enlightened. Every new investigation carries an iatrogenic hazard, as illustrated in the early days of the E.C.G. when many were made cardiac neurotics because of findings now regarded as normal. This is a risk with endoscopy. Many patients suffer from nervous dyspepsia, helpful clinical clues being the presence of food intolerance, aerophagy, and obvious nervous symptoms elsewhere together with the absence of a positive pointing test and nocturnal pain. These, I think, are best served by a barium meal x-ray examination, complete reassurance with discussion of any problems, and a follow-up visit in one month with a view to discharge. Removal of gall stones results in many continuing with their symptoms, unless relieved by the placebo value of the operation. Referral for endoscopy puts a doubt in their minds. If, however, this is found to be normal they must be told the result and again reassured. This is not easy in practice. Outpatients, though told before being driven home, may not remember because of amnesia from diazepam. They may fail to contact their general practitioner. We now write directly to the patient and send a copy of the letter to his doctor. Worst of all is the doubt cast by reporting mucosal abnormalities such as gastritis. Neither the general practitioner nor one's colleagues in other specialties may know its significance. Gastritis is nearly always symptomless and common in normal people who never have dyspepsia, and patients with pernicious anaemia have gastric atrophy and do not know it. Endoscopy is now being done by junior staff whose clinical acumen may lag behind their technical competence, and they may be unaware of the work done by the previous generation of endoscopists.

It is always exciting and more rewarding to "find something." Redness of the gastric and duodenal mucosa may indicate circulatory and not inflammatory changes. Histological reports must be received with scepticism as, for example, the mucosa of the duodenum may contain large numbers of round cells in health and assessment of them is highly subjective. Yet this is the main criterion for diagnosing duodenitis. I was very impressed when seeing Tom, the subject with the gastric fistula. His gastric mucosa would become oedematous and red when he was made angry by his investigators, Wolf and Wolff.¹ Some of our patients, in spite of diazepam, feel a trifle unhappy when the duodenoscope is in position. Perhaps the mucosal changes may then be due to an "angry stomach"—or duodenum.

Finally, the endoscopist is often called in merely as a technician and not asked to give a clinical opinion. The report of the endoscopy must then be clear and definite. This is no problem when an ulcer or carcinoma is found but it is easy to be non-committal when describing mucosal abnormalities. These, if thought incidental, must be clearly reported as being so. Otherwise our nervous dyspeptics will spend their lives as gastric cripples forsaking the pleasures of the table, being convinced of the organic nature of their symptoms because of the label of gastritis.—I am, etc.,

CLIFFORD HAWKINS

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¹ Wolf, S., and Wolff, H. G., *Human Gastric Function*. London, Oxford University Press, 1947.

Samples for Hepatitis B Antigen Testing

SIR,—The risks of hepatitis to laboratory personnel handling infected blood and blood products are well recognized.^{1,2} Despite a local circular and the publication of the Public Health Laboratory Service monograph on laboratory hazards³ we were disappointed to find that of 101 specimens received in the past fortnight, no fewer than 37 were sent in unsuitable containers. As shown in the table, the containers used fall into two groups.

Group 1, hazardous containers:

Glass flat-bottomed thin-walled tube with screw cap ...	17
Plastic thin-walled tube with push-on cap ...	9
	26

Group 2, unsatisfactory containers

Plastic universal containers with plastic cap ...	10
Glass universal container with plastic cap ...	1
	11

Containers in the first group carry the greater hazard and their use probably results from a failure of the ward staff to appreciate the dangers of blood specimens. Spillage of blood from a jaundiced patient on the ward can create considerable alarm among the staff; they could helpfully refrain from putting laboratory staff at similar or greater risk by sending blood in containers with fragile walls and/or snap-on lids.⁴

Containers in the second group are unsatisfactory in that the cap may become loose or the clot may fail to retract adequately (it has then to be separated by centrifugation, an additionally hazardous procedure). The use of these probably results from bulk purchasing by hospital supply officers. With the rising cost and scarcity of oil-based products, of which polystyrene is one, we are surprised at how many hospitals still use them. We urge a strong campaign on the part of ward staffs to ensure that undamaged, thick-walled, glass containers with metal screw caps and rubber liners (standard 1-oz universal and 4-oz bijou bottles or their metric equivalents) are available for sending potentially or actually infectious specimens to the laboratory. Support for such a campaign may be found on p. 11 of the P.H.L.S. monograph.—We are, etc.,

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¹ Byrne, E. B., *Journal of the American Medical Association*, 1966, 195, 362.

