

# GENERAL PRACTITIONERS' USE OF THE LABORATORY

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## INTRODUCTION

The pathology service in Lancaster has a fixed budget but its work is almost entirely dictated by the demands of the clinicians. Roughly one third of the workload comes from the community.

Only since 1988 has the recording of the source of requests permitted a detailed analysis of the variations which exist in the patterns of usage by different clinicians.

A recent study in Oxfordshire showed differences up to a hundredfold in the frequency with which similar practices requested some common haematology tests and with that in mind, I undertook an analysis of pathology requests by 16 Lancaster general practices during 1988. Some of the results were presented to an audience of general practitioners in April 1990 and form the basis of this article.

## COLLECTING THE DATA

Although the source of requests is part of the database held on a microcomputer in the laboratory, acquisition of this data is a painstaking manual process. Careful clerical work, initially by the medical laboratory scientific officers in noting the source on a worksheet and subsequently by the clerk who transcribes it into the computer is the only way at present to capture the data. Thereafter, manipulation is fairly straightforward and of course, efficient storage of the data is simple.

With the help of Mr. Bob James who supervises this aspect of the work of the laboratory, it was possible to look at the numbers of requests for the common tests in haematology, biochemistry and microbiology for 1988 broken down by surgery. Individual doctors are not identified in the data for the community (although hospital doctors are).

In order to make any sensible comparison between surgeries, a denominator must be found and the obvious one is list size. The Family Practitioner Committee was willing to let me have this information for the purposes of the exercise but neither in my talk nor in this article are surgeries identified. One or two surgeries have subsequently asked for their requesting figures to be fed back to them and this has been done.

In the study of laboratory work it is important to distinguish between requests and tests. A single request may generate several tests and request figures are not a good measure of workload. This article does not concern itself with the workload of the laboratory and will be solely concerned with comparative figures for requests.

Apart from patient numbers, I considered other variables which might influence requesting patterns. These were, distance of the surgery from the infirmary, employment of a practice nurse to take samples, and age, or rather maturity, of

the partners. The first two were easy to establish but the third required some research. In the end, I settled for years from qualification of the partners using the Medical Directory for the information.

## RESULTS

Discipline	Total requests	% from GP's
Biochemistry	96,252	24.7
Haematology	82,123	21.6
Microbiology	51,205	37

Table 1 - 1988 Figures

The proportion of the workload coming from general practitioners is not the same in all disciplines. Relatively more microbiology is done (Table 1) for the community. A look at the raw data showed a very large variation indeed in the numbers of common tests requested with a suggestion that particular practices were heavy users of the laboratory in all disciplines. Correction for list size was done by constructing a "requests per patient per year" figure. This did not alter the pattern very much even though most of the heavy users were larger practices. Figure 1 shows the requesting pattern overall and by discipline.

Distance from the infirmary showed no particular correlation with laboratory use (Figure 2) although it must be said that this study did not encompass the most distant (Cumbrian) practices.

