and found safe biochemically.⁶ Other investigators, concerned about the instability of thiamine in intravenous solutions containing preservatives such as 0.1% sulphite, have not tested doses of thiamine lower than 50 mg daily.⁷

(3) Twice daily parenteral water soluble vitamin regimens seem safer and more physiological, particularly in liver disease, high energy parenteral feeding (>2400 kcal (10.0 MJ)/day), and when diuretics are given concurrently.⁸

(4) The common practice of unbalanced administration of dextrose solution is dangerous and unjustified: at necropsy Wernicke's encephalopathy has been documented in such cases even without liver disease and when supraphysiological doses of thiamine were used (24 mg/daily) and daily energy loading was moderate (1000 kcal (4.2 MJ)).⁹

Wasting disease, major surgery, burns, alcoholism, septic shock: patients with any combination of these must represent most of those given parenteral feeding. Doctors and manufacturers of preparations for parenteral feeding surely have a responsibility to "get it right first time" for such patients. Others agree about the inadequacy of present regimens of water soluble vitamins, particularly thiamine, in parenteral feeding.¹⁰ We challenge manufacturers to bring recommended dosages of thiamine into line with those that have been tested and found safe.

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Use of electronic mail for patient record transmission

SIR,—I was interested to read Mr John F Cowie's report of the use of the Telecom Gold electronic mail service to transmit laboratory reports between two hospitals (16 November, p 1439).

At Northwick Park Hospital we are nearing completion of a six month pilot study to evaluate the use of electronic mail for sending laboratory results to local general practices, a full report of which is in preparation.

The Prestel Mailbox service, rather than Telecom Gold, was chosen for our project to relay results from the microbiology laboratory at the hospital to seven group practices in the district. The two messaging services are very similar, all subscribers having their own "mailbox" from which only they can take messages; other subscribers' mailboxes cannot be opened.

Each practice has been provided with a low cost viewdata terminal (Tandata TD1616F), colour television, and thermal printer, and similar equipment is installed in the laboratory. Results are entered each afternoon in the laboratory and

transmitted as mailbox messages to the local Prestel computer at the same time as the duplicate conventional report leaves in the internal post. The result is available in the practice's own "mailbox" when the doctors next call the Prestel computer—usually during evening surgery on the same day. At that time the results are taken from the Prestel mailbox, saved in the terminal, and printed after disconnection from the computer (to reduce telephone and computer charges). The paper report is carried to the practices by a hospital van.

Using the date and time of sending the Prestel report, the date and time received by the practice (written on the printed copy), and the date of receipt of the paper report, we can compare the times taken for conventional and electronic mail results to reach the practices. Preliminary analysis shows that electronic mail reduces the delay incurred during distribution by one to four days.

The service has been found to be a reliable method for sending reports, in respect of both the integrity of messages and the reliability of the equipment. No specific data encryption techniques were applied to this pilot study, the inbuilt security features of customer identity number and password being relied on for protection from unauthorised access. On line inquiry of the laboratory data, while the ultimate goal, was not provided in this pilot study. Subsequent development of the system using a laboratory viewdata host computer would permit such on line access to past results and would enable us to incorporate further security measures, including data encryption.

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Staphylococcus saprophyticus as a urinary pathogen

SIR,—The article by Ms Linda Pead and others (26 October, p 1157) stimulated us to review our own findings in relation to urinary tract infections caused by *Staphylococcus saprophyticus*. Our findings are largely similar to but differ in some respects from theirs.

In our laboratory urine specimens are cultured on blood and MacConkey agars and significant counts taken to be greater than 10⁶ colony forming units per litre.

From April 1977 to March 1982 we reported 5862 urinary isolates to general practitioners in the Cardiff area. Coagulase negative staphylococci sensitive to novobiocin were accepted as *S saprophyticus*.¹ There were 267 of these, 4.6% of all presumptive pathogens, and 81% of the patients had accompanying pyuria. Nine hundred and fifty nine (16%) of all our significant cultures were from women aged 15 to 25, and in this group 147 (15%) were *S saprophyticus*. Accompanying pyuria was present in 90% of these. The proportion of such infections seemed to have increased over the years, from 9% in 1978 to 21% in 1981, in line with the Portsmouth findings. The age distribution of all *S saprophyticus* infections is shown in the table. As in

Isolates of *S saprophyticus* from women not in hospital by age (percentages are given in parentheses)

Age (years):	<15	15-25	26-50	>50	Total
Cardiff	10 (4)	147 (59)	68 (27)	24 (10)	249
Portsmouth	36 (2)	1237 (66)	552 (30)	55 (3)	1880

the Portsmouth study, we noticed an increased relative frequency of *S saprophyticus* infections in the 15-25 age group in the second half of the year, although the figures fluctuated.

Ms Pead and her colleagues reported only four of

their strains resistant to normally used antibiotics. However, we deemed 43% to be resistant to ampicillin/amoxycillin.

