infants in the home. With respect, we suggest that you read our paper again and then ask this question: Would I be prepared to expose an infant or a pregnant woman in my care to a drinking water lead level of 800 $\mu\text{g/l}$?

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¹ Beattie, A D, *et al*, *Lancet*, 1975, **1**, 589.

² Bacon, A P C, *et al*, *Lancet*, 1967, **1**, 264.

³ Beattie, A D, *et al*, *British Medical Journal*, 1972, **1**, 488.

⁴ Campbell, B C, *et al*, *British Medical Journal*, 1977, **1**, 482.

⁵ Parry, W H, *Lancet*, 1967, **2**, 1207.

Molar solutions and molar concentrations

SIR,—An article by Dr S E Williams (15 May 1976, p 1189) concerning the use of hydrochloric acid for the correction of severe metabolic alkalosis perpetuates a small but significant error originally contained within one of the references.¹ The author states that 150 ml of 1-M HCl in one litre of sterile water yields 300 mmol of H^+ and Cl^- per litre. By definition a 1-M solution of any preparation contains 1000 mmol of solute. Therefore 150 ml of the 1-M HCl solution will contain 150 mmol of H^+ and Cl^- . When the 150-ml aliquot is added to the sterile water the molarity of the final solution is 0.15 M, not 0.3 M as would be calculated using the 300 mmol figure.

Such miscalculations may be critical when one is attempting rapidly to correct severe metabolic alkalosis. Furthermore, while the author, as well as others,^{1,2} confirms the safety of dilute solutions of HCl (0.1–0.2 M), several reports^{2,3} indicate that HCl in 0.3 M concentrations or greater may precipitate acute haemolysis of red blood cells. Thus great care should be directed toward ordering and preparing intravenous hydrochloric acid solutions for reasons both of efficacy and of safety.

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¹ Abouna, G M, Adrete, J A, and Stangl, T E, *Surgery*, 1974, **75**, 139.

² Shaville, H G, and Parke, R, *Surgery*, 1975, **78**, 439.

³ Whelton, O, *Lancet*, 1974, **1**, 1055.

* *We sent a copy of this letter to Dr Williams, whose reply is printed below.—Ed, *BMJ*.

SIR,—I am indebted to Dr Cloyd for pointing out a possible source for confusion in my article concerning the use of intravenous hydrochloric acid for correcting severe metabolic alkalosis.

One hundred and fifty millilitres of 1-M HCl made up to one litre with sterile water will produce a solution containing 300 mmol of H^+ and Cl^- (that is, 150 mmol of each ion). In retrospect this may have been ambiguous and I am sorry if it has caused confusion.

In the patient described the calculated Cl^- deficit and H^+ deficit suggested that a total of 300 mmol of H^+ was required—that is, 2 l of solution as made up above.

I would again emphasise the dangers of using solutions of hydrochloric acid of higher

molarity than 0.15 M (0.15 mmol HCl/l) for intravenous use.

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Patients' awareness of melaena

SIR,—During the past two months I have seen three elderly patients who have had melaena while taking fenoprofen. One presented with abdominal pain, the second with shortness of breath, and the third with shortness of breath and palpitations; their haemoglobin concentrations were 13.1, 7, and 9 g/dl respectively. They had had black stools for between two and four days but none of them complained of this and had continued to take the drug. The bleeding was discovered only when the patients were specifically asked about their stools.

Patients often complain of two or three loose stools but it appears that few realise the significance of change in colour. I would suggest that all patients being given drugs which might cause gastrointestinal bleeding should be made aware of the significance of black stools and given advice regarding the action to take.

MELVIN ROSS

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Teaching leprosy to medical students

SIR,—Professor H Scarborough (5 February, p 379), in defending the teaching of leprosy in leprosaria such as Garkida, Nigeria, states that physiotherapy, occupational therapy, and surgery are therapeutic measures. Instead, patients receiving such measures should be seen as examples of a tragic failure to prevent irreversible nerve damage, usually as a result of late diagnosis. Thus students taught in leprosaria may well conclude that deformity in leprosy is inevitable and that its management is time-consuming, needs expensive equipment, and is not very rewarding. If students are taught that the diagnosis of leprosy is difficult or that it is desirable to do skin smears to establish a definitive diagnosis they may lose interest in the subject, and it is not surprising that leprosy continues to be neglected by the medical profession.

In 1970 the Faculty of Medicine at the University of Dar-es-Salaam, Tanzania, carried out a teaching and health survey for two weeks on Mafia Island. The students were to detect cases of leprosy and tuberculosis, vaccinate the population of 14 000 against smallpox, and immunise the children against poliomyelitis and measles. There were no registered cases of leprosy on the island. None of the students had previously seen a case of leprosy. I gave one illustrated lecture followed by a clinical demonstration. The current classification of the disease was not mentioned. The students were instructed to screen the population for hypopigmented skin lesions, nodulation, and infiltration of the face and ears. Those having these signs were then referred on a later day to the WHO leprologist and the leprosy specialist for Tanzania, who made a definitive diagnosis. Seventy-one newly diagnosed cases of leprosy were detected, an estimated 80% of the leprosy on the island, and many were at an early, curable stage.

