

the true proportion of echocardiograms resulting in advice was 96/218 (44%).

We find it difficult to accept that the authors could advise on the appropriateness of prescribing by general practitioners when guided only by patients' self reported symptoms. We believe that, in the absence of additional clinical information provided by the general practitioners, the authors were not in a position to advise on changes in treatment. Input for general practitioners when the study was being designed might have avoided this pitfall.

Lastly, the poor uptake rate among general practitioners (93/550 (17%)) limits extrapolation of the results.

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1 Francis CM, Caruana L, Kearney P, Love M, Sutherland GR, Starkey IR, *et al.* Open access echocardiography in management of heart failure in the community. *BMJ* 1995;310:634-6. (11 March.)

Service should be reserved for equivocal cases

EDITOR.—C M Francis and colleagues claim that their open access echocardiography service was "well used" and led to advice being given to change management for nearly 70% of patients.¹ I fear that they have been unsuccessful if they were trying to increase the currently low rates of prescription of angiotensin converting enzyme inhibitors in heart failure: the number of patients referred for echocardiography was small compared with the numbers of patients with known and unknown left ventricular dysfunction in the study population. The study population can be assumed to be roughly 1.1 million (assuming average practice lists for the 550 general practitioners canvassed). Among these patients up to 2% may already have left ventricular dysfunction² (that is, over 22 000) and an annual incidence of left ventricular dysfunction of 0.1 to -0.2% (that is, 1100-2200 patients) could be expected. So the referral of 259 patients for echocardiography over five months is a drop in the ocean, even if it is argued that echocardiography is unnecessary to diagnose left ventricular dysfunction in all cases.

The key difficulty in increasing the use of angiotensin converting enzyme inhibitors may be the reluctance of general practitioners to alter the treatment of patients who do not pose a clinical problem. It is time consuming to explain the reason for echocardiography in hospital to asymptomatic patients and even more time consuming to convert to treatment with an angiotensin converting enzyme inhibitor, with all the blood tests required before and after.

For this reason, in the Southend area we are focusing on the interface between general practitioners and hospitals in a pilot study for a larger audit project. Patients are being identified in a paper exercise at the general practice, and only those with equivocal disease are referred for echocardiography. The question remains whether general practitioners will act on the information given on their patients' cardiac status and alter their drug treatment, but help with sessional provision of additional medical and nursing staff may be required to achieve the desired result.

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2 Kannel WB, Belanger AJ. Epidemiology of heart failure. *Am Heart J* 1991;121:951-7.

Single assessment may be dangerous

EDITOR.—Both the paper by C M Francis and colleagues¹ and the accompanying editorial² regarding open access echocardiography for heart failure might be interpreted as suggesting that a key role of such a service is the withdrawal of "inappropriate" drug treatment. It is suggested that this decision should be based on one echocardiographic examination per subject, with what might be regarded as a higher than average rate of non-quantitative study (42% quoted). If it is assumed, as is implied, that there was no corroborative history nor examination performed to assess patients further, might an alternative interpretation be that the echocardiographic appearances simply reflected effective treatment?

Secondly, for some patients loop diuretics and angiotensin converting enzyme inhibitors may restore an appearance of normal contractility and wall thickness or luminal dimensions. As left ventricular function is not static regardless of pharmacological treatments, is not one examination in isolation and at rest inadequate to insure against important left ventricular dysfunction being present?

Thirdly, Francis and colleagues make no comment on the assessment of indices of diastolic function in their series. However controversial or imprecise the range of echocardiographic indices of diastolic function may be, did they ignore this as a possible cause of symptoms?

It would be useful to know how general practitioners and patients responded to the recommendation to stop treatment, what arrangements were made for subsequent re-examination, and whether another disease emerged in this subgroup.

In our experience of using transthoracic echocardiography after screening by general practitioners to identify patients with systolic heart failure we identified 183 patients being treated with loop diuretics who had a normal echocardiogram (fractional shortening >25%, left ventricular end diastolic diameter <5.2 cm) between January 1992 and December 1993. Of these patients, 33 had been admitted to hospital with left ventricular failure in the previous five years, 29 with no evidence of myocardial infarction. Additionally, 19 patients had had a documented acute anterior myocardial infarction. In addition to these patients admitted to hospital some symptomatic patients are likely to have been managed in the community.

In a separate project offering true open access echocardiography (that is, not restricted to assessment of heart failure) we found 304 subjects with a quantitatively normal echocardiogram and 84 with a qualitatively normal echocardiogram. Eighteen and three patients in each group, respectively, had been admitted with heart failure complicating myocardial infarction. There had also been 14 admissions for uncomplicated myocardial infarction, 24 for ischaemic heart disease, and four for atrial fibrillation in the same period.

Despite the relatively small numbers of events we believe that these data serve to show a reservoir of cardiac disease in patients with intermittent decompensation of ventricular function and a normal resting echocardiogram. We are concerned that an angiotensin converting enzyme inhibitor or a diuretic might be erroneously withdrawn.

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2 Hampton JR, Barlow AR. Open access. *BMJ* 1995;310:811-2. (11 March.)

Study's design leaves cost effectiveness and "therapeutic impact" in doubt

EDITOR.—Evaluation of diagnostic technology is generally more difficult than evaluation of therapeutic technology and is often omitted. C M Francis and colleagues' study of the use made by general practitioners of an open access echocardiography service is therefore welcome.¹ The descriptive design of the study, however, limits the conclusions that may be drawn from the findings. A comparative study (for example, with a randomised design) would have been more complex but would have yielded additional important information. For example, how would the referring general practitioners have managed these patients in the absence of open access to an echocardiography service? A comparative study would also have permitted a more comprehensive formal economic assessment of the service. We question the authors' conclusion that the study "shows that open access echocardiography is a popular and cost effective service for general practitioners." The effectiveness of the investigation (in terms of health gain for the patient) was not measured. Hence the relative cost effectiveness of an open access service and the previous system of consultant only access to echocardiography cannot be judged.

Important therapeutic changes were recommended in nearly 70% of patients referred for open access echocardiography who were already receiving treatment for presumed heart failure. It is important to ascertain whether such advice was accepted by the general practitioners and patients concerned. In how many cases was treatment changed as a consequence of the echocardiography report? This measure of the effect of an investigation was termed "therapeutic impact" by Fineberg *et al*, who described a useful hierarchy of assessment for diagnostic technologies.²

We commend the authors on providing an information pack and a meeting for general practitioners in advance of the launch of the service. The availability of training to facilitate appropriate referral practice is an important component of any new open access diagnostic service. In the interest of cost effective use of resources it may be appropriate to restrict access to some open access diagnostic facilities to those doctors who have attended such training.

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2 Fineberg HV, Bauman R, Sosman M. Computerized cranial tomography: effect on diagnostic and therapeutic plans. *JAMA* 1977;238:224-7.

Author's reply

EDITOR.—Laurence O'Toole and colleagues are missing the point. Rapid access and direct access services are complementary rather than mutually exclusive. A patient with suspected heart failure needs echocardiography, and rapid access to a specialist is not going to alter that. The clinical diagnosis in such patients is difficult for both specialists and generalists, as is borne out by the fact that O'Toole and colleagues found left ventricular impairment in only a quarter of their