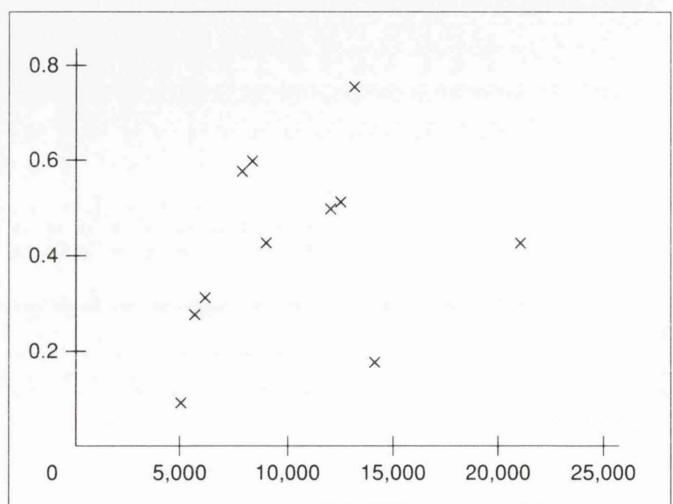


Fig 1a - Requests per patient per year vs list size - all disciplines

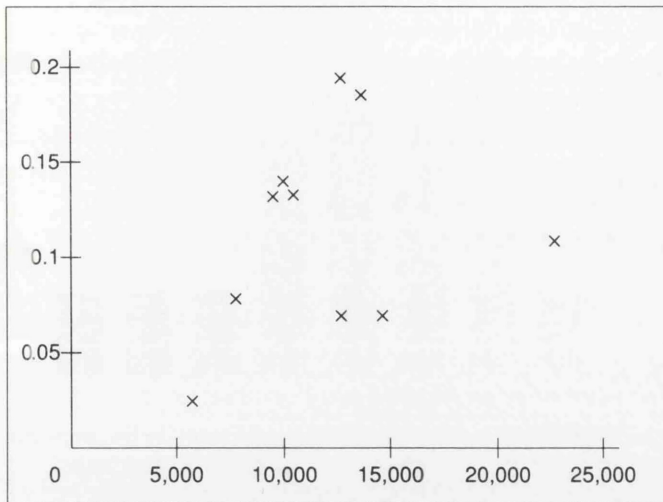


Fig 1b - Microbiology requests per patient per year vs list size

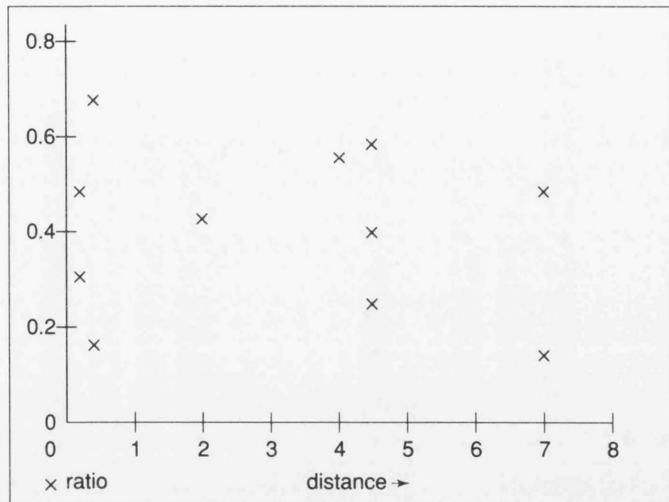


Fig 2 - Requests per patient per year vs distance in miles from Royal Infirmary - 11 surgeries

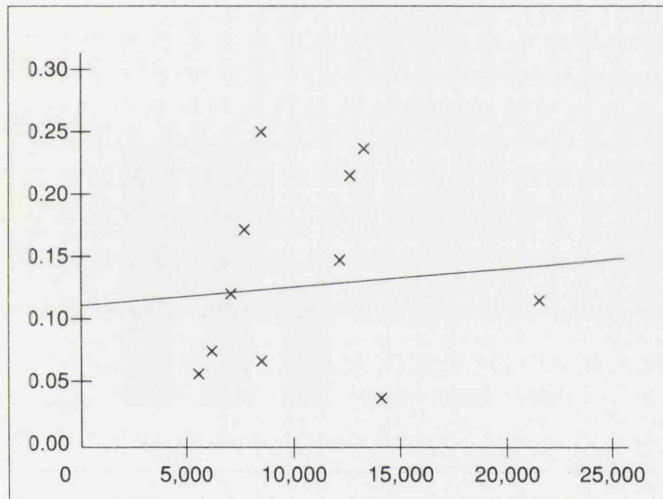


Fig 1c - Biochemistry requests per patient per year vs list size

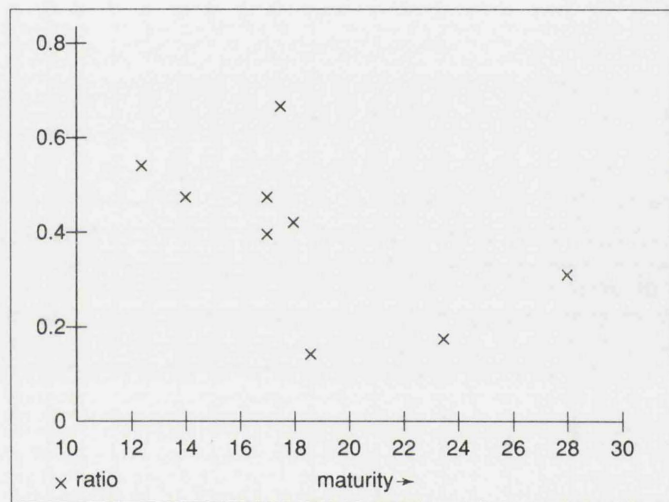


Fig 3 - Requests per patient per year vs average years from qualification of partners - 11 surgeries

### INR

Anticoagulant control may be carried out by general practitioners or by hospital doctors through the twice weekly anticoagulant clinic. Different practices make different use of the outpatient clinic as can be seen from Figure 4. It is salutary to note that a recent audit showed that although control was poor amongst GP patients with up to one third of patients outside the therapeutic range, it was equally poor amongst those patients attending the clinic at the infirmary.

