diagnosis, or both. The biochemist then decides what tests, *if any*, will help. Moreover, no report would leave the department without an expert interpretation of the result. To implement such a proposal would require a drastic change in the philosophy of both clinicians and biochemists; but it is, of course, the only logical solution.

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Air embolism and intravenous catheters

SIR,—We read with interest the letter from Dr D P D Colqhoun (2 June, p 1489) reporting a further three cases of air embolism occurring via central venous catheters when the hubs became disconnected from the administration sets. We suspect that many similar incidents have occurred and have not been recognised.

When total parenteral nutrition is being administered in our general surgical ward, a Baxter-Trevenol "W" or "Y" administration set with the new Luer lock mechanism is used in conjunction with the central venous catheter. An incident has just been reported to the DHSS in which a patient receiving parenteral nutrition via a Vygon Surcath long-line and a "W" administration set almost suffered an air embolism. The thread of the Luer lock failed to engage the hub of the catheter and the two components slipped apart. Fortunately, the fault was recognised and corrected. We feel that this connection should be carefully inspected after assembly and at regular intervals during the period of infusion.

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Captain Cook and scurvy

SIR,—May I suggest that Dr C C Booth is in error (2 June, p 1470) in suggesting that Captain Cook's success in making his historic scurvy-free voyages was due to Lind's work?

Cook's work was independent, and due to his using other antiscorbutics, such as malt and cabbage, and "scurvy grass" and wild celery when obtainable, together with his insisting on other measures such as strict cleanliness and adequate fresh water. It has even been suggested that his work delayed the introduction of lemon juice into the Navy. Another of the great accomplishments of this non-medical man was his distinguishing between yaws and syphilis.

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Vaccination and pregnancy

SIR,—We feel that the answer to the question on the vaccination of pregnant or nursing mothers in your "Any Questions?" column (5 May, p 1194) could be misinterpreted. The statement that "vaccines given to the mother in pregnancy will, of course, benefit the infant by the transplacental route whether or not he

is breast fed" fails to emphasise the dangers of giving live vaccines during pregnancy and the possibility of infection to the unborn infant.

In general, live vaccines are contraindicated in pregnancy unless the risk of getting the disease outweighs the risk of vaccination. Fetal vaccinia, although rare, is well documented; if the mother must be vaccinated this should be done under antivaccinial globulin cover. The risks of using live polio and yellow fever vaccine appear to be very small.¹

A pregnant woman intending to travel to a developing country should have the killed polio vaccine unless she has to travel immediately, when the live oral strain should be used. Similarly, if travelling to an endemic yellow fever area vaccination is advised, although it should be delayed if possible until beyond the first trimester. Rubella vaccination remains a contraindication in pregnancy; the seronegative mother should be vaccinated on the second to fourth day after delivery. At this stage in the puerperium the risk of pregnancy in the ensuing six weeks is extremely low. Nevertheless, contraception should be advised for at least three months.

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¹ Levine, M M, Edsall, G, and Bruce-Chwatt, L J, *Lancet*, 1974, 2, 34.

An alternative to colostomy

SIR,—The introduction of circular stapling devices for intestinal anastomosis (the Russian SPTU gun and the American EEA gun) have enabled colorectal surgeons to perform safely very low rectal anastomoses in patients with carcinoma of the middle third of the rectum and at the same time preserve good anal sphincter control.¹ This obviates the need for abdominoperineal resection with a permanent colostomy in many of these patients. In our experience using the EEA gun the early results of this method of treating rectal cancer are excellent and the avoidance of a permanent colostomy saves the patient from many of the problems that we have previously commented on.² However, we are concerned about the economics of using the EEA gun and in particular the reluctance of some health authorities to sanction the purchase of these instruments because they are "too expensive" and "not a good buy."

The basic purchase price of the EEA instrument is £595 plus VAT and the cost of a set of staples is £47 per patient. The operating time to perform a sphincter-saving resection using this technique is about one and a half hours, the radiologically demonstrated leak rate is negligible, and the patients rapidly recover full continence after operation. The duration of postoperative stay in hospital is considerably less than that after an abdominoperineal resection.

By contrast, the patient having a conventional synchronous combined abdominoperineal resection has a larger and more blood-losing operation, a longer postoperative stay in hospital, and a permanent colostomy. We conservatively estimate the price of colostomy care over five years as between £597.50 and £2135. The low and high prices include home nursing costs and the cheapest or the more expensive conventional stoma

appliances, but exclude general practitioner, local authority disposal, and extra laundry costs. We have not attempted to quantify the social cost of the colostomy to the elderly patient, hospital and convalescent stay after abdominoperineal resection, or the many hidden costs of long-term care of stoma patients.

We therefore conclude that despite its high purchase price the EEA gun is a good economic alternative to a permanent colostomy.

