through two separate lower-quadrant incisions 2 cm above the symphysis. A fallopian tube is grasped in its middle third and drawn to the surface by withdrawing forceps and trocar. This manoeuvre is aided by an assistant lifting the uterine cornu to the incision and occasionally made easier by deflating the abdomen. Simple tubal division and ligation with excision of a small portion for histological examination is then performed and the tube returned to the peritoneal cavity (where it is inspected) by allowing the uterus to fall away. The procedure is repeated on the opposite side after reintroducing trocar and forceps.

To date, we have performed this procedure on 20 successive patients of varying abdominal wall thickness (the obese would obviously not be suitable, however) and have experienced no operative difficulty, neither haemostasis nor tearing of the tube being a problem. Operative time is about 20 minutes and the patients have all been discharged home the following day with no postoperative complication. The procedure should have the same known minimal failure rate and potential reversibility rate as open tubal division and ligation, with the advantages of patient acceptability, low bed occupancy, and no diathermy hazards. A larger series will be reported in due course.—We are, etc.,

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- 1 *Medical Defence Union Annual Report* 1972, p. 16. London, M.D.U., 1973.
- 2 Williams, E. A., personal communication, December 1973, and *Oxford Medical School Gazette*, 1972, 24, 34.
- 3 Clarke, H., *Fertility and Sterility*, 1972, 23, 274.
- 4 Davidson, A. C., and Donald, I., *Scottish Medical Journal*, 1972, 17, 210.
- 5 Palmer, R., in *International Conference on Contraception, Sterilisation and Abortion*, Paris, 1973. In press.
- 6 Steptoe, P. C., *Laparoscopy in Gynaecology*. London, Livingstone, 1967.

Coping with Minor Casualties

SIR,—Your leading article (2 March, p. 339) draws attention to the problems which minor accident cases pose for overworked hospital casualty departments. The alternative, the treatment of minor cases by general practitioners, is, as you point out, not particularly satisfactory. An additional possibility which you do not discuss is that minor industrial accidents which are at present treated in casualty departments could be treated by an occupationally based health service.

With Dr. D. M. Richardson of the Mid Sussex Area Health Department I have recently carried out a survey of the treatment of industrial accident cases in the accident and emergency department of the Royal Sussex Hospital in Brighton. This study was carried out by kind permission of Mr. N. Laurence. We found that of a sample of 2,000 cases seen by the emergency department between 9 a.m. and 9 p.m. Monday to Friday in June 1973, 45% were non-workplace minor injuries which could have been treated elsewhere; a further 18% were minor injuries to children, mostly occurring at school; 17% were workplace injuries mostly of a minor nature; 17% were genuine emergencies requiring immediate hospital treatment; and the remain-

ing 4% were overdoses, self-injury, or psychological complaints.

Two hundred industrial accident cases were investigated in detail. We judged that 32 of these cases were severe enough to need treatment in a hospital emergency department; but the remaining 168 cases could have been treated by an occupationally based health service with minimal loss of working time. Such services—which are not part of the National Health Service—have been established on a fee-paying basis in some half-dozen centres in Britain.

We sent a postal questionnaire to the 168 persons who had suffered "minor" industrial accidents and 107 of these were returned. Five days after the accident 13% of those followed up had lost two or more working days, in addition to time lost through travel to the emergency department and waiting to be treated. A further 13% of the sample returned to the emergency department for the removal of dressings etc., while 42% consulted their G.P. for this purpose. All of these services could have been provided by an occupationally based health service such as that set up in Harlow.¹ Such a service would not of course confine itself to treatment but would also concern itself with basic preventive work and safety education.

Generalizing from our sample, 8,500 of the 50,000 cases seen each year in the emergency department of the Royal Sussex Hospital are industrial accident cases; approximately 84% (about 7,140) of these cases could have been dealt with by an industrial health service. Accidents and illness at work cost the nation approximately £2,000m a year.² If the capital costs of a nationwide voluntary health service could be publicly provided, at a cost of approximately £200m, the cost would be recovered in a year if only 11% of working days lost through industrial accident and illness could be prevented. In addition, the proportion of minor accident cases making demands on casualty departments should also be reduced.—I am, etc.,

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- 1 Taylor, Lord, *Lancet*, 1959, 1, 875 and 933.
- 2 *Off Sick*, London, Office of Health Economics, 1971.

SIR,—Most of the evidence and recommendations in the recent report from the House of Commons Expenditure Committee on accident and emergency services¹ fall into line with the thinking of members of the Casualty Surgeons Association, who actually do the work of seeing emergencies. There is, however, one important omission. The main reason for attendance at a hospital casualty department for a minor emergency as opposed to a health centre (even if it were open 24 hours a day) is that the patient can ring 999 free for an ambulance to take him to hospital and not to a health centre. How this situation can be remedied is debatable, but is nevertheless a factor which should be taken into consideration.—I am, etc.,

M. ELLIS
Hon. Life President, C.S.A.
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- 1 *Fourth Report from the Expenditure Committee, Session 1973-74, Accident and Emergency Services*. London, H.M.S.O., 1974.

