

## Practice activity analysis

### 3. Investigation

FROM THE BIRMINGHAM RESEARCH UNIT OF THE ROYAL COLLEGE OF GENERAL PRACTITIONERS

**T**HIS report is based on an analysis of the first 100 proformas received. The recording took place during two consecutive weeks in late August or early September 1977. Participation in the study was entirely voluntary. The 100 proformas are concerned with 32,028 consultations.

#### Results

The consolidated results are presented in Grid C as in the retained slip of the original analysis data sheet. The term 'investigation' is used here to describe one of the specimen categories. One patient may be subjected to more than one investigation procedure and conversely, one specimen may be used for several investigations.

The format of Grid C is used in Table 1, in which the number of doctors recording "no score" in any particular cell is recorded. For these recorders, either the investigation facility was not available or it was not used during the study. In Table 2 the format of Grid C is used again to present the average scores for those recorders who recorded positive scores for that cell (i.e. aggregate of investigations divided by the number of doctors undertaking or arranging the investigation at least once). This table should be viewed against an average of 320 consultations per participating doctor. These two tables provide a guide to the availability of various investigation facilities and the workload imposed on the doctors, their practice organizations, and hospital laboratory services. The conclusions drawn relate to the participants and cannot be applied nationally.

#### Blood tests B

Over 70 per cent of the 1,087 blood specimens investigated were collected in the practice for analysis elsewhere. For this large proportion, therefore, a hospital-based technician was not employed to do the venepunctures. A few specimens (50) taken by 16 doctors were analysed within the practice and these were

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#### GRID C. Consultations (number and rates per 1,000).

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| Specimen                      |        | CP/AP | CP/AE | CE/AE | Total |
|-------------------------------|--------|-------|-------|-------|-------|
| Blood (B)                     | Number | 50    | 772   | 265   | 1,087 |
|                               | Rate   | 1.6   | 24.1  | 8.3   | 33.9  |
| Urine for pregnancy test (UP) | Number | 35    | 107   | 62    | 204   |
|                               | Rate   | 1.0   | 3.3   | 1.9   | 6.4   |
| Urine/other test (UO)         | Number | 509   | 334   | 135   | 1,068 |
|                               | Rate   | 18.7  | 10.4  | 4.2   | 33.4  |
| Faeces/swab (F/S)             | Number | 6     | 222   | 37    | 265   |
|                               | Rate   | 0.2   | 7.0   | 1.2   | 8.3   |
| Cytology specimen (C)         | Number | 5     | 237   | 12    | 254   |
|                               | Rate   | 0.2   | 7.4   | 0.4   | 7.9   |
| Patient for x-ray chest (XC)  | Number | 9     | 47    | 186   | 242   |
|                               | Rate   | 0.3   | 1.5   | 5.8   | 7.6   |
| X-ray other (XO)              | Number | 8     | 60    | 263   | 331   |
|                               | Rate   | 0.3   | 1.9   | 8.2   | 10.3  |
| ECG (E)                       | Number | 95    | 4     | 25    | 124   |
|                               | Rate   | 3.0   | 0.1   | 0.8   | 3.9   |
| Total                         | Number | 807   | 1,783 | 985   | 3,575 |
|                               | Rate   | 25.2  | 55.7  | 30.8  | 111.6 |

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CP/AP—Collected and analysed in practice.

CP/AE—Collected in practice and analysed elsewhere.

CE/AE—Collected and analysed elsewhere.

**Table 1.** Number of recorders with a zero score.

| Specimen                      | CP/AP | CP/AE | CE/AE | Total |
|-------------------------------|-------|-------|-------|-------|
| Blood (B)                     | 84    | 20    | 60    | 3     |
| Urine for pregnancy test (UP) | 82    | 51    | 75    | 17    |
| Urine/other test (UO)         | 26    | 35    | 66    | 4     |
| Faeces/swab (F/S)             | 95    | 30    | 82    | 25    |
| Cytology specimen (C)         | 98    | 31    | 93    | 24    |
| Patient for x-ray chest (XC)  | 95    | 83    | 36    | 19    |
| X-ray other (XO)              | 94    | 82    | 27    | 13    |
| ECC (E)                       | 61    | 97    | 80    | 42    |
| Total                         | 13    | 2     | 16    | 0     |

presumably for haemoglobinometry, though 'Dextrostix' analysis for blood sugar estimation has also been included in this category. Three doctors recorded no blood investigations whatsoever and for one of these at least the facility was not available owing to temporary staff shortages.

The variation in use of blood tests among the recorders is described in Table 3. The 100 recorders are divided into five groups of 20 each (A to E); the minimum and maximum rates are presented with those rates which divide the groups.

#### *Urine pregnancy test (UP)*

Eighteen recorders undertook 35 pregnancy tests within the practice representing about 17 per cent of all pregnancy tests. Doctors varied considerably in their use of this test, and 17 recorders did not use it at all. The variation among recorders is detailed in Table 4.