Thus the students learnt that the diagnosis of leprosy is easy and deformity can be prevented.

The capital and running costs of leprosaria like Garkida are enormous and this approach to leprosy is now completely outmoded. What is required is low-cost, effective, and practical management of the disease, and Ross was one of the few leprologists in the world to provide such measures. The decline in leprosy after 10–15 years of dapsone administration as shown by the figures from northern Zaria is a good example of successful preventive medicine. It is therefore a strange decision by the Faculty of Medicine of Ahmadu Bello University, Zaria, not to demonstrate these findings to the students, especially as the clinics are in the immediate vicinity of the medical school.

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CMV retinitis

SIR,—We are very grateful to Dr H W Murray for his letter (30 October, 1976, p 1071) drawing attention to the various reported episodes of the ocular manifestations of cytomegalovirus (CMV) retinitis and we look forward to reading his article when it is published. We apologise if we failed to make sufficiently clear that the patient we reported (31 July 1976, p 281) had a retinitis without visible choroidal involvement. Pure cytomegalovirus (CMV) retinitis was not the lesion in five of the 19 patients that Dr Murray cites^{1–5} and the diagnosis of cytomegalovirus inclusion disease was no more than presumptive in three patients.^{1,3,5} In particular we agree with Dr M E Smith⁶ that the diagnosis in the otherwise asymptomatic patient with a unilateral uveitis briefly described by Dr Helen Foerster¹ must remain unproved and speculative. Indeed, Dr Foerster herself presented her patient as a diagnostic problem.

It may well be that our patient is not the first reported case of CMV retinitis in an otherwise healthy adult but we remain unable to find a similar patient in the English literature.

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¹ Foerster, H W, *Survey in Ophthalmology*, 1959, **4**, 296.

² Maler, G H, and Disker, W A, *American Journal of Surgery*, 1970, **119**, 334.

³ Madge, G E, *Medical College of Virginia Quarterly*, 1972, **8**, 251.

⁴ Porter, R, *et al*, *British Medical Journal*, 1972, **3**, 133.

⁵ Coulson, A S, *et al*, *Western Journal of Medicine*, 1974, **120**, 1.

⁶ Smith, M E, *Archives of Ophthalmology*, 1964, **72**, 44.

Hip fractures up to date

SIR,—Congratulations on an excellent series of orthopaedic articles over the past few weeks, among which I particularly enjoyed Mr P A Ring's on hip fractures (11 December, p 1429). I should, however, like to endorse Mr E H J Smyth's comments (5 February, p 377) regarding the displaced subcapital fractures which he describes as "the problem-

children" of the hip fracture family. Once a good reduction has been achieved the method of fixation has got to bestow the fracture with good fixation that will not only stand the test of time until union takes place but, equally important, stand the test of the surgeon. If a system of internal fixation is to be seen to work well its results must be reproducible when performed by surgeons throughout the spectrum of grades and orthopaedic experience, from registrars to consultants.

Recently I and some of my colleagues have been using the AO cancellous screws to achieve an excellent fixation of subcapital fractures in a group of patients whose ages varied from 10 years up to 78 years. We are using a total of two cancellous screws of 16 mm thread length to ensure that the whole of the thread crosses the fracture and thus gives a very firm compression-fixation of these fractures. This technique is very straightforward, requiring a minimum of dissection and exposure, once a good reduction of the fracture has been obtained. It would seem to be eminently suitable for all grades of surgeon, requiring no complex jigs or other special equipment other than a single guide wire. I should be very interested to know if there are any other groups of orthopaedic surgeons with experience of using similar types of thin screws.

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Cimetidine and surgery

SIR,—It would seem reasonable to assume that the availability of histamine H_2 antagonists will significantly alter the attitude of clinicians in their selection of patients for elective surgery in the management of chronic duodenal ulcer. In so far as it is possible to see into the future at present, the indications are that surgery is most likely to be recommended for the young and otherwise healthy dyspeptics who do not respond to adequate therapy over a reasonable time. The choice of operation to be carried out in this younger age group merits careful consideration. It must be safe and it should cause minimal upset to the physiology of the upper gastrointestinal tract.