The Cardiff findings match those from Portsmouth in respect of the proportion of all urinary infections in the 15-25 year age group caused by *S saprophyticus*, the incidence of pyuria accompanying *S saprophyticus* infections, the increasing proportion of such infections over several years, and the relative increase in the second half of the year. Three fifths of all *S saprophyticus* infections in women in Cardiff occurred in the 15-25 year age group compared with two thirds in Portsmouth. This would support the contention that these infections are associated with initial sexual activity, and Cardiff is a university city although not a holiday resort. We have no explanation for the significantly increased number of infections ($\chi^2=26.7$; 1 df; $p<0.001$) in the over 50s in Cardiff. It is of interest that only 75% of this group had accompanying pyuria.

Our high incidence of ampicillin/amoxycillin resistance is probably because we do not rely on ampicillin/amoxycillin disc sensitivity alone but report on the basis of sensitivity to penicillin discs.²

There are still many unknowns about *S saprophyticus* urinary tract infections. Perhaps in the season when a young man's fancy turns to thoughts of love a young maiden's should turn to thoughts of (trimethoprim) prophylaxis.

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Phaeochromocytoma presenting as an acute abdomen

SIR,—I was interested to read the Lesson of the Week presented by Dr David J Jones and Ms Patricia Durning (2 November, p 1267). I was unfortunate to be concerned with a similar case.

A 48 year old woman was admitted after a road traffic accident during which she dislocated her hip. Preoperative investigations were unremarkable apart from an initial blood pressure of 170/130 mm Hg and pulse of 100 beats/min. Subsequently the blood pressure ranged from 160/120 mm Hg to 150/100 mm Hg with a pulse of 76 to 92 beats/min.

After premedication with pethidine 50 mg the patient was transferred to theatre. Preoxygenation was followed by intravenous thiopentone 250 mg. Anaesthesia was maintained with nitrous oxide and halothane in oxygen. Closed reduction of the hip was rapidly achieved. While hip traction was being applied the patient's respiration became irregular and the pulse impalpable. Ventilation with 100% oxygen and external cardiac massage were started. An electrocardiographic monitor showed ventricular fibrillation so a direct current shock was administered. Forty five minutes of resuscitation ensued during which repeated doses of resuscitative drugs and DC shocks were given. The rhythm alternated between sinus bradycardia, supraventricular tachycardia, ventricular tachycardia, and ventricular fibrillation.

A stable rhythm was eventually achieved with a heart rate of 120 to 150 beats/min and a blood pressure of 250/120 mm Hg. The patient was transferred to the intensive care unit for ventilation. She continued to have episodes of ventricular tachycardia despite a lignocaine infusion. After several hours she became hypotensive and despite further resuscitative measures she died. Postmortem examination showed bilateral phaeochromocytomas.

These case reports support the contention of Apgar and Papper that undiagnosed phaeochromocytoma is associated with a high mortality.¹

A high index of suspicion might have averted disaster at least in this case. In none of the three cases considered were the effects of α and β blocking drugs tested, although their use to control arrhythmia due to phaeochromocytoma has been recommended,^{2,3} as has the use of sodium nitroprusside. Successful diagnosis and management of unsuspected phaeochromocytoma during emergency laparotomy has been described,⁴ but there have been reports of deaths during extra-abdominal surgery—for example, mastectomy,⁵ breast biopsy,⁶ and finger exploration.⁷

The incidence of phaeochromocytoma (0.1%) is much higher than that of other conditions that have been brought to the anaesthetist's attention, such as malignant hyperpyrexia, and the chance of encountering an undiagnosed case, although small, is real.

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Banned drugs

SIR,—Dr R A Keable-Elliott (23 November, p 1508) is not alone in wondering if the panel serves the best interests of our profession. In the same issue as his letter, the Secretary of State for Social Services is reported as saying that the list was running successfully and was on target to save £75m (p 1519). Unfortunately success politically is not the same as success medically. This "success" undoubtedly means that, despite Mr Fowler's statement to the contrary, other groups of drugs will probably be dealt with in the near future.

Can we suggest that the General Medical Services Committee and the Royal College of General Practitioners agree to a further panel being established of their choosing, to be varied depending on the group of drugs under consideration and to include at least one expert in the particular group—for example, a dermatologist for skin drugs? If this had been done previously, and say an ENT specialist included, it is highly unlikely that mucolytics would have been left out; but, of course, this might have interfered with the "success" of the limited list.

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Should nurses practise prevention?

SIR,—Dr W Reith asks whether practice nurses generally are carrying out preventive work (16 November, p 1394). Initiatives to develop nursing skills in anticipatory and preventive care are being taken by both the Royal College of Nursing and individual groups of practice nurses. The college, for example, has produced a document on "The training needs of practice nurses," the results of a working party made up of representatives of the college, the Council for the Education and Training of Health Visitors, the Panel of Assessors

for District Nurse Training, the Royal College of General Practitioners, and the General Medical Services Committee of the BMA. This has been followed by an outline curriculum for practice nurse training in 1985 produced by the National Boards for Nursing.

