

use of gastroscopy when investigations are carried out with no more information than that the patient has "dyspepsia."

There is also the uncertainty in any retrospective study of patients going back as far as 1986 of how many patients with normal results had gastritis due to *Helicobacter pylori*. Unless an antral biopsy was done this entity will have been missed as the condition is often not visible even to experienced endoscopists.

Our hospital has offered open access gastroscopy to general practitioners for the past eight months through a request form that takes two to three minutes to complete and requests information on drug history, etc. We insist that forms are filled in satisfactorily, and the demand for the new service has been stable over the past four months at about 25 patients per week, gastroscopy being performed within two to three weeks of the request (the catchment population is 300 000). This workload is absorbed by six consultants and two clinical assistants, who are already performing over 4000 endoscopies per year. Most patients requiring open access gastroscopy would be referred to the outpatient department if this service was not available.

Previously almost half of our clinic referrals were essentially requests for gastroscopy but initiated at least one new patient visit to the clinic. These requests have now fallen, allowing patients whose complaint is not urgent to be seen within four to six weeks instead of the three to four months it took before the open access gastroscopy service was made available to general practitioners. Thus everybody gains. The general practitioner retains clinical control of the patient and obtains accurate diagnostic information on his or her upper gastrointestinal tract. The only loser is the radiologist—is it time to do more open access ultrasound?

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SIR,—We would like to make several observations regarding the recent article on open access gastroscopy by Dr D D Kerrigan and colleagues.¹

While agreeing that open access endoscopy is desirable we feel it is important to emphasise to general practitioners that, particularly in patients under 45 who have uncomplicated dyspepsia, some sort of selection is imperative to avoid swamping the service. In a recent study in Leicester we showed that in patients under 45, 60% had no disease at endoscopy, with this figure rising to 75% after barium meal examination.² Although we are not suggesting that all patients under 45 should be denied access to endoscopy, a more careful clinical screening is necessary to reduce numbers. The worry of having an arbitrary cut off point for endoscopy is the possibility of missing gastric carcinoma, but, of 707 histologically proved cases of gastric carcinoma over seven years in Leicester, only 1.8% of the patients were under 45. All of these patients had symptoms that were suggestive of more serious disease than simple dyspepsia.

Unfortunately the article by Mr Kerrigan and colleagues does not give a breakdown of the various diseases by age or the percentage of abnormal findings, which would have been valuable.

Ideally, an open access endoscopy unit for patients over 45 would be a practical proposition provided that there was a simple screening system that could be applied by general practitioners in their surgeries to decide which patients warrant referral. We are currently working on such a system to apply to patients under 45 and only time

will tell whether this will be practical for a busy general practitioner. With medical audit uppermost in most people's minds this probably should be the way forward.

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- 1 Kerrigan DD, Braun SR, Hutchinson GH. Open access gastroscopy: too much to swallow? *Br Med J* 1990;300:37-6. (10 February.)
- 2 Williams B, Luckas M, Ellingham JHM, Dain A, Wicks ACB. Do young patients with dyspepsia need investigation? *Lancet* 1988;ii:1349-51.

Medical audit

SIR,—Letters on medical audit by Dr B J Boughton¹ and Drs Malcolm Aylett and Pali Hungin² yet again show the diversity of those who describe its scope and implementation. The provision of funding seems likely to dictate the scale that these studies will assume. A paper from the standing committee on postgraduate medical education is before Mr Kenneth Clarke, and a departmental circular on audit is expected soon, which will embody guidelines and, no doubt, reflect an estimate of the time and funding to be allocated.

It must be recognised that introducing medical audit comprehensively across the specialties cannot be imposed on the plenum of material and must be allowed to develop from in depth investigation of chosen topics. The chief benefit to be gained in the long run may emerge as an increased willingness of health professionals to consider and accept changes in practice that are identified in the process. This will require the jettisoning of old and often favoured procedures, giving place to newer and demonstrably more effective activities.

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- 2 Aylett M, Hungin P. Medical audit. *Br Med J* 1990;300:463. (17 February.)