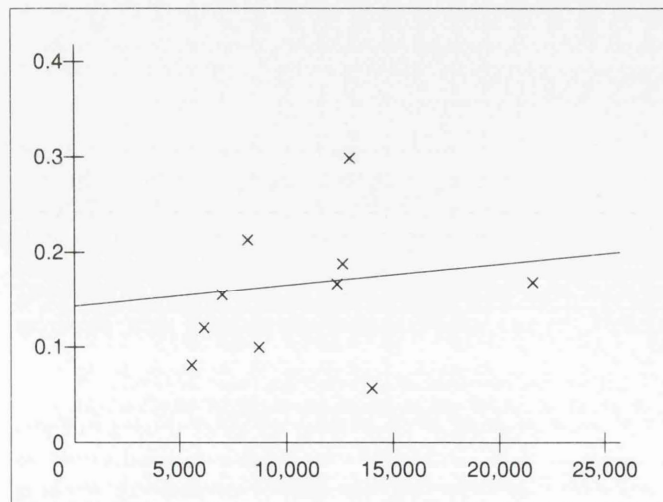


Fig 1d - Haematology requests per patient per year vs list size

All surgeries except two had nurse phlebotomists so this could not explain the variation. Maturity of partners did not seem to correlate strictly with requesting pattern (Figure 3) for although there does seem to be a trend there were striking exceptions.

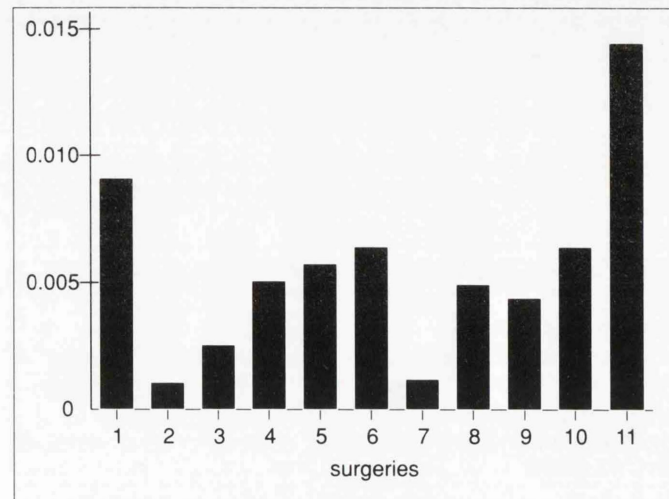


Fig 4 - INR - required per patient per year for 11 surgeries

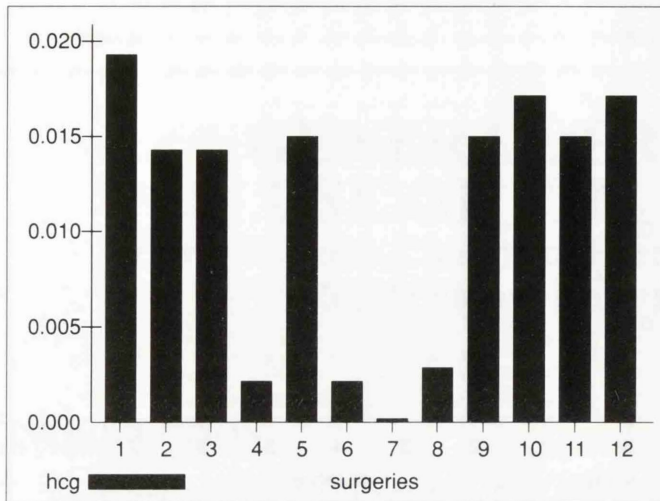


Fig 5 - HCG - requested per patient per year for 12 surgeries

## HCG

Some practices either do no pregnancy tests or do them all in the surgery; others seem to test a high proportion of patients as shown in Figure 5. The reasons for this variation remain obscure.

## COSTS

Discipline	Non-staff costs	Total
Biochemistry	£145,000	£300,000
Haematology	£61,000	£219,000
Microbiology	£54,000	£180,000
TOTAL**	£278,000	£792,000

\*\*Includes Histopathology

Table 2 - 1988 Figures (rounded)

The need to be aware of the costs of resources is generally accepted. Many of the tests done for general practitioners have a fairly small marginal cost and I am not sure that listing such a figure is very helpful.