Therapeutic Non-equivalence of Digoxin Tablets

SIR,—The letter from Dr. A. H. Dewar (2 February, p. 197) helps to perpetuate two misunderstandings.

When Burroughs Wellcome reverted to their original manufacturing process in 1972 it was noticed that the "new" tablets produced higher plasma digoxin levels than previously. Their warning letter emphasized the importance of reviewing the dosage of all patients receiving Lanoxin tablets: "In these patients it may be advisable to consider reducing the dose of Lanoxin by half." Since the circularization of this letter the belief has grown among doctors and pharmacists that "new" Lanoxin is twice the strength of other digoxin tablets, a belief which is as potentially dangerous. A study of the data in the article by Dr. T. R. D. Shaw and others (29 December 1973, p. 763) quoted by Dr. Dewar shows that there is no significant difference between the plasma levels obtained with "new" Lanoxin tablets and Nativelle digoxin tablets. The bioavailability of these two products is the same and the consequence of doubling the dosage for a patient changing from "new" Lanoxin to Nativelle digoxin would be just as serious for the patient receiving a product of lower bioavailability.

The other misunderstanding is that "effectiveness," "bioavailability," and "dissolution rate" mean the same thing. Our research has shown quite clearly that a tablet can be produced which has an excellent dissolution rate but a poor therapeutic effect, or, conversely, a tablet with an excellent therapeutic effect (mean plasma levels of 1.3 ng/ml) but with a relatively poor result from a dissolution rate test. The standard dissolution rate test favours certain tablets with slower disintegration characteristics. I have personally observed tablets with the fastest disintegration time (and giving optimal plasma levels) burst into small particles in the test, the particles falling through the rotating perforated basket into a non-agitated part of the apparatus where they remained undissolved when the test samples were taken. We do not believe that the current dissolution rate test indicates the bioavailability of a product without correlation with plasma level studies.—I am, etc.,

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Smoking in Pregnancy

SIR,—Many B.M.A. members will have received a letter from the Health Education Council inviting them to co-operate in our campaign to deter pregnant women from smoking. Among the enclosures were a scientific memorandum blessed by the senior bodies in your profession, including the B.M.A. Board of Science, and a leaflet telling its readers how to give up smoking and illustrated with a photograph of a naked pregnant woman.

The leaflet seems to be doing its job. We received orders in the first fortnight of the campaign for half the 500,000 copies that would normally last 18 months. A few doctors, however, have complained that the naked woman's photograph is in poor taste,

has upset the pregnant women in their charge, might do harm if it fell into the hands of small boys, and so on. One complainant includes among those whom he criticizes the B.M.A. Board of Science.

Two points arise. Firstly, the Board had nothing to do with the leaflet. We would no more have expected to receive advice from the Board about an instrument of publicity than we would expect to give advice about, for instance, the design of midwifery forceps.

Secondly, very few of the doctors who complained are likely to be smokers and even fewer, I feel sure, are pregnant. With all respect to them, therefore, what they think about our naked woman matters very little. What does matter is whether she does her job. Most pregnant smokers, our research tells us, are young women in the lower socioeconomic groups. They are exposed (as, indeed, are the rest of us) to blasts of strident advertising, among the most assiduous practitioners of which are the cigarette makers. The only way to get at these young women is to use material of a kind no less arresting than the cigarette advertising. The best of several alternatives tested is the one we have chosen. A lot of research established quite clearly that the naked woman not only would not give offence; she would also bring home the simple medical points that our leaflet makes far more effectively than would an anatomical diagram. All the evidence so far is that the research is correct.—I am, etc.,

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Health Educational Council

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Old People's Nutrition

SIR,—Your leading article (9 February, p. 212) refers to the value of meals-on-wheels services to the elderly, but there is little evidence available of the nutritive value of these meals.

In our survey of 200 meals delivered in Portsmouth^{1,3} we found the following energy and nutritive intakes: energy, mean 760 kcal, range 190–1,170 kcal; protein, mean 28 g, range 8–58 g; potassium, mean 28 mEq (1.1 g), range 10.3–48.5 mEq (0.4–1.9 g); vitamin C (by analysis), mean 9 mg, range 0–37 mg. The enormous range in nutrients consumed means that despite satisfactory average values, except for vitamin C, some individuals were eating inadequate meals. If such a wide variation occurs in 200 meals in one city, supplied from one kitchen, there is clearly a need for more widespread investigation.

One of the causes of inadequate meals is that there is no central source of advice on menu planning, portion control, and nutrient content of such meals. Apart from the delivered meals, the weighed weekly food intake of 100 persons in Portsmouth showed a relatively low intake of energy, potassium, and vitamin C but an adequate protein intake.