² Watson, et al., *Lancet*, 1973, 1, 985.

³ Collins, C. H., Hartley, E. G., and Pilsworth, R., *The Prevention of Laboratory Acquired Infection*, P.H.L.S. Monograph Series No. 6 London, H.M.S.O., 1974.

⁴ Working Party on Health Hazards in Laboratories, *Safety in Pathology Laboratories*, p. 57. London, Department of Health and Social Security, 1972.

Sex Difference in Cardiac Actions in Prolactin

SIR,—Earlier this year (6 April, p. 27) we demonstrated that prolactin at a concentration of 50 mg/ml had chronotropic and inotropic actions and could produce dysrhythmias in perfused male rat hearts. This concentration of prolactin is in the range

found in human plasma during exercise and surgery and after myocardial infarction.^{1,3}

During the past year we have been carrying out similar experiments on perfused rabbit hearts. The results will be reported in full elsewhere but are of such potential importance that we should like to record our conclusions in a general medical journal. Our findings are as follows: (1) In male rabbit hearts, as in rats, 50 ng/ml prolactin can have inotropic and chronotropic effects. These effects show a clear seasonal variation, being much more marked during the autumn and winter than during the late spring and summer. (2) Both the chronotropic and inotropic effects can be abolished by propranolol. (3) Prolactin has no effects at any season in hearts taken from female rabbits or from prepubertal animals of either sex.

It is unwise to extrapolate from animal experiments to humans but in view of sexual and seasonal differences in the occurrence of myocardial infarction these findings may be worthy of further exploration.—We are, etc.,

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¹ Frantz, A. G., Kleinberg, D. L., and Noel, G. L., *Recent Progress in Hormone Research*, 1972, 28, 527.

² Friesen, H., et al., in *Lactogenic Hormones*, ed. G. E. W. Wolstenholme and J. Knight. London, Churchill Livingstone, 1972.

³ Horrobin, D. F., et al., *Lancet*, 1973, 2, 1261.

Primary Medical Care

SIR,—“The fundamental differences between primary medical care and traditional general practice are its use of a team of health professionals rather than the solitary figure of the family doctor. . . .” This fatuous observation in the opening paragraph of your leading article (19 October, p. 126) will have given offence to many general practitioners. General practice is primary care and a good deal more besides.

Do you give the impression of the solitary family doctor bumbling along alone with your tongue in your cheek? It is known full well that a major part of so-called primary care is undertaken by general practitioners working together in groups from purpose-built premises with attached nurses and health visitors, aided by pathology and x-ray facilities and with consultant aid when necessary. These are very competent people with a depth of experience providing a very high standard of care in the fullest meaning of the word. They do not regard themselves as amateurs and their cost effectiveness is without parallel. Who then are these teams of health professionals?

I cannot believe that those of us engaged in family practice would accept either of the assumptions you quote from Professor A. D. Roy's committee's report¹ that there is a continuing trend for general practitioners to form large groups and to work from health centres with the emphasis likely to move towards preventive programmes . . . and all that. Our experience of the reorganization of the welfare services on a team basis has not impressed us with any improvement in efficiency.

Care and caring are by very nature personal. The entire concept of general practice, family medicine, primary care, call it what you will, in Britain is the continuing care of the patient as a whole. Once the patient is fragmented among a team of so-called experts personal responsibility and care lose their meaning.

The recent publication by the Office of Health Economics² must have either amused or exasperated general practitioners by its "academic" analysis of primary medical care with little reference to real life. Pray come down from the clouds and look at life as it is, not as it is assumed to be by whatever board or committee, however eminent the chairman be in his own field.—I am, etc.,

A. J. ALLEN

Solihull, Warwicks

¹ B.M.A. Board of Science and Education, *Primary Health Care Teams*. London, B.M.A., 1974.

² Office of Health Economics, *The Work of Primary Medical Care*. London, O.H.E., 1974.

