asthma need to be appraised critically. For example, the number of admissions to hospital is often used as evidence of bad care of asthma in general practice. Admission to hospital may, however, often be appropriate. If we can remove the stigma attached to admissions for acute asthma generated by general practitioners junior hospital doctors may take our referrals for admission more seriously.

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AUTHOR'S REPLY,—I did show an increase in the number of peak flow recordings obtained post-clinic, although these were well short of the agreed standard of 100%. We hope to achieve our agreed standard before the audit cycle is repeated.

The clinic is run by a trained asthma nurse. We now prescribe peak flow meters for all our asthmatic patients, but this was possible only after the clinic had started. We are educating our patients about how to manage an acute attack on the basis of their own serial peak flow readings.

I did not include a definition of asthma in my paper as it was adequately defined in one of my references, and this is the working definition that we use.[1] The term known asthmatic patients diagnosed in 1989 refers to those patients identified as asthmatic by one of the doctors in our practice at some previous time, based on commonly accepted criteria in the history and physical examination but not necessarily on more objective measurements such as serial peak flow readings and reversibility tests. The increased proportion of asthmatic patients entered in the computer post-clinic largely represents previously known asthmatic patients not clearly identified as such before the asthma clinic was started.

Finally, the numbers of admissions to hospital that I recorded pre-clinic and post-clinic are too small for any worthwhile comment to be made on that aspect of the audit, although I agree that no general practitioner should hesitate to recommend admission for patients with acute asthma if in his or her clinical judgment this is appropriate.

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Site for immunising infants

SIR,—I do not agree with Angus Nicoll about the accepted site for immunising infants in general practice.[1]

I and colleagues conducted a most thorough search of published reports, both clinical and medicolegal, and consulted every leading authority during a dispute that we had with our local health authority over this matter in 1984.[2] Paediatricians advised us that this was not a matter for specialist pronouncement but one in which general practitioners had most experience. The Medical Defence Union, after giving a knee jerk warning against using the buttock, consulted its records for instances of injury. It reported 22 cases: 17 injuries to the radial nerve and five to the sciatic nerve, none of which had occurred in infants. Baraff *et al* showed that local reactions, notably pain and swelling, were more common after immunisation in the thigh.[3] Bergeson *et al* stated that the most common serious complications of intramuscular injections in children were muscle contractures and nerve injuries,[4] most of which were radial nerve palsies. Some children have required excision of fibrous tissue and lengthening of the triceps.

How did the strong fear of the sciatic nerve arise? Gilles and French showed from studies on young animals that penetration of the sciatic nerve did not cause palsy.[5] Nor was palsy due to ischaemia from interruption of the vascular supply or to intraneural haemorrhage. The final conclusion reached was that substances injected, such as streptomycin, antitoxins, bismuth, and quinine, were neurotoxic. But measles, mumps, and rubella vaccine is not neurotoxic, and in any case the sciatic nerve cannot be reached with the 16 mm needle used now, even in a test on a stillborn infant weighing 2000 g.

The infant prone across the mother's lap provides the most stable position for mother, baby, and doctor. Most important, the child does not observe the assault.

Finally, with regard to Nicoll's comment about effective absorption, we were given expert advice against rapid absorption: the child's immune system is immature, and, unlike a brush antigen without cells like hepatitis B vaccine, diphtheria, tetanus, and pertussis vaccine needs to be absorbed slowly. I hope that the buttock will become the preferred site for injections before the age of 1 year.

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High dose triazolam and anterograde amnesia

SIR,—In the context of the controversy surrounding the safety of the hypnotic benzodiazepine triazolam[1-5] we report the findings of an unpublished study performed in 1977, which support a relation between the dose of triazolam and the incidence of anterograde amnesia.

We studied 44 psychiatric patients admitted to the emergency psychiatric department of Liège University Hospital with symptoms related to personality disorders (n=26), psychoses (n=10), and adjustment disorders (n=8). There were 20 men and 24 women aged 17-66 (mean (SD) 35·4 (12·8) years). With their informed consent patients received triazolam 2 mg at bedtime for their acute insomnia for 1-19 days (mean 4·2 (3·6) days). No other psychotropic drugs were given. The patients' behaviour at night was observed by the psychiatric resident on call (P-FP or DS) as well as by the nursing staff. An independent resident interviewed the patients the next morning to assess their memory of the behaviour observed during the night.

Twenty two patients did at least one thing at night that they could not remember subsequently. The most common event was nocturnal bulimia (n=13): patients ate some of their own sweets or took their neighbours' supply or emptied the unit's fridge. Other motor behaviour was observed in six cases, from simple walking in the corridor or making telephone calls to leaving the unit and, in one case, driving a car and returning several hours later. Six patients showed increased anxiety with typical panic attacks, and five patients verbalised suicidal thoughts, which did not appear in their history or in the assessment performed the previous day or the next morning. Suicide attempts were noted in four patients concurrently with the suicidal ideation, and heteroaggressive acts in two patients. None of the patients recalled these adverse events during the interview the next morning. The adverse events stopped in 21 patients when triazolam was stopped.

This study shows an extremely high incidence of amnesic adverse events associated with high dose triazolam. Amnesic bulimia at night was so common that we called it "the triazolam fridge syndrome." Triazolam was first marketed in Belgium in 1977. The normal recommended dose then was 0·25-1 mg; we gave 2 mg. The recommended dose now is 0·125-0·5 mg.

Several previous reports have described anterograde amnesia associated with triazolam at lower doses, but with a much lower incidence.[6-10] Our study suggests that the dose of triazolam is a crucial factor in the incidence of amnesic reactions.

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Monitoring lithium treatment

SIR,—R F Kehoe and A J Mander report serum lithium concentrations in excess of 1·05 mmol/l in 56 of 458 patients taking lithium during a one year period and note that in one third of these cases the doctor did not make any response within six weeks.[1]

These findings, while giving cause for concern, may in fact compare favourably with the practice in parts of the country where no lithium register is kept. Recently a lithium audit was carried out in the department of psychiatry, North Manchester General Hospital, a district general hospital serving a catchment population of 200 000. Of 201 patients identified as taking lithium, the case notes of 56 were selected at random for examination. Of 37 patients who had been taking lithium for three or more years, eight were found to have had, during the year of audit, a serum lithium concentration $\geq$1·3 mmol/l. In only five of these cases was there evidence in the case notes of the doctor having initiated any response.

Perhaps more worrying was the finding that, of the 31 patients who had been started on lithium within the previous five years, there was confirmation in the case notes of there having been a prior physical examination in 20, a medical history in 18,