**Table 2.** Average number of investigations per doctor (for doctors recording at least one investigation in any cell of this grid). Average value by those making a positive score in any cell (to nearest whole number).

| Specimen                      | CP/AP | CP/AE | CE/AE | Total |
|-------------------------------|-------|-------|-------|-------|
| Blood (B)                     | 3     | 10    | 7     | 11    |
| Urine for pregnancy test (UP) | 2     | 2     | 2     | 2     |
| Urine/other test (UO)         | 8     | 5     | 4     | 11    |
| Faeces/swab (F/S)             | 1     | 3     | 2     | 4     |
| Cytology specimen (C)         | 2     | 3     | 2     | 7     |
| Patient for x-ray chest (XC)  | 2     | 3     | 3     | 3     |
| X-ray other (XO)              | 1     | 3     | 4     | 4     |
| ECC (E)                       | 2     | 1     | 1     | 2     |
| Total                         | 9     | 18    | 12    | 36    |

Average consultations = 320 per doctor.

#### *Urine for other tests (UO)*

Five hundred and ninety-nine tests are recorded as taking place within the practice. The authors apologize for the lack of precise instructions in scoring for this cell. Many doctors did not score simple 'dip stick' urinalysis as an investigation. For this reason it is not possible to interpret the results in this cell.

Three hundred and thirty-four urine specimens were collected for analysis elsewhere and an additional 135 specimens were delivered direct to the laboratory at the recorder's request. The majority of these tests would be for urine microscopy and culture.

#### *Faeces/swab tests (F/S)*

The results in Tables 1 and 2 can be used to interpret the

**Table 3.** Total blood investigations (rates per 1,000 consultations).

| A            | B  | C  | D            | E   |     |
|--------------|----|----|--------------|-----|-----|
| 0            | 19 | 35 | 58           | 101 | 257 |
| Minimum rate |    |    | Maximum rate |     |     |

**Table 4.** Urine pregnancy tests (rates per 1,000 consultations).

| A            | B  | C  | D            | E   |     |
|--------------|----|----|--------------|-----|-----|
| 0            | 19 | 35 | 58           | 101 | 257 |
| Minimum rate |    |    | Maximum rate |     |     |

use made by recorders.

*Cervical cytology (C)*

This is now well established as a general-practice procedure, and 69 out of the 100 recorders collected at least one specimen.

*X-ray chest (XC)*

Chest x-ray was requested on 242 occasions. A significant number (56) were undertaken on the premises. Nineteen recorders made no requests for chest radiography; some of these had no facility.

*X-ray other (XO)*

Of the 331 "other" requests for radiology made, some were for the investigation of injuries, which remains a responsibility for some rural practitioners. (The results in Table 1 are important to the interpretation of the results for this investigation.)

*Electrocardiography (ECG)*

Ninety-five ECG investigations were undertaken within the practice at the instigation of 39 general practitioners. Twenty-three ECG requests were made to hospital-based departments. Electrocardiography is establishing itself in the armoury of many general practices but is not extensively used as a hospital-based facility.

*Specimen collection and analysis*

Eight hundred and seven investigations were under-

**Table 5.** Total investigations (rate per 1,000 consultations).

| A            | B                  | C  | D            | E   |     |
|--------------|--------------------|----|--------------|-----|-----|
| 10           | 62                 | 88 | 117          | 168 | 366 |
| Minimum rate | Intermediate rates |    | Maximum rate |     |     |

**Table 6.** Rates of blood and total investigations (per 1,000 consultations) related to number of consultations.

| Reported consultations | Number of recorders | Investigations |       |
|------------------------|---------------------|----------------|-------|
|                        |                     | Blood          | Total |
| Less than 249          | 32                  | 48             | 160   |
| 250 to 349             | 31                  | 33             | 107   |
| More than 350          | 37                  | 29             | 95    |

taken completely in the practices, though the confusion regarding urine tests limits the value of this figure.

Seventeen hundred and eighty-three specimens were collected in the practices and analysed elsewhere. This figure is twice that of the adjacent cell consisting of specimens collected and analysed elsewhere. This important contribution to patient convenience and easing of pathology technical services is not always recognized.

*Total investigations*

The range of values recorded for total investigations is presented in Table 5. The format is similar to that of Table 3 and has been used in the earlier analyses in this series.

*Influence of workload*

In Table 6 the influence of workload, measured by the number of consultations undertaken, is examined in relation to the use of blood investigations and total investigations. As consultations rise so the rate of investigation falls. Information about list size was not sought and therefore we cannot relate these results to it.

**Acknowledgements**

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**Addendum**

Doctors interested in this series of analyses are encouraged to send in their returns to the Research Unit whether or not they are likely to arrive before any published closing date.