E.B. Virus and Treatment of Lymphomas

SIR,—Dr. R. Salm (25 May, p. 435) concludes that E.B. virus, as a passenger parasite of lymphomatous cells in Burkitt's tumours, is responsible for the sensitivity of the lymphoma cells to cytotoxic drugs. He then suggests the inoculation with E.B. virus of patients in temperate zones before chemotherapy to try to induce drug sensitivity. As we are conducting a comprehensive prospective seroepidemiological study on the relationship between E.B. virus and Burkitt's lymphoma we are prompted to comment on Dr. Salm's views.

To assume that E.B. virus is a passenger parasite in Burkitt's lymphoma in Africa is as presumptuous as it is to take for granted that this virus is the cause of the tumour. The evidence for an association between E.B. virus and Burkitt's lymphoma is both serological and virological. The serological response of African Burkitt lymphoma patients to E.B. virus antigens is not always found in lymphoma patients from temperate areas,¹ but when pathological evaluation and age are taken into account the serological picture is similar in Burkitt-type lymphomas in young children.² One cannot state that E.B. virus reactions do not correlate with the course of the disease, as studies have shown the opposite with regard to membrane-bound antigen reactions³ and to complement-fixing reaction against the soluble antigen.⁴ The second set of supporting data refers to the presence of E.B. virus fingerprints in the tumour cells. E.B. virus genomes and E.B. virus specific nuclear antigen (E.B.-N.A.) are found in African Burkitt lymphoma tumour cells^{5,6} and search in American Burkitt-type lymphomas is in progress. Arguments for and against the aetiological role of E.B. virus in Burkitt's lymphoma have been reviewed by Klein.⁷ Dr. Salm seems to have read only part of the literature on the subject, as 20 out of his 28 references are to one journal.

The E.B. virus has oncogenic properties, contrary to Dr. Salm's statement. E.B. virus infection in vitro of human and of some primates' lymphocytes results in the establishment of lymphoblastoid lines having characteristics of malignant transformed cells (infinite life, ability to heterograph, and tumour production).⁸⁻¹¹ E.B. virus infection in vivo of some primate species such as marmosets results in the development of lymphomas.^{11,12} On the other hand, animal herpesviruses are oncogenic in frogs, fowl, and primates, and to dismiss the potential oncogenic activity of E.B. virus could lead to dramatic consequences.

The International Agency for Research on Cancer has based its study of the aetiological role of E.B. virus in Burkitt's lymphoma on the role of E.B. virus primary infection as a cause of infectious mononucleosis.¹³ A prospective seroepidemiological study of 40,000 children aged 2-7 was begun 30 months ago in the West Nile district of Uganda.¹⁴ Their sera are being kept in liquid nitrogen until Burkitt lymphoma cases arise among

them, which is already happening. The results will be analysed in the context of seroepidemiological data being obtained simultaneously in the general population of the West Nile district of Uganda and in other populations in Hong Kong, Singapore, and Europe, where Burkitt's lymphoma is less common.¹⁵ Dr. Salm dismisses the hypothesis that malaria may be a causative factor in Burkitt's lymphoma because "typical cases of Burkitt tumour have been observed outside the endemic regions of Africa." Cofactors contributing to lymphoma causation differ from one area to another. The most striking feature about Burkitt's lymphoma in non-tropical countries is its great rarity compared with its incidence in malarial countries. Thus tropical Burkitt's lymphoma is possibly different from what is called Burkitt's lymphoma in temperate zones, and the high incidence in Africa may well be due to the impact of malaria on the immunological system. The International Agency for Research on Cancer's recent finding of a seasonal variation in the onset of Burkitt's lymphoma in the West Nile¹⁶ also suggests hyperendemic malaria as a causative factor. Impairment of cell-mediated immunity and of the reticuloendothelial system may lead to massive E.B. virus infection, reinfection, or internal reinduction. Since E.B. virus is potentially oncogenic perhaps massive infection or reinfection of a depressed organism may lead to clonal transformation and further development of a tumour.

