

ing the emphasis of the medical course away from the technically minded, curatively oriented Western style towards the preventive approach based on simple techniques in which the rural worker is regarded as being at the top of the pyramid of care rather than at the bottom.

The disparaging remarks which Dr. Senewiratne makes about medical auxiliaries do not accord well with experience in China¹ and Africa, where it is being found that a simply trained medical worker in close contact with the people and under the direction of doctors can improve basic health more effectively and much more cheaply than under a conventional Western-type system—as well as making the doctor's work, in organizing a team approach, more rewarding.

It is inevitable that medical training in a developing country patterned on Western methods will encourage migration, as will postgraduate courses in Europe and America. As Dr. Senewiratne points out, much insidious harm is done by such courses, which could be avoided if the teachers were instead seconded to the country concerned for a period. This would also have the valuable effect of widening the participant's viewpoint immeasurably.—I am, etc.,

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¹ *Health Care in China*. Geneva, Christian Medical Commission, 1974.

Complications of Laparoscopy

SIR,—Though a straightforward laparoscopic sterilization is probably a shorter procedure than a tubal ligation after laparotomy, the advantage is marginal and if there is an increased incidence of complications laparoscopy would be unjustifiable. However, the shorter time taken for laparoscopic sterilization is not the chief justification for its use and Mr. E. E. Rawlings and Mr. B. Balgobin (29 March, p. 727), by keeping such patients in hospital for three to four days, nullify the main advantage.

Several consultants in this unit consider this procedure to be suitable for day cases, though the patients always have the option to choose to be kept in overnight or to change their mind after recovering from the anaesthetic. The table shows the number of patients admitted for laparoscopic sterilization as day cases and the number who were transferred for overnight recovery during the past year, since the day area in this hos-

	Day Cases	Overnight Stay
1974		
March/April	16	10*
May	27	10
June	19	6
July	18	9†
Total	80	35
August	23	1†
September	11	0
October	5	1†
November	6	2
December	8	1
1975		
January	10	2
February	9	—
March	11	1
Total	83	8

*Laparotomy and sterilization carried out in two cases.
†Laparotomy and sterilization carried out in one case.

pital opened. The dramatic change in August reflected the increasing confidence of the sister in charge of the unit, who was not previously experienced in looking after such cases.

Since August 1974 83 patients have been operated on in this way and, excluding the two laparotomies, have required 89 bed days. The same number of patients treated by Mr. Rawlings and Mr. Balgobin would have required 283 bed days. The saving is even greater since the day area is staffed by nurses working only between 8 a.m. and 5 p.m. No complications of any consequence have occurred in this small number of cases. The calibre of anaesthesia is obviously of great importance. Most of the patients have been given follow-up appointments and there is no doubt that this approach is popular with patients, who so often have young children.—I am, etc.,

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Injudicious First-aid

SIR,—We are deeply concerned by the implications of your leading article (5 April, p. 5). We wonder if the State-registered nurse who gave external cardiac massage to a shopper who had collapsed was criticized unjustly after the pathologist found internal laceration but “no underlying disease . . . which would have caused her collapse.”

Every experienced pathologist is well aware that no definite cause of death can be found in a proportion of patients who die suddenly. If widespread coronary atheroma is present this may reasonably be presumed to be the cause of death; a very recent infarct will not be evident unless special stains are used, and many patients die of ventricular fibrillation in the absence of any fresh ischaemic event. Units providing resuscitation facilities outside hospital can testify to the frequency of primary ventricular fibrillation without apparent cause. The data from Seattle¹ are of special interest. Of 143 patients who survived out-of-hospital fibrillation, 48 had no previous history of cardiovascular disease and no fewer than 97 had no evidence of infarction on serial electrocardiograms. Moreover, we know of many conditions that can cause ventricular fibrillation, such as Wolff-Parkinson-White syndrome complicated by atrial fibrillation and the syndromes of prolonged Q-T interval, which would show no abnormality at necropsy. Thus it would be wrong to assume that the collapse of the patient mentioned in your leading article could not have been due to cardiac arrest simply because the pathologist found no evidence of underlying disease.

We believe that tissues which have become engorged and relatively stiff after circulatory arrest are more susceptible to damage by trauma. We wonder if the injuries described by the pathologist could have occurred because the patient was already dead when the massage was given, rather than the patient having died because of the injuries.

External cardiac massage is not free from risks even in experienced hands. We strongly support the notion that only skilled first-aid workers should be instructed in its use. However, the risks are small compared with the successes that can be achieved. We might

mention that 16 patients survived in our area in 1974 after resuscitation outside hospital by paramedical personnel. We very much hope that nurses, ambulancemen, and other first-aid workers are not exposing themselves to risk of censure by attempting resuscitation, for if they were to be discouraged in this way many lives might be lost unnecessarily.—We are, etc.,

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¹ Baum, R. S., Alvarez, H., and Cobb, L. A., *Circulation*, 1974, 50, 1231.

