to run successfully, looking after most of the patients on long-term anticoagulant therapy on our list. The patients are delighted with its accessibility and availability and the speed of our response to 'bad' results.

Our next task is to computerize the results, which will enable us to audit them more closely and improve our retrieval of information for the patient.

RICHARD GALLOW

43 Alexandra Road, Hemel Hempstead
Hertfordshire HP2 4AQ

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Sir,

Recent work has shown that anticoagulation control can be significantly improved using computer assisted management.[1,2]

This has, however, only been tested in hospital. I am hoping to launch a pilot study to assess the feasibility of using computer assisted management of anticoagulation in general practice. Should this system prove effective, the days of the hospital anticoagulation clinic will be numbered.

D FITZMAURICE

Department of General Practice
University Of Birmingham
The Medical School, Edgbaston
Birmingham B15 2TT

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Sir,

The paper by Pell and colleagues (April *Journal,* p.152) raises serious questions about the quality of oral anticoagulant control generally.

I carried out a similar study, between July and September 1992, of the test results for all patients attending anticoagulant clinics at Poole Hospital and for all patients whose general practitioner had sent a test to the hospital's haematology department (the hospital covers the surrounding area of Dorset with a radius of about 20 miles). The results were not quite so alarming but give no cause for complacency (Table 1). The hospital anticoagulant clinics achieved better results than the general practices, although one practice (A) achieved better results than the others.

Table 1. Results of survey of anticoagulant therapy.

	Hospital anticoagulant clinic	All general practices	Practice A
Total no. of patient tests	1710	460	95
% of tests indicating undertreatment[a]	*15.4*	*34.6*	*22.1*
% of tests indicating overtreatment[b]	*5.8*	*4.3*	*5.3*
Mean INR	2.9	2.4	2.7

INR = international normalized ratio. [a]INR <2.0. [b] INR >4.5.

The two studies are not strictly comparable because I was not able to break down the numbers by diagnosis and thus to determine performance within the British Society for Haematology guidelines for different indications; my study was retrospective and diagnoses were only available for the hospital outpatients. All non-hospitalized patients receiving anticoagulant therapy and tested over a three-month period were included. The international normalized ratios for all patients receiving anticoagulant therapy are held on computer in my department and are specifically coded. In addition, the request cards from general practice are retained for one month and the record cards for hospital anticoagulant clinics are held permanently. The hospital clinic is held three times per week and is carried out by a consultant haematologist and two experienced general practitioner clinical assistants; every patient is seen with their prothrombin time, international normalized ratio results and hospital notes. No patients are seen by junior medical staff. Few of the general practitioners working in the practices surveyed had much experience of warfarin dosage at the time of the study.

In the practice which achieved the best results, the patients are normally seen by one partner for their anticoagulation therapy and this practice sees more patients receiving this therapy than the others. The international normalized ratios are faxed to this practice immediately after testing in the laboratory. The results for the other practices are telephoned in mid-afternoon, usually to a receptionist or secretary. Faxing the results reduces the potential for transcription errors from telephoning.

Considering only patients in the recommended range of 3.0 – 4.5 in Pell and colleagues' study it is interesting that the percentage of patients with ratios above 4.5 are the same in the two studies for the hospital patients (5.8%). In Pell and colleagues' study, however, 10.9% of patients in general practice were overtreated compared with my finding of 4.3%. Numbers are small but it may be that in my study general practitioners tended to err on the cautious side when prescribing a dosage.

A major cause of poor anticoagulant control is poor patient compliance but this is always extremely difficult to quantify. Compliance is likely to be better when patients see the same doctor regularly, and the reasons for their anticoagulation are fully explained to them. It is also important that the doctor prescribing the therapy has a full knowledge of the patient, including their current drug therapy. In all of these respects the general practice setting is ideal for good anticoagulant control.

Prescribing the correct dosage of warfarin is not difficult, but experience helps. Now that more and more patients are, rightly, receiving anticoagulant therapy it is a useful skill for general practitioners to acquire, as many patients prefer to go to their practice than to a hospital clinic. In my area, over 20% of all non-hospitalized patients receiving warfarin now have their therapy controlled by their general practitioner. It is hoped to carry out another survey soon to examine whether control in either or both settings has improved.

J P LEE-POTTER

Department of Haematology
Poole Hospital,
Longfleet Road, Poole
Dorset BH15 2JB

Flourishing or floundering in the 1990s

Sir,

Like Andrew Brown (letters, April *Journal,* p.176), I deplore the philosophy that has led to a two-tier system in the National Health Service. I would, however, disagree that it is only as members of society that we as doctors should debate the issues of rationing.

I find that patients increasingly realize that what is happening to them personally is not the consequence of their own doctor's actions. They also seek guidance as to how to make an effective protest, not just a way of ensuring that their treatment is expedited. This can mean the doctor acting as the patient's advocate in a political as well as the more usual medical sense.