SIR,—I would like to take issue with Drs Malcolm Aylett and Pali Hungin, who state that "in general practice process is virtually synonymous with outcome" and suggest that audit of process will suffice.¹

They cite frequency of measurement of blood pressure as an example of a basic clinical process that could validly be audited in isolation. I suggest that process is never synonymous with outcome. I agree that setting standard clinical protocols and measuring the percentage of adherence to these protocols is a measure of the level of adherence to the protocol. No measure of the effect of the activity is made. Previous assumptions on which the stated protocol is based have to be accepted as proved and unchangeable. Though it is useful to count the number of blood pressure measurements done in a general practice, if previously the practice has set out to measure everyone's blood pressure and later wishes to know if this has been done I am concerned that in counting the level of the defined activity the effects of that activity, for good or ill, are not considered. I am reminded of the story of the security officer who checked, as was his protocol, that all wheelbarrows leaving the building site where he worked were empty. He did this with great dedication. He never noticed over a period of a year that 50 wheelbarrows had been stolen. Unerringly he had followed the process laid down for him. He had no interest in outcome.

Similarly, in general practice we cannot assume that counting the frequency of any activity does any more than count the frequency of that activity.

Increased measurement of blood pressure may result in many outcomes—for example, more patients labelled hypertensive, more patients worried about hypertension, more citizens rendered patients, fewer deaths from target organ damage, more morbidity from antihypertensive drugs, less emphasis on other aspects of the patients' health, and so on.

Measure of outcome may be a holy grail that we might never attain, but measuring only process in the belief that it equals outcome suggests that we are entitled to construct our own holy grail for each of our activities. "Just because we know what we are doing is right, we need only count how often we are doing the right things" is perhaps an approach we have come to recognise in Her Majesty's government, but it is not a scientific approach which we should apply to our activities.

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Anabolic steroids and infarction

SIR,—As the interest in the thrombogenicity of anabolic steroids has continued¹ I would like to update our report on a 23 year old bodybuilder taking anabolic steroids who presented in June 1989 with an acute lateral myocardial infarction.² Firstly, with regard to his plasma lipid concentrations, which he had had checked several times as a health screening measure at his bodybuilding club before his infarct, he exhibited the low high density lipoprotein and high low density lipoprotein concentrations that are characteristic of people taking anabolic steroids³ (table). He now claims to have stopped taking anabolic steroids, and his results are greatly improved (table).

Plasma lipid concentrations in a 23 year old bodybuilder

Date	High density lipoprotein (mmol/l)	Total cholesterol (mmol/l)
1 July 1987	0.12	10.50
4 Jan 1989	0.07	9.77
9 March 1989	0.17	7.21
26 Jan 1990	0.59	7.10

He also underwent cardiac catheterisation, which showed a large area of anterior and septal akinesis. In the left coronary artery the left main stem was normal, the left anterior descending artery was occluded after the first septal branch and filled distally from the right coronary artery, and there was atheroma in a large oblique marginal branch. There was also narrowing in the right coronary artery at the bifurcation into the posterior descending and left ventricular branches.

The patient continues to exercise and has declined any further interventions. The findings on catheterisation contrast with the findings of normal coronary arteries in a previous similar case⁴ and add some further suggestive evidence that atherogenesis mediated through abnormal lipid concentration may at least partly explain any thrombogenic effect of anabolic steroids.

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- 1 Ferenchick GS. Are androgenic steroids thrombogenic? *N Engl J Med* 1990;322:476.
- 2 Bowman SJ, Tanna S, Fernando S, Ayodeji A, Weatherstone RN. Anabolic steroids and infarction. *Br Med J* 1989;299:632. (2 September.)
- 3 Hurley BF, Seals DR, Hagberg JM, et al. High density lipoprotein cholesterol in bodybuilders v powerlifters. *JAMA* 1984; 252:507-13.
- 4 McNutt RA, Ferenchick GS, Kirilin PC, Hamlin NJ. Acute myocardial infarction in a 22 year old world class weight lifter using anabolic steroids. *Am J Cardiology* 1988;62:164.