SIR,—Death due to injudicious first-aid, as described in your leading article (5 April, p. 5), must be a rare event. I am not sure that injury due to first-aid is uncommon. I have certainly seen in the past two years two patients to whom this happened. The first was a man who was on holiday in East Anglia with his wife. He is a man subject to attacks of hypoglycaemia and on this occasion he left his hotel before breakfast to post a letter. He felt faint while waiting to cross the road. A passer-by was a nurse from an intensive care unit. She assumed cardiac arrest and immediately applied heart compression, as a result of which the patient was in hospital with a fractured sternum and several fractured ribs for several weeks. Recently a patient of mine, subject to faints, had an attack in church. On this occasion artificial respiration fractured several ribs. The warnings in your article should be heeded by all.—I am, etc.,

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Hormonal Pregnancy Tests and Congenital Malformations

SIR,—Your leading article (30 November, p. 485) reviewed the evidence for and against a teratogenic effect of hormones administered to women during early pregnancy and concluded that the findings of associations between sex steroids and congenital anomalies “require confirmation or refutation from elsewhere.”

The Committee on Safety of Medicines has received through its spontaneous reporting scheme only a small number of reports alleging a possible causal association between the use of drugs during pregnancy and the subsequent delivery of a malformed child. However, in order to detect possible associations the committee has collaborated with the medical division of the Office of Population Censuses and Surveys (O.P.C.S.) in an investigation of pregnancies which resulted in the birth of a malformed child in England and Wales during 1971 and 1972. This investigation has been based on notifications to the O.P.C.S. of babies born with a malformation. General practitioners who had cared for the mothers during pregnancy were identified with the help of family practitioner committees. Details of the maternal “drug histories” were obtained from the general practitioners’ records during interviews with doctors employed by the Committee on Safety of Medicines. Each case history was paired with that of a normal

Drugs Taken during First Trimester of Pregnancy	Mothers of Babies with Malformations	Mothers of Control Babies
<i>Hormonal pregnancy test used:</i>		
Fe and/or folic acid (no other drugs)	10	1
Fe and/or folic acid and one or more other drugs	4	1
One or more other drugs (no Fe or folic acid)	6	3
No other drugs	3	3
Total (hormonal pregnancy test)	23	8
<i>Hormonal pregnancy test not used:</i>		
Fe and/or folic acid (no other drugs)	40	53
Fe and/or folic acid and one or more other drugs	39	42
One or more other drugs (no Fe or folic acid)	20	18
No drugs	27	28
Total (no hormonal pregnancy test)	126	141
All mothers	149	149

baby (without congenital malformation) born to a mother in the same practice within three months of the abnormal birth.

Currently two groups of malformations are being studied. The first consists exclusively of babies with clefts of lip or palate; the second includes babies with a wide variety of other serious malformations selected on a random basis from notifications received by the O.P.C.S. The present report relates to the second group, which consists of 149 abnormal babies (70 with malformations of the central nervous system, nine with reduction deformities of the limbs, 13 with congenital disease, 11 with Down's syndrome, and 46 with other malformations) together with 149 practice-matched controls. Detailed analysis of these cases and of the series of babies with clefts will be reported in a paper in preparation. At present we can make only a preliminary report of our findings in relation to maternal exposure to withdrawal-type hormonal pregnancy tests consisting of a short course of treatment with a mixture of a progestogen and an oestrogen. Pregnancy is usually confirmed if bleeding does not occur after the test.

The findings are shown in the table. A total of 23 mothers of abnormal babies had been exposed during the first trimester of pregnancy to drugs containing hormones compared with only eight of the control mothers. One of the 23 had also taken an oral contraceptive and tablets of norethisterone. The use of iron and folic acid and of other drugs in the first three months of pregnancy was approximately the same in the case and control groups.

This evidence supports the recommendation given in your article that "there is little justification for the continued use of withdrawal-type pregnancy tests when alternative methods are available.—We are, etc.,

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Viruses and the Heart

SIR,—Your recent leading article on viral myocarditis (15 March, p. 589) was most interesting, but I think that you overstress the difficulties of a presumptive clinical diagnosis. In my experience the chief

differential diagnosis is myocardial infarction because the presenting symptom is chest pain or faintness, often accompanied by palpitations. The pain may often be presumed to arise from diaphragmatic pericarditis or pleurisy; its severity may justify the old name "Devil's grip."

The following features could alert one to the diagnosis of viral carditis, for almost certainly the three layers of the heart will be involved to some extent as in rheumatic heart disease: severe chest pain which is not quite central and which occurs in a patient somewhat young for ischaemic heart disease; upper respiratory symptoms at the time of chest pain or shortly afterwards and a history of household contacts having similar respiratory upset; low-grade fever lasting more than 48 hours; diminished total white cell count and/or lymphocytosis; normal erythrocyte sedimentation rate. The E.C.G. in viral carditis frequently shows a P-R interval in excess of 0.20 seconds, sinus bradycardia, ST elevation suggestive of pericarditis, with (of course) upright T waves, and conduction blocks of various types at atrioventricular or bundle-branch level.

