topical anaesthetic creams.

Use of dental technology can facilitate Davidson and Boom's aim of providing warm sterile local anaesthetic for infiltration. Dental anaesthetics come in a variety of solutions and concentrations, with or without vasoconstrictors, and are supplied as sterilised, individually packed ampoules that fit directly into a standardised syringe, which are available in both aspirating and non-aspirating varieties. The ampoule is loaded into the syringe intact and the desired needle connected. This action punctures the ampoule so that there is no contact with the local anaesthetic before its infiltration. This system prevents the contamination of the local anaesthetic solution that is possible with repeated drawing from a stock bottle. Another bonus of using these ampoules is the ready availability of commercial thermostatic heaters, although a correctly adjusted baby's bottle warmer will do the same job at a much reduced cost. Their use also removes the need to overheat the solution to allow for cooling in the syringe, in turn reducing the dissociation of the local anaesthetic solution.

If I should need a skin laceration sutured I will visit my dentist first to have the local anaesthetic administered before attending casualty.

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1 Davidson JAH, Boom SJ. Warming lignocaine to reduce pain associated with injection. *BMJ* 1992;305:617-8. (12 September.)

Dermatological causes of pruritus ani

EDITOR,—We believe that there are two important omissions from D J Jones's list of dermatological conditions that can cause pruritus ani.¹

Firstly, in female patients lichen sclerosus should be remembered. This disorder, in which characteristic white atrophic areas are found on the skin, particularly affects the genitalia but can extend to the perianal area. One of us (CIH) has observed that a fifth of women with vulval lichen sclerosus have pruritus ani, but the perianal symptoms may occur in isolation. The symptoms usually respond to potent topical steroids, but patients need to be followed up long term as there is a small risk of malignant change in the lesions.

Secondly, the importance of contact dermatitis as an aggravating factor in pruritus ani must be emphasised. In a recent study in the contact dermatitis clinic in Sheffield we patch tested 80 patients with pruritus ani. Results were positive in 55 patients. In 38 of these the reactions were to medicaments or their constituents. The commonest allergens were neomycin, fragrance mix, Peru balsam, and cinchocaine. Follow up in these patients showed an improvement or resolution of symptoms after advice in three quarters of the 55

with positive results. Patients with pruritus ani are at high risk of sensitisation from topical medicaments and toiletries, and we advise patch testing at an early stage in their management. We dispute the recommendation to use "wet wipes" as these may sensitise patients.

In conclusion, we emphasise the importance of examining the entire skin surface and the mucous membranes to obtain clues to the diagnosis and recommend that once a potent steroid has successfully alleviated symptoms the strength of steroid should be gradually reduced. In difficult cases skin biopsy may help with the diagnosis.

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1 Jones DJ. Pruritus ani. *BMJ* 1992;305:575-6. (5 September.)

EDITOR,—D J Jones warns about the risks of contact sensitisation in the anal region and emphasises the importance of non-irritating, hygienic measures.¹ The advice to use "moist tissues normally used for babies' bottoms" is attractive, but moist toilet paper may contain preservatives that can be allergenic. In the Netherlands a relatively new preservative, methyl-dibromoglutaronitrile (in Euxyl K400), is sometimes used in these products.²

In the past 20 months I have seen 10 patients with a positive patch test reaction to methyl-dibromoglutaronitrile. In seven this was related to use of moist toilet paper in the anal region. Thus before advising patients with pruritus ani to use this type of tissue paper doctors should find out what preservatives it contains.

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2 De Groot AC, Bruynzeel DP, Coenraads PJ, Crijns MB, Van Ginkel CJ, Van Joost T, et al. Frequency of allergic reactions to methyl-dibromoglutaronitrile (1,2-dibromo-2,4-dicyanobutane) in the Netherlands. *Contact Dermatitis* 1991;25:270-1.

Blood and breath alcohol concentrations

EDITOR,—Magne Nylenna and Richard Smith and subsequent correspondents discuss standardisation of units of measurement.^{1,2} Measurement of alcohol concentration is a case in point.

The concentration of alcohol (ethanol) permitted in a motorist's blood is different in different countries and also within regions of the same country—for example, the United States and Australia. Besides threshold limits of blood alcohol concentration many countries also have legislation referring to the concentration of alcohol in a specimen of breath. When reporting alcohol measurements for clinical and legal purposes investigators (and academic journals) use many concentration units. This practice has caused considerable confusion.

The first statutory alcohol limits for motorists were enacted in Norway in 1936 (0.50 mg/g) and then by Sweden in 1941 (0.80 mg/g). The legal limit in Sweden was lowered to 0.50 mg/g in 1957 and then to 0.20 mg/g in 1990. Note that the concentrations of alcohol are given here in terms of mass/mass. Britain introduced its legal alcohol limit for motorists in 1967 (80 mg/100 ml), which often appears in print as the ambiguous 80 mg%. Because 1 ml of whole blood weighs on average

1.055 g,³ 80 mg/100 ml corresponds to 76 mg/100 g.

In clinical chemistry laboratories plasma or serum is analysed more often than whole blood, and analyte concentrations are reported in accordance with the *Système International d'Unités* (SI). Here the amount of substance is the mole rather than mass and the preferred unit of volume is the litre. Accordingly, a blood alcohol concentration of 100 mg/100 ml is equivalent to 21.7 mmol/l (molecular weight of ethanol=46.06). Great care is needed when alcohol determinations made in hospital clinical laboratories are cited in legal proceedings dealing with road traffic offences. Plasma and serum contain more water than whole blood and therefore also more ethanol.⁴

Threshold limits of breath alcohol concentration have been derived from existing statutory limits for blood alcohol concentration by dividing by a blood to breath conversion factor. In Britain 80 mg/100 ml divided by 2300 gives 35 µg/100 ml, which is currently the statutory limit for breath alcohol concentration. Unfortunately, different countries opted for different factors when setting their limit for breath alcohol concentration. The table gives the legal alcohol limits (blood and breath) for motorists in various countries. When handheld breath alcohol devices are used in clinical and emergency medicine the results are often reported, without qualification, as if the blood alcohol concentration had been measured directly.^{5,6}

Statutory limits of alcohol in blood and breath in various countries

Country	Statutory blood alcohol	Statutory breath alcohol	Conversion (blood/breath)
Britain	80 mg/100ml	35 µg/100 ml	2300:1
Sweden	0.20 mg/g*	0.10 mg/l	2100:1
Norway	0.50 mg/g*	0.25 mg/l	2100:1
Austria	0.80 g/l	0.40 mg/l	2000:1
Holland	0.50 mg/ml	220 µg/l	2300:1
Germany	0.80 g/kg*†	‡	2100:1
France	0.80 mg/ml	0.40 mg/l	2000:1
US	0.10 g/100 ml§	0.10 g/210 l	2100:1

*1 ml of whole blood weighs 1.055 g.

†Concentrations of alcohol are determined in serum, and the result is converted into the presumed concentration in whole blood by dividing by 1.20.

‡Breath tests are used for roadside screening and not for evidential purposes.

§Applies in most US states.

The notion of reaching an international agreement about one common limit for blood or breath alcohol concentration for motorists or even the same unit of concentration (SI or otherwise) when reporting these measurements is attractive but hardly attainable.

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6 Hahn R. Measurement of breath alcohol. *Lancet* 1992;339:187-8.

Osteoporosis in men

EDITOR,—We believe that David C Anderson's guidelines for investigation for clinicians in doubt about the diagnosis of osteoporosis in men require some expansion.¹ The investigations suggested fail to screen for some of the commoner causes of secondary osteoporosis in men that we and others² have observed (table) as well as less common but