(7) Contrary to much practice streptomycin has been relegated to deal with "difficult" patients, ethionamide has been placed in "reserve," and thiacetazone, much used in the developing countries, has not been mentioned.

(8) Perhaps most significant is the failure to discuss the importance of monitoring the patient's progress through sputum cultures and drug sensitivity testing.

Dr Seaton rightly notes some of the pitfalls met with in the treatment of individual patients. However, even the most affluent countries might have difficulty in justifying the use of expensive chest physician time to check on the accuracy of the pharmacist or the drug handling of the patient. It is the community nurse or auxiliary health worker who should play the primary role in the treatment of all ambulatory patients, not just the vagrants and alcoholics.

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¹ WHO Expert Committee on Tuberculosis, *Ninth Report*, Technical Report Series No 522. Geneva, WHO, 1974.

² Sewell, E M, O'Hara, D O, and Kendig, E L, *Pediatrics*, 1974, **54**, 650.

³ Evans, D A P, *Annals of the New York Academy of Sciences*, 1968, **151**, 723.

⁴ Center for Disease Control, *Morbidity and Mortality Weekly Report*, 1971, **20**, 231.

⁵ Springett, V H, *Practitioner*, 1975, **215**, 480.

Pneumonia

SIR,—Dr Colin M Ogilvie starts off well when discussing the management of pneumonia (25 March, p 771), but how I wish he had consulted an experienced general practitioner before he sent you the completed manuscript. To take 12 ml of blood for four separate containers before giving antibiotics is a counsel of perfection which is unlikely to be carried out routinely in many hospitals, let alone in general practice, where few doctors carry syringes larger than 10 ml. How many bacteriologists would be pleased to receive all these specimens as well as sputum samples from every case of pneumonia in their catchment area? Dr Ogilvie advises chest radiographs during the illness to rule out underlying lesions. These are difficult to arrange in the home and are more likely to be helpful during convalescence. If amoxycillin is prescribed "thrice daily" 15 h may elapse between the teatime dose and the breakfast dose in some households. Eight-hourly dosage should be advised. Transfer to hospital after fever has persisted for more than four or five days is unnecessary in viral pneumonia unless the patient is toxic. Finally, Dr Ogilvie's first-choice simple analgesic, dihydrocodeine, combined with the codeine of his first-choice linctus, will cause constipation in most patients confined to bed.

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What kind of cot death?

SIR,—We are probably not the only investigators into sudden death in infancy to have noticed the resemblance between the three types described in section 7 of the 1965 "Enquiry into Sudden Death in Infancy"—"(1) cause of death established, (2) possible cause of death found, and (3) cause of death not established" with those in your leading

article "What kind of cot death?" (18 March, p 671).

That "this heterogeneity reduces the value of the epidemiological facts about cot death that continue to be gathered" is a comment whose validity is better assessed at the conclusion of the studies to which you refer. The fact that "no study has attempted to differentiate its findings for the three clinicopathological categories of cot death" is surely a reason for continuing epidemiological studies until this problem is solved.

One benefit of cot death fact gathering is that the recently bereaved parents are put in touch with skilled personnel with an interest in the death of a specific baby. From comments made to us during our studies and from elsewhere these interviews both comfort and relieve—activities which we regard still as important in late 20th century medicine. Furthermore, those engaged in community health services themselves benefit by participating in prospective studies, for in this way they become more aware of the possibilities for prevention described in the article.

We agree that, for reasons not entirely clear but which may be related to the fact of a much greater awareness of the vulnerability of certain categories of baby, the infant death rate is falling. In our study we have been heartened to find that in one of the four boroughs concerned there has been no instance of cot death in the year just ended at a time when the birth rate was rising.

In our view this sort of study should be encouraged in those areas in which it is not yet practised, for the benefits are bound to outweigh the organisational problems. Not least of those benefits is the bringing together of all those who must be involved when a sudden infant death occurs in a manner which indicates to the parents that their particular personal tragedy has evoked concern.

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¹ Ministry of Health, *Reports on Public Health and Medical Subjects*, No 113. London, HMSO, 1965.

SIR,—Your leading article (18 March, p 671) states that the recent reduction in the postneonatal mortality rate "is hard to explain at a time when the economic climate has been at its worst since the war."

Postneonatal mortality rates are available for England and Wales since 1905. Since then there have been four occasions on which the unemployment rate has more than doubled to over 5% in less than two years: 1907-8, 1920-1, 1929-31, and 1974-6. The average postneonatal rates in England and Wales for the two years immediately preceding the rise in unemployment and the following 2 years were:

83.8 (1906-7) — 74.5 (1908-9)
51.2 (1919-20) — 43.4 (1921-2)
37.8 (1928-9) — 32.0 (1930-1)
5.4 (1973-4) — 4.7 (1975-6)

The percentage decline in each period was 10%, 15%, 15%, and 13% compared with an average decline of 10% every two years since 1905. It appears that unemployment does not slow the rate of decline of the postneonatal mortality rate and may accelerate it.