With regard to the education of people visiting the elderly, and indeed the elderly themselves, this unit is attempting to help in this direction by a conference next September advising on large-scale catering to residential homes, luncheon clubs, and the

meals-on-wheels service. As well as this we are producing sets of simple cartoon slides teaching the rudiments of nutrition and have published a paperback called *Easy Cooking for One or Two*. There is a demonstrated demand for such advice.—We are, etc.,

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- ¹ Davies, L., Hastrop, K., and Bender, A. E., *Modern Geriatrics*, 1973, 3, 385.
- ² Davies, L., Hastrop, K., and Bender, A. E., *Modern Geriatrics*, 1973, 3, 390.
- ³ Davies, L., Hastrop, K., and Bender, A. E., *Modern Geriatrics*, 1973, 3, 482.

Misdiagnosis in Still's Disease

SIR,—Your leading article (9 March, p. 406) points out that juvenile rheumatoid arthritis tends to be diagnosed too readily on too little evidence. The review of misdiagnosed cases from the John Hopkins Hospital to which you refer included patients with lymphosarcoma and leukaemia.¹

Neuroblastoma, which is one of the commonest malignant tumours of childhood, may also present with bone and joint pains which can be mistaken for juvenile rheumatoid arthritis. We have had several patients with advanced neuroblastoma admitted to this hospital in whom an initial diagnosis of juvenile rheumatoid arthritis had been made. Recently we admitted a girl of 8 years who had been treated for three months previously for increasing bone and joint pains and a limp. She had been given prednisone on the presumptive diagnosis of juvenile rheumatoid arthritis. During this period her urinary excretion of vanilmandelic acid had been measured and on each occasion it had been grossly abnormal. However, the significance of this finding had not been appreciated and no further relevant investigations were done at that time. On admission a full skeletal survey revealed multiple bone lesions due to metastatic deposits, and bone marrow biopsy showed infiltration with malignant cells, thus confirming the initial diagnosis of neuroblastoma.

The vanilmandelic acid estimation is a useful screening test since it will be positive in up to 80% of children with neuroblastoma, whether or not they have metastatic disease. Any child with unexplained bone pain requires a full skeletal survey to reveal all lesions, since not every metastatic deposit produces symptoms. A bone marrow biopsy may also confirm the diagnosis of leukaemia or metastatic malignant disease, (neuroblastoma, lymphosarcoma, or other sarcomas), any of which may present with bone or joint pain, fever, anaemia, raised E.S.R., weight loss, etc. which can be mistaken for juvenile rheumatoid arthritis. The bone marrow biopsy may well be positive in the absence of any identifiable bone lesions on x-ray.—I am, etc.,

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- ¹ Sills, E. M., *John Hopkins Medical Journal*, 1973, 133, 88.

Mental or Criminal?

SIR,—Your leading article (24 November, p. 438) dealing with the annual report on the work of the Prison Department refers to "the assumption by the prison medical service of a positive therapeutic rather than custodial role in the handling of the mentally abnormal offender." An example that it is indeed possible to treat people while in prison can be seen in experiences with a recent experimental therapeutic community set up at Wormwood Scrubs Prison comprising alcoholics, drug addicts, and compulsive gamblers. Of course, all such addicts are essentially sick people, and not primarily "criminals," who do not really belong in prison. All possible attempts should be made to find suitable alternatives to prison and non-custodial treatment, but nevertheless there will always be addicts who end up in prison for offences directly or indirectly connected with their addiction. Rather than wasting this period, one should try to make use of the enforced abstinence and lack of access to the dependence-producing agent to initiate—if possible—the long-term rehabilitation process and to induce the motivation which is usually lacking initially.

Having tried for about 10 years to "treat" such people in prison I felt frustrated because the little that could be attempted in individual or group therapy sessions once or twice weekly seemed to become lost during the 24-hour day in a custodial, non-therapeutic atmosphere. This environment often engendered in these people—often of the "immature and inadequate" personality make-up referred to in your article—reactions of tension, depression, and frustration, with continual demand for tranquilizers and similar drugs. Our group sessions had, however, indicated that it was possible for compulsive drinkers, drug takers, gamblers, smokers, etc. to "identify" with each other, even while in prison, and it certainly seemed worth while to explore the possibility of the formation of a therapeutic community in prison.^{1,2} The opportunity to set up an "addiction unit" came a year ago. Owing to administrative problems this unit formed part of a larger unit comprising also other types of psychiatric patient-offenders, the various types being under the care of three different psychiatrists.

During the period between 1 December 1972 and 4 September 1973 the highest number of all patients at any one time was 27 and of the "addicts" among them 20. The majority of "addicts" were youngish poly-drug abusers; their total number was 25, varying in age from 21 to 30 years. There were seven alcoholics (aged 21–47 years) and two gamblers. The staff comprised seven hospital officers and two disciplinary officers. All the hospital officers had volunteered for the work in the unit and had previously spent a brief special training period in Grendon Prison and in the St. Bernard's Hospital Addiction Unit. The treatment programme centred on daily group therapy sessions, each officer looking after his own group of patients. The atmosphere was clearly non-custodial and therapeutic, with emphasis on the development of initiative and responsibility among the patients, who chose their own group leader and published their own magazine. There was an ongoing dialogue between