Until the oncogenic potential of E.B. virus has been more thoroughly explored it would be unwise to inoculate patients with it. In fact, such inoculation occurs when seronegative patients are transfused with E.B.-virus-infected blood, and we believe that soon blood donors will have to be screened for serological evidence of infection.—We are, etc.,

G. DE-THÉ

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- 1 Hirshaut, Y., Cohen, M., and Stevens, D., *Lancet*, 1973, 2, 114.
- 2 Levine, P. H., O'Connor, G. T., and Berard, C. W., *Cancer*, 1972, 30, 610.
- 3 Klein, G., et al., *International Journal of Cancer*, 1970, 5, 185.
- 4 Sohier, R., and de-Thé, G., *International Journal of Cancer*, 1972, 9, 524.
- 5 zur Hausen, H., et al., *Nature*, 1970, 228, 1056.
- 6 Reedman, B. M., et al., *International Journal of Cancer*, 1974, 13, 755.
- 7 Klein, G., in *The Herpesviruses*, ed. Kaplan A., p. 448. New York, Academic Press, 1973.
- 8 Miller, G., and Lipman, M., *Proceedings of the National Academy of Sciences of the U.S.A.*, 1973, 70, 190.
- 9 Pattengale, P. M., Smith, R. W., and Gerber, P., *Lancet*, 1973, 2, 93.
- 10 Pope, J. H., Scott, W., and Moss, D. J., *Nature New Biology*, 1973, 246, 140.
- 11 Miller, G., et al., *Proceedings of the National Academy of Sciences of the U.S.A.*, 1972, 69, 383.
- 12 Epstein, M. A., and Achong, B. G., *Annual Review of Microbiology*, 1973, 27, 413.
- 13 Henle, W., and Henle, G., in *Oncogenesis and Herpesviruses*, ed. P. M. Biggs, G. de-Thé, and L. N. Payne, p. 269. Lyons, International Agency for Research on Cancer, 1972.
- 14 de-Thé, G., and Geser, A., *Bibliotheca Haematologica*, 1973, No. 39, 448.
- 15 de-Thé, G. B., Second International Symposium on Oncogenesis and Herpesviruses, Nuremberg, 1974. In press.
- 16 Williams, E. H., Day, N. E., and Geser, A. G., *Lancet*, 1974, 2, 19.

Distribution and Supervision of Oral Contraceptives

SIR,—We would agree with Dr. M. V. Smith and others (19 October, p. 161) "that it would be a responsible and constructive step forward in medical practice to widen the range of those empowered to dispense oral contraceptives." But we would take issue with their suggestion that persons empowered to "dispense" oral contraceptives

should include nurses, midwives, and health visitors who have had some additional training in contraceptive practice. It seems to be the consensus of opinion that in most cases the decision to embark on oral contraceptive therapy is one which can be made by any responsible woman on her own account, and the fact that the Royal College of General Practitioners suggested¹ that "the estimated risk at the present time of using the pill is one that a properly informed woman would be happy to take" bears out this view.

We would suggest that the person best qualified to undertake the supply of oral contraceptives for nearly all women wanting them should be the pharmacist, who has the necessary academic qualification and understanding of the medical consequences together with the degree of availability which is so well put in your correspondents' letter. We recognize that by preventing unplanned pregnancies and reducing the need for abortions a considerable contribution would be made toward further reducing maternal mortality, but unless the service is to be easily accessible to those at risk little will be gained by increasing the number of those able to prescribe the pill. It would seem highly desirable that any patient should consult her general practitioner before taking oral contraceptives as only he has access to the full medical history. But, with this safeguard, there seems to be no contraindication to registered pharmacists prescribing oral contraceptives, following guidelines drawn up in the light of clinical experience.—We are, etc.,

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¹ Oral Contraception Study of the Royal College of General Practitioners, *Oral Contraceptives and Health*. London, Pitman Medical, 1974.

SIR,—Most of the fears expressed by Dr. N. C. Chisholm (2 November, p. 287) follow from his statements in the third and fourth sentences: "Today delegation in family planning is no longer at the discretion of the individual doctor. It is a matter of clinic procedure." At all discussions on delegation in the Clinic Doctors' National Council of the Family Planning Association (of which I have been a member for five years) it has been emphasized (and minuted) over and over and over again that delegation must be only at the discretion of the individual doctor.

I must therefore ask Dr. Chisholm to provide a list of all clinics where delegation is "part of clinic procedure" and not at the discretion of the clinic doctor.—I am, etc.,

MARGARET C. WATKINSON

Chairman,
Clinic Doctors' National Council, F.P.A.

Blackburn, Lancs

Erythema Infectiosum

SIR,—In 1952 I came across my first epidemic of erythema infectiosum. We had some seven cases in the practice, and Dr. George Gibson, who was the county medical officer of health, came over and saw four of the patients. He confirmed the diagnosis of