This phenomenon could be due to a decline

in fertility. The fertility rate (births per 1000 women aged 15-44) for the corresponding periods were:

108 (1906-7) — 105 (1908-9)
86 (1919-20) — 85 (1921-2)
68 (1928-9) — 67 (1930-1)
68 (1973-4) — 63 (1975-6)

There is a decline in fertility in each of these periods but it is consistent with the general decline in the respective period.

It has been known since 1927¹ that the total standard mortality rate in the USA and Britain has tended to decline more rapidly when there is an increase in unemployment. This has been confirmed recently for the USA.² The standard mortality rates for relevant periods were (1930 = 100):

159 (1906-7) — 151 (1908-9)
133 (1919-20) — 126 (1921-2)
121 (1928-9) — 112 (1930-1)
73 (1973-4) — 72 (1975-6)

The percentage decline in each period was 5%, 5%, 7%, and 1% compared with an average decline of 2% every two years since 1905. There is an increased rate of decline on the first three occasions, which Eyer² has argued is due to the "moderate predominance of the stresses associated with migration, community breakdown, and overwork during the boom over the stress associated with unemployment during the depression." One result is that "the suppression of immunity in stress may thus be responsible for the increased population susceptibility to disease prior to epidemics."

A smaller reservoir of adults with infectious disease may explain the earlier acceleration in the rate of decline of the postneonatal mortality rate but does not explain the most recent acceleration.

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¹ Thomas, D S, *Social Aspects of the Business Cycle*. New York, Knopf, 1927.

² Eyer, J, *International Journal of Health Services*, 1977, **1**, 125.

Age and urine concentration after desmopressin

SIR,—We have previously demonstrated a relative impairment of urine concentrating ability in a group of hospital inpatients compared with a younger group of healthy volunteers (7 January, p 24). The differences noted might be attributed to the effects of illness or to deterioration in concentrating capacity with advancing age.

To investigate this further we selected 43 healthy volunteers (31 men and 12 women; age range 20-59 years). Each underwent a urine-concentration test, receiving 40 µg of desmopressin intranasally at 0900 on the day of the test as previously described.¹ Osmolality was measured on all urine specimens passed over the next 9 h. Age groups and mean maximum urine osmolality for each group are shown in the accompanying table.

The mean maximum osmolality for group A was significantly greater than for groups E ($P < 0.01$ by Student's t test), G ($P < 0.02$), and H ($P < 0.05$). Other differences did not reach statistical significance. Results for male and female subjects were similar in each age group.

There was no significant difference between mean maximum osmolality in the 24 healthy subjects aged 40-59 (894 ± 105 mmol/kg) and that previously measured in 11 convalescent

Results of desmopressin urine concentration test at different ages

Age group (years)	No of subjects	Mean maximum osmolality (mmol/kg) $\pm$ SD
(A) 20-24	7	1044 $\pm$ 73
(B) 25-29	3	983 $\pm$ 48
(C) 30-34	3	983 $\pm$ 152
(D) 35-39	6	935 $\pm$ 82
(E) 40-44	8	894 $\pm$ 95
(F) 45-49	3	926 $\pm$ 143
(G) 50-54	8	873 $\pm$ 142
(H) 55-59	5	909 $\pm$ 91

patients aged 40-59 (864 ± 164 mmol/kg). Thus although all subjects achieved a concentration which we would regard as normal our results suggest that urine-concentrating ability diminishes with advancing age. We have found no evidence of diminished ability as a consequence of various non-renal diseases.

We thank Dr J Lunn of the Staff/Student Health Service for his co-operation and Dr Brian Donovan, medical director of Ferring Pharmaceuticals Ltd, for the desmopressin.

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Cure of heterophobia by sexual surrogate therapy

SIR,—The *Index Medicus* contains no reference to sexual surrogate therapy, which is a recent development in the management of sexual dysfunction. It is essentially a behavioural technique based on the premise that sexual behaviour is at least partly the product of learning and conditioning. Sometimes sexual responses are absent or inappropriate and it may be difficult for patients to engineer suitable encounters in which to learn sexual skill and confidence. The disability may therefore be reinforced, especially if they also lack basic social skills. Prostitutes are a traditional source of experience in such cases, but most prostitutes are more interested in earning than in education and have little incentive to spend extra time with difficult clients.

Sexual surrogates see themselves primarily as therapists and educators, and financial considerations are either secondary or absent. They understand sexual anxieties and the need to discuss them and they establish a social relationship before proceeding to specifically sexual instruction. Surrogates have usually been employed to treat sexual dysfunction and anxiety in heterosexual men but can also be useful in managing sexual ambivalence.

The patient, a male student aged 22 with well-controlled asthma, was referred by the university health centre because of depression and difficulty in relationships with women. He was the only child of a rather puritanical family and had a poor relationship with both parents. At the age of 16 he spent a year as an inpatient in an adolescent unit and made a fairly serious suicide attempt. He was a good student and not short of friends but was so anxious about sexual failure that he avoided any sexual involvement and doubted if he could ever manage a sexual relationship. He masturbated to fantasies of muscular men with only occasional fantasies involving women, and his masturbatory technique was very unusual. He wondered whether he was homosexual but seemed to have no desire for actual physical contact with men. Since he had a rather asthenic physique the fantasies may have reflected feelings of shame about his own body.