Instead, I have given a rough idea of global costs (Table 2) and then indicated the comparative costs of some of the common tests in each discipline (Figure 6). The figures are all 1988-89 costs and will have risen with inflation accordingly.

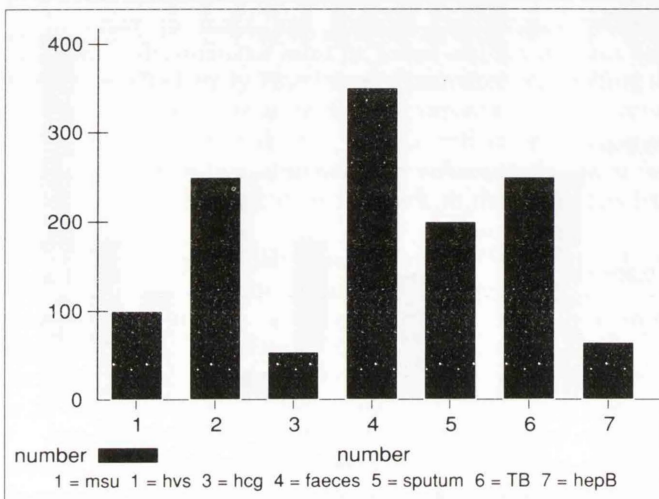


Fig 6a - Relative costs of some microbial tests

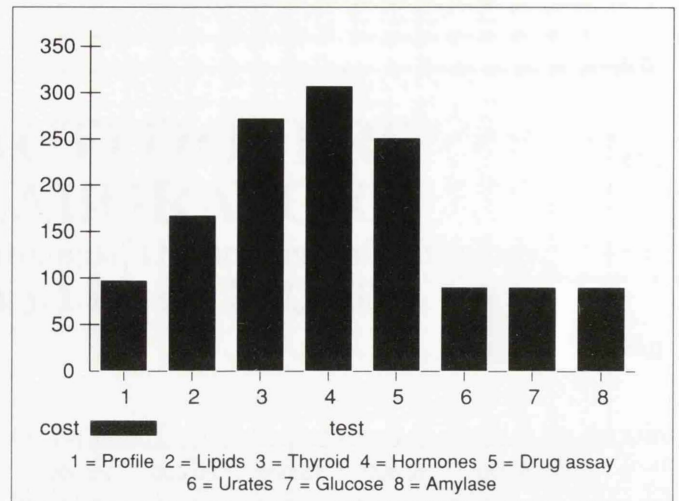


Fig 6b - Relative costs of some biochemistry tests

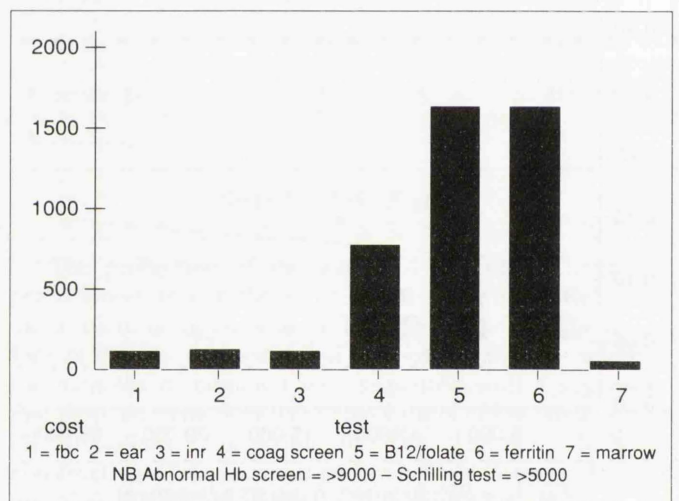


Fig 6c - Relative costs of some haematology tests

## DISCUSSION

I have no ready explanation for the large variation in use of the laboratory by different general practices. Similar rather more extreme variation has been noted in Oxford<sup>(1)</sup> and London<sup>(2)</sup>. The suggestion has been made that requests for laboratory tests, X-rays, prescriptions and consultant opinions tend to group together. Some doctors seem to be "doing" doctors who consume more health care resources than others.

Any practice which has its own budget will need to know in detail what its laboratory tests costs are. All doctors are being encouraged to take an interest in auditing working practices, outcome and value for money, and it may be that some of the large variation described will diminish.

## REFERENCES

1. Ross J.R. Personal Communication
2. Hartley R.M., Charlton J.R., Harris C.M., Jarman B. American Journal of Public Health 1987; 77: 565-567