Quite often the clinical diagnosis will be clinched by the finding of herpangina or generalized muscle tenderness. One must remember that the carditis may be part of a wider illness such as Bornholm disease or, in fact, a non-viral illness such as Q fever or brucellosis. Finally, fairly acute cardiac upset may arise from the direct spread of a bronchial carcinoma into the myocardium.—I am, etc.,

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Diagnosis of "Reflux Oesophagitis"

SIR,—Dr. G. W. Stevenson (15 February, p. 395) draws attention to the use of the "acid barium swallow" in the diagnosis of reflux oesophagitis. He maintains that this test is preferable to the acid perfusion test and suggests a direct comparison between these two techniques. Such a comparative study has been made¹ and showed that acid perfusion was positive in 100% of patients with "reflux symptoms," whereas acid barium swallow yielded a positive result in only 60%. This is easily understandable when one recalls that the acid perfusion test detects oesophageal pain^{2,3}—the important symptom of reflux oesophagitis—whereas a positive response to an acid barium swallow

depends on abnormal motility of the oesophagus, which is not always associated with gastro-oesophageal reflux.⁴

The principles underlying an individual test are important. The best way to measure the acid refluxing into the oesophagus is to monitor the intra-oesophageal pH by continuous recording.⁵⁻⁷ Acid perfusion tests detect oesophageal pain; acid swallows demonstrate an oesophagus which responds to acid stimulation with a motor response, but this tells one neither that it causes symptoms nor that the patient suffers from gastro-oesophageal reflux.—We are, etc.,

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- 1 Benz, L. J., *et al.*, *Gastroenterology*, 1972, 1, 62.
- 2 Bennett, J. R., and Atkinson, M., *Lancet*, 1966, 2, 1150.
- 3 Sladen, G. E., Riddell, R. H., and Willoughby, J. M. T., *British Medical Journal*, 1975, 1, 71.
- 4 Atkinson, M., and Bennett, J. R., *American Journal of Digestive Diseases*, 1968, 13, 346.
- 5 Stanciu, C., and Bennett, J. R., *Lancet*, 1974, 1, 109.
- 6 Spencer, J., *British Journal of Surgery*, 1969, 56, 912.
- 7 Patrick, F. G., *Gut*, 1970, 11, 659.

Essential Fatty Acid Deficiency Due to Artificial Diet in Cystic Fibrosis

SIR,—We wish to draw the attention of your readers to a possible hazard of feeding infants with an elemental diet.

A baby girl was born to unrelated parents after a normal pregnancy. She developed intestinal obstruction and was referred to the University Hospital of Wales, Cardiff, on the third day of life. Radiological investigation and laparotomy confirmed a diagnosis of meconium ileus. Analysis of meconium showed an increased albumin content, and an albumin: α -antitrypsin ratio of 6.9. Subsequently a sweat chloride level of 110 mmol/l was obtained. Because of postoperative chest infection, diarrhoea, and failure to thrive she was treated with a standard artificial dietary regimen. The basic constituents of the diet are Albumaid, a beef serum hydrolysate, Caloreen, a glucose polymer, and medium-chain triglyceride oil, and the amounts used were calculated according to body weight as described by Allan *et al.*¹ Weight gain was satisfactory and she was discharged from hospital at the age of 14 weeks, to continue on the diet with added iron, vitamins, and cloxacillin. Though a daily intake of margarine or an egg yolk was also prescribed, no particular emphasis was given to this feature and it later transpired that these supplementary foods were not given at home.

She continued to thrive until she was nearly 5 months old, when she developed intermittent vomiting, anorexia, and diarrhoea. When re-admitted to hospital she was pale and dehydrated, with an extensive red, scaly rash on her trunk and legs. There was severe perianal excoriation which spread on to the buttocks, and she passed frequent watery, dark green stools. There were widespread crepitations in her chest, and x-ray showed right upper lobe and lingular consolidation. Her serum protein level was low (35 g/l) with a low albumin level (18 g/l), but the blood sugar and plasma amino-acids were normal. Plasma fatty acids on the third hospital day showed a marked deficiency of linoleic and arachidonic acids (see table).

After initial rehydration milk feeds were given, and during the first two days she rapidly improved, with cessation of the diarrhoea. The rash cleared within four days. This clinical improvement occurred even though the essential fatty acid (E.F.A.) level remained low (see table), but the diarrhoea recurred after one week on resumption of the artificial diet. Intravenous feeding, including a fat preparation (Intralipid) was therefore given for three weeks and oral feeds gradually reintroduced thereafter. She is now maintained on a normal diet with pancreatic supplements and is in excellent health at the age of 18 months.