After discussing various alternatives—including

contact with homosexual groups—I suggested that surrogate therapy, which was available locally, might be the most useful approach. Initially he was rather opposed to the suggestion, maintaining that sex could not be separated from a "real" relationship and that he wanted to combine learning about sex with being in love. His reluctance diminished after a further serious suicide attempt when a girl rejected him, and he accepted that treatment was the lesser risk.

Over a period of four months he had nine sessions, of which the first six involved only talking or varying degrees of petting. During this period his masturbatory technique became more normal and more enjoyable. Men faded out of his fantasies and women faded in. Eventually he proceeded to full sexual intercourse on three occasions with complete success.

Since then he has remained much happier and although 12 months later he had not found "the right girl" he was confident that when he did there would be no sexual problem. He has neither needed nor requested further psychiatric consultation, there have been no more overdoses, and his asthma has not worsened.

This report demonstrates the value of surrogate therapy for patients who cannot overcome their sexual problems with other and less controversial techniques and indicates that it need not be restricted to those without a significant psychiatric history. It has not led either to promiscuity or to a change in his view of what constitutes the best form of sexual relationship. He has been able to accept surrogate therapy as a necessary prelude to his sexual maturity—as necessary for him, perhaps, as the stage of anxious adolescent groping through which many of us pass and to which few of us would wish to return.

I am grateful to Dr Martin Cole, Institute for Sex Education and Research, Birmingham, for his help with the treatment and his advice in the preparation of this report.

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Fetal malformation after Debendox treatment in early pregnancy

SIR,—The interesting paper by Drs Dian Donnai and R Harris (18 March, p 691) reminds me of a similar case noted by myself and a paediatrician colleague, Dr R Sykes, at Sefton General Hospital, Liverpool. In this case the patient took Debendox at five weeks for 21 days and her infant was born with a malformation of the upper limb. The malformation, shown in the figure, consisted of the absence of three digits and hypoplasia of the right hand together with absence of the ipsilateral pectoralis major muscle. The condition is known as Poland's anomaly.¹ The time the drug was administered was in keeping with upper limb-bud development, which is thought to occur at 43-46 days post conception.^{2,3}

The use of antiemetics, particularly in early pregnancy, demands caution at all times. Although Debendox (dicyclomine hydrochloride 10 mg, doxylamine succinate 10 mg, pyridoxine hydrochloride 10 mg) is a widely used preparation this does not exclude it from having teratogenic effects in certain cases. This was well exemplified by the thalidomide disaster. The genetic constituent of the embryo, its age, and the dose of the drug administered are all factors to be considered in subsequent teratogenesis. This case, like those of Drs Donnai and Harris, does not prove

Poland's anomaly of right hand.

Debendox to be responsible for the congenital abnormality but merely points out the possibility and strengthens the suspicion that before six weeks' gestation Debendox may have teratogenic properties.

In conclusion, avoidance of antiemetics in early pregnancy is preferable. If it is necessary to use such a drug it would seem reasonable to prescribe one with a single, relatively safe constituent such as Phenergan (promethazine). A strong criticism must be made of the pharmacological principle of using three drugs, as in Debendox, in an antiemetic preparation, particularly when none of these drugs has been completely exonerated from having teratogenic action.

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- ¹ Poland, A, *Guy's Hospital Reports*, 1841, 6, 191.
- ² Smith, D W, *Recognisable Patterns of Human Malformation*, p 315. London, Saunders, 1970.
- ³ Hamilton, W J, Boyd, J O, and Mossman, H W, *Human Embryology*, 4th edn, p 183. Cambridge, Heffer, 1972.

SIR,—We were interested to read the description by Drs Dian Donnai and R Harris (18 March, p 691) of three infants with gastroschisis whose mothers had taken Debendox starting 5½-6 weeks after the start of their last menstrual period. The malformations described, although by no means common, are not as rare as is suggested by the finding of a single reported case in a literature search. Three infants with severe gastroschisis and anomalies of the limbs were born in a single maternity unit delivering about 3000 babies per annum during a four-year period. In one (illustrated) the right leg was absent and there was a left clubfoot; in another the right arm was underdeveloped; and in the third there was a right clubfoot.

In our prospective study of Debendox in pregnancy¹ 372 mothers started Debendox at 6 weeks or earlier. Seven infants (1.9%) had significant malformations, but none had gastroschisis or exomphalos. Of 1620 mothers who started Debendox at or before 12 weeks, 27 (1.7%) had malformed babies. Exomphalos occurred in one infant only whose mother started Debendox at 12 weeks. There were no cases of gastroschisis.

The coincidence remains of all three mothers in the report by Drs Donnai and Harris having taken the same antiemetic, although this is difficult to interpret without further informa-