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¹ Goligher, J C, *Annals of the Royal College of Surgeons of England*, 1979, 61, 169.

² Devlin, H B, Plant, J A, and Griffin, M, *British Medical Journal*, 1971, 3, 413.

Cyclophosphamide in chronic active hepatitis

SIR,—Dr I T Gilmore and others, in reporting the results of a clinical trial of cyclophosphamide for the treatment of active chronic hepatitis (28 April, p 1120), conclude that because of persistent azoospermia "the benefits [of cyclophosphamide] would have to be striking to justify its use." While we agree with their conclusion, we believe there are more important reasons why this is so.

We are surprised that no mention was made of the association between alkylating agents (including cyclophosphamide) and cancer in humans. There are at least 64 case reports of cancer (mostly leukaemias, lymphomas, and bladder cancers) in patients treated with cyclophosphamide for a variety of malignant and non-malignant diseases.^{1,2} In addition, cyclophosphamide causes cancer in mice and rats when administered in doses similar to those used in clinical practice.¹

Cyclophosphamide is often considered together with other alkylating drugs in reports of adverse effects, since individuals are frequently treated with more than one of them. Six of these drugs, which have been evaluated in the monographs of the International Agency for Research on Cancer,³ have data on carcinogenicity from case reports, epidemiological studies, or both. Recently a group of experts in cancer research concluded that, of these six, two are causally associated with cancer in humans (chlorambucil and melphalan), and three (chlorambucil, cyclophosphamide, and thiopeta) are probably carcinogenic to humans but sufficient evidence to establish a causal relationship is lacking. The data for the remaining drug (triaziquone) are derived from four case reports and are inadequate to allow any conclusions regarding carcinogenicity.⁴

Unfortunately, most of the evidence on the carcinogenicity of these compounds comes from case reports, which do not allow incidence rates to be calculated. However, the few available epidemiological studies⁵⁻⁸ suggest that over a period of 10 years from 5% to 15% of patients given alkylating agents will develop cancer. This is substantially in excess of what would be expected in the absence of these drugs.

Investigators planning clinical trials using these drugs, particularly in adjuvant chemotherapy for early stages of cancer or in the immunosuppressive treatment of non-malignant disease, should balance this sizable

carcinogenic risk (along with other adverse outcomes) against the potential benefits.

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¹ International Agency for Research on Cancer, *IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man*, vol 9, p 135. IARC, Lyon, 1975.

² Puri, H C, and Campbell, R A, *Lancet*, 1977, **2**, 1306.

³ Tomatis, L, et al, *Cancer Research*, 1978, **38**, 877.

⁴ IARC Working Group, *Chemicals and Industrial Processes Associated with Cancer in Humans*, submitted for publication.

⁵ Thiede, T, and Christiansen, B L, *Acta Medica Scandinavica*, 1969, **85**, 133.

⁶ Reimer, R, et al, *New England Journal of Medicine*, 1977, **297**, 177.

⁷ Einhorn, N, *Cancer*, 1978, **41**, 444.

⁸ Law, I P, and Blom, J, *Oncology*, 1977, **34**, 20.

Management and severity of tetanus

SIR,—The question raised by the article of Dr R S Edmondson and Mr M W Flowers (26 May, p 1401) is whether intensive care in the management of tetanus is causing unnecessary deaths. The mortality (10%) in their series of 100 must be compared with a mortality of 7% in the much larger series reported by Sanders¹ in a developing country where artificial ventilation and intensive care were not available.

My experience over two years in North India bears out these survival figures. Following instillation of antitetanus serum via lumbar puncture, chlorpromazine and diazepam were titrated against muscular spasms, respiratory complications were minimised by nursing in the head-down position, and locally trained nurses were specifically taught to watch for respiratory or cardiac difficulties. Feeding was usually possible by nasogastric tube at one week, once the worst of the spasms had passed.

Prognosis in tetanus should be related not only to severity of symptoms at presentation but to the site of entry of the tetanus bacilli. Women who had become infected during childbirth or during a normal menstrual period would be expected to have more severe symptoms, a longer convalescence, and also a higher mortality. This may be accounted for by the large area of the uterine wall available for infection.

Neonatal tetanus is virtually unknown in Great Britain. Although having many features of the adult disease, conventional treatment has remained unsuccessful and few centres can improve on a mortality of 80%.

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¹ Sanders, R K, et al, *Lancet*, 1977, **1**, 974.

Medical reports and confidentiality

SIR,—The letter of Drs G B May and W P Garson (26 May, p 1427) raises issues which are certainly important, and which currently are much in the minds of doctors concerned about ethics. I would like to add one or two points for consideration—not necessarily because I believe Drs May and Garson to be wrong in their argument: it is just that, as

in most complex situations, every factor does not point towards the same conclusion.