Local interest groups now number about 26 and are formed with the aim of increasing knowledge and skills. Annual national conferences have been held since 1983. Study days or sessions are organised by both the Royal College of Nursing and local groups and are often oversubscribed.

We are grateful to the many general practitioners who give their time, encouragement, and support to these activities. We would now like to develop a professionally and academically recognised course specifically catering for our extended role in primary health care. Certain polytechnics are preparing such courses in consultation with general practitioners and practice nurses, but with the opportunity for attending such courses we also need study leave and, in particular, designated financial help from a central source.

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Screening for Down's syndrome

SIR,—Drs Victoria Murday and Joan Slack (9 November, p 1315) compared their data on maternal serum α fetoprotein concentrations where the fetus subsequently proved to have Down's syndrome with those in control pregnancies. They showed higher relative risks of Down's syndrome the lower the multiple of the normal median α fetoprotein value.

We have compared serum α fetoprotein values (expressed as multiples of the normal median) in cases where a Down's syndrome child was born with those in a series of women at low risk of Down's syndrome—that is, excluding those over 35 years of age or with family histories, etc. Examinations by gestational age at which the serum was drawn showed the relative risk of Down's syndrome to be consistently higher at each multiple of the median for specimens taken at 15 weeks' gestational age than those taken at 16 and 17 weeks. At 15 weeks three out of three cases of Down's syndrome were in the lowest 14% of α fetoprotein values at that gestational age but at 16 weeks only one in six cases ($p < 0.05$). This seems to support the suggestion in the amniotic fluid data of Nelson and Paterson.¹

Perhaps the effectiveness of serum α fetoprotein as an indication of Down's syndrome could be improved by examination of specimens at 15 weeks.

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Carbon monoxide poisoning in childhood

SIR,—We read with interest the Lesson of the Week by Drs F Gemelli and R Catani on carbon monoxide poisoning in childhood mimicking gastroenteritis (26th October, p 1197).

Two years ago we admitted a 24 year old woman who had been working in her kitchen, where the flue of the gas water heater was blocked. On admission she was deeply unconscious, but examination was otherwise unremarkable except for a rectal temperature of 33°C and a blood pressure of 90/60 mm Hg. Her

carboxyhaemoglobin level was 34% saturated about one hour after exposure to carbon monoxide ceased.

She was treated with 100% oxygen and rapidly regained consciousness. Within a few hours she developed profuse watery diarrhoea and abdominal pain. Close questioning of the patient and her fiancé revealed that they had eaten the same meals and nothing unusual. The man remained well. No pathogens were isolated from stool or blood cultures.

Later she deteriorated, with bloody diarrhoea, and despite worsening renal and hepatic function underwent a laparotomy for suspected bowel infarction. At operation the bowel was blue but viable and none was resected. She went on to develop acute tubular necrosis and anoxic liver damage, diagnosed on biopsy, but made a complete recovery.

Though an adult, this patient showed a similar sensitivity to fairly low levels of carbon monoxide as the Italian authors claim in their three cases. In at least two of their cases measurement of carboxyhaemoglobin was considerably delayed, and the value may initially have been much higher because the half life of carboxyhaemoglobin when a patient is breathing air is 250 minutes. In our case the primary diagnosis was not in doubt, but the features of gastroenteritis caused concern and were unexplained until the patient developed more apparent ischaemic damage to the bowel. Gastroenteritis in these cases may be a symptom of ischaemic damage to the bowel.

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Crohn's disease in the elderly

SIR,—Information from our recently developed Tayside Crohn's disease register agrees with the recent leading article by Drs John Rhodes and James Rose (26 October, p 1149). This elderly group, however, merits further comment.

Our computerised register contains all the confirmed cases of Crohn's disease in Tayside since 1968. Tayside has a well defined population (391 814 and 397 374 at the 1981 and 1971 censuses respectively) in which we have found 292 patients with Crohn's disease, 30 (10.3%) being aged 60 or over at diagnosis.

The article gave no indication of the sex ratio of this elderly group, which we have found to be different from that in the younger group. Our figures of male:female ratios of 40:60 in the elderly and 48:52 in those under 60 are similar to those of Carr and Schofield (23:77 and 43:57 respectively).

We have found that half the elderly group have large bowel disease compared with 19% in the under 60 group.

This difference is reflected in the symptoms and radiological and endoscopic findings in these elderly patients. Although the mode of presentation was similar for both elderly and younger groups, fewer of the elderly group had abdominal pain (56% compared with 76%) and more had rectal bleeding (27% v 18%) as a presenting symptom. Definite radiological evidence of Crohn's disease was present in nine of the elderly group, seven of the nine being diagnosed on barium enema examination; furthermore, only 19% of barium enemas in this group were described as normal (35% in the under 60 group). Similarly, 64% of large bowel endoscopies in the elderly showed evidence of inflammatory changes (54% in the younger group); and of the 15 who underwent biopsy, nine were found to have definite histological evidence of Crohn's disease. Finally, the older group showed more than normal variation in certain haematological and biochemical variables despite a similar length of history before diagnosis. Although serum protein varied little, serum albumin was below 32 g/l in 62%