Whatever form of vagotomy is advocated, the continence of the stomach should be retained wherever possible. The attractive feature of highly selective vagotomy is the absence of any drainage procedure. Some years ago Burge, recognising the disadvantages of accepted drainage procedures, recommended the use of selective vagotomy without drainage in the absence of organic narrowing at the gastric outlet and latterly he too thought that highly selective vagotomy without drainage might well be preferable.¹ However, serious complications of this technically exacting procedure have been recorded² and in any case the recurrent ulcer rate is still a matter for discussion.³

Over the past four years we have carried out 65 operations for chronic duodenal ulceration in which truncal vagotomy has been combined with stretching of the pylorus with a Tubbs dilator inserted through a stab gastrotomy. The instrument is opened to the maximum of 4.3 cm with the object of temporarily inhibiting pyloric function while the vagotomised stomach regains its tone and

motility. To date the results are encouraging. No patient has required formal drainage because of gastric stasis. In two instances conversion to gastrojejunostomy has been necessary because of a mechanical hold-up at the gastric outlet. In one of these patients the pylorus had been "cracked" at the time of operation and the defect oversewn "in axis." We accept that the procedure cannot be used in the presence of fibrosis of the pyloric canal, and with the experience now available this patient would not have been included in the series. The other patient developed a penetrating posterior duodenal ulcer and at the conversion procedure an intact posterior vagal trunk was found.

We appreciate that the number of cases in the series is not large and the follow-up period is short, but we feel it justifiable at this juncture to report briefly on an alternative approach to the surgical management of selected cases of chronic duodenal ulcer. This simple operation obviates the sometimes distressing sequelae which occasionally accompany more formal drainage procedures and at the same time retains the physiological "gate-keeping" function of the pyloric canal.

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¹ Burge, H, *British Medical Journal*, 1971, **1**, 172.

² Moore, F P, *et al*, *British Medical Journal*, 1975, **4**, 328.

³ Hopton, D S, *et al*, *British Medical Journal*, 1976, **1**, 149.

Drug compliance in the elderly

SIR,—Drs I Wandless and J W Davie in their article "Can drug compliance in the elderly be improved?" (5 February, p 359) have stated an obvious truth. If you write out the day's programme carefully for the old folks they'll know when to take the tablets. General practitioners up and down the country have known this for years. In almshouses, garrets, and council flats you will find, usually written on the back of an envelope and propped on the mantelpiece, the day's dose of drugs carefully spelt out and interpreted.

But you will never see long words like frusemide. Everybody in the outback knows frusemide as Lasix. Not long ago a patient fresh from hospital smacked on my surgery desk three containers bearing the imposing labels, potassium clorazepate, doxepin hydrochloride, and maprotiline hydrochloride. Imagine my relief when I discovered he was only having our old friends Tranxene, Sinequan, and Ludiomil.

In pharmacies, surgeries, and people's houses everywhere trade names are the order of the day. By all means use ego-boosting proper names in hospital if you must, but don't forget to provide a translation when the patient goes home. This improves compliance all round.

HAMISH NICOL

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Administrative staff in the NHS

SIR,—In the face of considerable ill-informed criticism from journalists, doctors, and many other quarters about the role and number of

administrative staff in the National Health Service I feel compelled to set out the facts, of which so many critics are unaware.

The Department of Health and Social Security's definition of an administrator can be summed up as "a person who spends part of his working time in an office and who does not deal directly with patients." This definition includes many who spend only a small proportion of their time on office work, the majority being devoted to supervising or assisting those who are caring directly for the patient.

Statistics have been manipulated to try to demonstrate that there are too many administrative staff, the latest demonstrating that there has been a larger increase in administrators than nurses and that the ratio of administrators to hospital beds has increased. These comparisons are carefully selected, quoted out of context, and largely irrelevant. This is not to say that all the administrative work which is done in the NHS is worth while or economic. Members of Parliament and leaders of the medical and other professions may criticise the administrative processes and those who have to operate them, but they were mainly responsible for setting them up.

We went through an exhausting and disturbing experience in 1974 and the NHS has survived only because of the hard work and—yes—devotion of the administrative staff. Many were made redundant, many had to retire early, and many of those who kept their jobs have died or suffered serious ill-health from the excessive and quite unnecessary strain imposed by Parliament, the Civil Service, and all other parties to the reorganisation of the NHS in 1974—including the medical profession.

These are simple facts which everyone should know and on behalf of the 720 members of my branch of Nalgo I would like to warn anyone who wishes to impose a second reorganisation on us that we will strenuously resist it. Since the doctors, who probably form the bulk of our critics, no longer consider strike action unethical our choice of methods of resistance is wide.

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Loss of doctor in the course of duty

SIR,—One wonders how deeply Dr G C C MacVicker (19 February, p 512) has inquired into the "victimisation" of the secretary of a community health council "doing the duty laid upon him . . . as 'patient's friend.'" Possibly he hopes to persuade his local medical committee colleagues to press for a revision of the regulations which allow the general practitioner some choice of patients. Perhaps he feels that his chairmanship of a CHC qualifies him to judge those doctors who exercise that choice. The facts given in a television programme might well be true, but justice demands not only the truth but the whole truth.

Four months ago this secretary submitted a report to his council alleging a "pattern of complaints" against local general practitioners. As an example he cited the details of a formal complaint made by a widow to the Family Practitioner Committee concerning a doctor's treatment of her husband. It was reported that