I must first declare an interest, as a salaried adviser to an insurance company. My employer is concerned with health insurance, and Drs May and Garson write about the Life Offices; but the principles involved are, I think, the same. What I say now is my view, and not that of BUPA or of any health insurer.

It will help, at the outset, to distinguish between medical reports and the medical records on which they may be based. The latter, we would all agree, should—subject to the patient's consent—go only from doctor to doctor, although the law may compel wider scrutiny. But I do not think that the "medical attendant's report" is in the same category of confidentiality, even though both ethics and common sense suggest that it too go from doctor to doctor for interpretation and confidential storage.

As secretary, years ago, to the tripartite (Bar Council/Law Society/BMA) Committee on Medical Evidence I learned that the "privilege" attaching to medical documents and reports is vested wholly in the patient (or responsible relative), and not in the doctor or doctors who compile them. If the patient agrees to disclosure or reporting, the doctor—though he may feel obliged sometimes to advise against this—has no right of veto to refuse to implement his patient's decision. Drs May and Garson in that context raise two relevant issues: the patient may not fully appreciate what he is doing, and in any event is under pressure to agree. On the first of these, the medical attendant's duty is clear: he explains as best he can what are the implications, but the patient decides. The second point can be the subject of pejorative treatment, and by reference to "blackmail" Drs May and Garson—by their use of quotation marks—acknowledge this fact.

A contract of insurance is, in law, a matter of the "utmost good faith," and any proved departure from this—by the proposer—will usually invalidate the contract. If one seeks to insure one's health, or one's life, it is self-evident that one must make a true declaration of one's state of health. Sometimes this alone will suffice, but not always: medical verification (or explanation of something unclear in the declaration) may be properly required by the insurer. This is made necessary because, in insuring such things as goods and chattels or a holiday, the insurer has himself the knowledge to make full relevant disclosure, but he often has not this knowledge of his own medical history. It is notorious that we, as doctors, are not always fully communicative—either because we fail to get our meaning across or because we believe that the patient's best interest is served by a less than full disclosure to him of the nature of either investigations or findings.

Drs May and Garson suggest that the independent medical examination and report would serve as well as a report. Sometimes it does—but not always (quite apart from the added inconvenience and expense to the patient, who in the end pays, directly or indirectly). In a similar context, the interview of an applicant for a position of trust by an experienced personnel officer may suffice, but can never wholly do away with recourse to confidential reports from character referees. If one wishes to embark on a major financial transaction—or even to obtain a line of credit one usually is asked for, and agrees to, references from banker and employer. Is it

different in principle if the financial transaction is one in which the assessment of health or "life" is a major factor?

True, life assurance and health insurance can be, and sometimes are, provided without initial inquiries, but their total elimination would inevitably put the financial burden of "carrying" the unfit (and, alas, the dishonest) on the fit and honest. If premiums (or benefits) are not tailored to the individual and to the risk, then everyone must pay a higher premium, to meet the greater risk of the group and its members. This is, of course, the principle of the welfare state, and a perfectly respectable one. But it is by definition an arrangement which includes everyone, the good risk and the bad risk alike, and so is not comparable with voluntary insurance.

So far as the latter is concerned therefore, recourse to the "medical attendant's report" must in some cases continue to be a condition of securing personally selected cover, if the premiums charged are also to be personal and not on a communal basis.

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Isolated communities and their doctors

SIR,—I do not think Dr M A Wilson (2 June, p 1492) has really understood our letter about the rural practice fund (19 May, p 1358).

Firstly, the RPF may have started way back as a compensation for the necessarily small lists of the single-handed rural GP; but it is surely now regarded as a fund to offset the escalating costs of motoring, and as such should be based on these increased costs.

Secondly, he says that the 1959 inquiry was independent and fair. I had thought that the publication of Dick Crossman's diaries, covering the period when he was head of the Ministry of Health, had finally disposed of this fiction. As a matter of fact, a few years after the 1959 report a senior official in the Ministry admitted to me that the policy was to make rural practice an annexe of the nearest town—up to 20 miles radius was his yardstick. As our complaint is that the rural practice fund favours the town doctor extending out into the country, one surely should not be considered too paranoid to see a connection between them. In any case the capital costs for a young doctor taking over a rural village practice are now so prohibitive that the Department can really sit back and accomplish its purpose without further action.

The appearance of a few senior rural GPs arguing and fighting for what to DHSS officials must be a lost cause must seem strange to them; but perhaps they might understand that some of the profession dislike seeing valuable parts of British medical tradition destroyed by casual, secret, bureaucratic action, and are not prepared to let it pass without protest.

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NHS certificates for hospital patients

SIR,—As my frequent protestations to my local hospital, LMC, medical staff committees, etc, have produced no result may I appeal through the medium of your journal for a change of