which were still being investigated at that time. It is difficult to avoid appearing partisan under the pressures of a television interview, but there are two points in Drs Van de Pette and Shirley's letter which deserve further comment.

Hospitals in this region can restock at least three times a week to a level which represents about a week's use, provided blood is available. Drs Van de Pette and Shirley imply that they required two and a half times the amount of O positive blood that they received. In fact between 12 and 18 September Frimley received 17% more than its weekly average use of O positive blood. The confusion arises because during a severe blood shortage hospitals need to ask repeatedly for blood but always get less than they request. The sum total of the requests indicates more the degree of shortage than actual needs.

Secondly, although there was a severe shortage of blood, I am confident that a telephone call to one of our consultants would have had a sympathetic hearing at any time of the day or night. We have strict protocols for recording telephone calls from hospitals and have no record of any call being received on the night of 15 September.

In reply to Professor Cash, Dr E L Harris (19 September, p 722) claims that blood is always available when "clinically necessary." This is untrue unless by "necessary" he means essential to prevent imminent death. Drs Van de Pette and Shirley indicate that surgery was having to be postponed because blood, which was clinically necessary for safe surgery, was not available. This has been fairly common in this region over the past three years and almost certainly occurs from time to time in other parts of London.

Although we have had enormous support from our colleagues in other centres, this support is in the form of blood that is surplus to local requirements because of an unexpected increase in donor turn out or a drop in hospital demands. There seems to be no mechanism for real cooperation between regions, so that a centre with spare donor resources can plan to support another centre.

A serious failing of Professor Cash's article was that it did not distinguish between the national and regional organisation of blood transfusion services. As both Dr H H Gunson (19 September, p 723), who is consultant adviser on blood transfusion to the DHSS, and Dr Harris point out, the regional blood transfusion centres provide a high standard of service to donors and first class quality blood and blood products to their hospitals. In most regions the quantity is also adequate. There is no reason for either donors or hospitals to fear for the quality of service and standard of care provided by their regional centres.

It is the *national* organisation of the blood transfusion service that is flawed. How is it organised? For many years the consultant adviser chaired regular meetings of regional transfusion directors held to advise him about the needs of the service as a whole. This permitted the uniformity in standards that a national service needs. This relationship ceased with the retirement of Sir William Maycock in 1979. Although the regional directors still meet, with DHSS officers present, their meetings have no official status and they do not advise Dr Gunson. He recently described these meetings, correctly but not encouragingly, as "a club."

Dr Gunson finds Professor Cash's call for a national service to be "premature and unhelpful." I am surprised at this since he knows that at each health service reorganisation, in 1974, 1982, and 1984, the regional directors came to the majority view that a national service should be formed. Pleas to the DHSS have failed twice, and Professor Cash's article will have been helpful if it prevents yet another decision for minimal change.

When the regional directors first suggested a national service in the early 1970s the DHSS response was to set up the central committee on the blood transfusion service. This body met from time to time but I doubt whether it had any real impact on the service. It was replaced in the early 1980s by the advisory committee on the blood transfusion service, which has done much to promote the redevelopment of the blood products laboratory. However, it has no managerial relationship with the meeting of transfusion directors or with the regional transfusion centres and at present it seems to meet only every year and a half.

Dr Gunson and Dr Harris cite testing for human immunodeficiency virus (HIV) infection as an example of the way the service can be made to work nationally. But they know that neither the regional directors as a group nor the DHSS has the power to force a region to fund any particular project. The funding of HIV testing was clearly something which no region could refuse but still each centre had to get the regional rubber stamp before acting. A national service could have simultaneously decided to test and agreed the funding. In this case there were no excessive delays at regional level, but this might not be so for something like the production of plasma for fractionation.

Dr Harris claims that the national objectives for plasma collection are being achieved reasonably well, but this achievement is not uniform. In the first three months of this financial year the service reached 64% of its target, but the achievement in individual centres ranged from 39% to 93%. A good start has been made but full plasma production targets have yet to be reached. Perhaps the apparent "success" of the programme is helped by the new blood products laboratory being considerably behind schedule.

No commercial company could set out to build a major manufacturing unit at a projected cost of £20m, which subsequently escalated to £60m, without ensuring supplies of the raw material it needed for processing. A commercial company leaving the management of such a resource to a committee which met less than once a year, "a club," and 15 subsidiary companies which it had no real power to direct would be judged incompetent and could quickly find itself out of business. There must be a better way to resolve conflicting regional and national interests. Regional health authorities rightly want freedom to decide their own priorities. For instance, should they channel extra funds into the transfusion service or cervical screening? They would be loath to hand over planning of the blood transfusion service to another body and then be recharged its escalating costs. On the other hand, the service needs to work a lot better nationally.

The situation in the south Thames regions suggests that national solutions may not be easy. Here there needs to be a well coordinated biregional transfusion service but this seems to present insuperable problems for the regions. There is friction over funding, management, overall planning, and coordination. If two adjacent regions cannot solve their problems what hope is there for the rest of the country? But a solution must be found.

It is time for a meaningful change and not just a spring clean. Perhaps what we need is a truly national service encompassing all four countries in the United Kingdom. This at least would allow the two fractionation units, in England and Scotland, to provide mutual support in the event of production problems and answer Professor Cash's criticism of the lack of back up for the new unit at Elstree.

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Aluminium and human albumin solutions

Sir,—Dr D Maharaj and colleagues (19 September, p 693) remind us of the presence of aluminium in albumin[1-3] and other infusion solutions[4] and the potential clinical consequences of such contamination, particularly in patients with impaired renal function.[3]

As a consequence of these reports we have undertaken a detailed and extensive investigation to identify sources of metal ion contamination during the manufacture of albumin and other plasma derivatives. We have found several sources of aluminium contamination, including the depth filters used to clarify albumin solutions and the sodium hydroxide solutions used for adjusting the pH or sodium content of the albumin.

The use of depth filtration is essential for the preparation of visually clear albumin solutions.[5] The quantity of aluminium which can be leached from such filters into the product is reduced by extensive flushing before use. Maximum removal of aluminium can be achieved using a specially defined flush solution containing citric acid at pH 3·0. Sodium hydroxide solutions become contaminated by the leaching of aluminium from the glass containers in which the prepared solutions are stored. This can be avoided by using alternative containers made, for example, from plastic.

Despite these processing changes, some aluminium contamination still occurs during the manufacturing process. Most can be removed by introducing a diafiltration procedure, whereby small molecular weight solutes, including metal ions, pass through an ultrafiltration membrane while large molecular weight materials, such as proteins, are retained in the product solution.

Results from our study suggest that these changes in processing procedures should enable 4·5% albumin solutions to be prepared with an aluminium content of $<1{\cdot}0$ μmol/l in contrast to the 18·3 μmol/l reported by Dr Maharaj and his colleagues for the current Scottish National Blood Transfusion Service product. We will shortly introduce these process modifications with the prospect of reducing substantially the level of aluminium and other metal ion contaminants in 4·5% and 20% albumin products.

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Liver disease and platelet function in alcoholics

Sir,—Dr M Hillbom and colleagues (5 September, p 581) showed that abnormal platelet function in alcoholics is related to the extent of fatty liver infiltration. We did not show any obvious relation between liver histology and platelet inhibition in a similar study.[1,2] This discrepancy may be due to differences in selection of patients or technique.