Middle Articles

GENERAL PRACTICE OBSERVED

A Health Week in Rural General Practice

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The work of Donaldson and Howell (1965) in Rotherham stimulated us to try to assess the value and feasibility of a multiple-screening clinic in a rural area organized by general practitioners. We were particularly interested in measuring the public response to such a scheme and in discovering the difficulties which might arise in its execution.

In deciding the range of tests to be offered to the public we followed the suggestions of Acheson *et al.* (1963) that any screening procedure should be directed at a particular disease, the undiscovered incidence of which should be high enough to make the test economically worth while, and that any test must be capable of rapid, facile, and accurate estimation. Also we had to bear in mind that in our case some of these tests would have to be carried out by lay persons.

In the present study it was decided to perform eight tests to detect chest diseases, anaemia, glaucoma, cervical carcinoma, carcinoma of the breast, hypertension, glycosuria, and albuminuria, together with a simple test to detect significant degrees of visual acuity.

The practice covered by the survey is wholly rural and is based on Swineshead, a village with 1,900 inhabitants in South Lincolnshire. A further 800 patients live in a village 4 miles (6.4 km.) away and the remainder of the 4,100 patients in the practice live in scattered hamlets within a 10-mile (16-km.) radius.

Organization

Our first step was to enlist the support of the local medical officer of health, since, for ethical reasons, all advertising and publicity had to emanate from the local health committee. After the end of the health week the M.O.H. acted as a liaison officer between us and neighbouring general practitioners. At an early stage we took the precaution of confirming with the Ethical Committee of the B.M.A. that our proposed scheme was permissible.

The local youth club hall was hired for six days at the beginning of October 1966, and for three weeks before the health week posters and other advertising literature were distributed throughout the practice. In addition, talks on the objects of the clinic were given to women's institutes and mothers' unions, and patients were further urged to attend by personal exhortation when they visited the routine surgeries.

The clinic was open from 4.30 to 9 p.m. each evening, though this meant one of us being absent for part of each evening to run the ordinary evening surgery. A free bus service was provided each evening to bring in patients from outlying hamlets.

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Attendance.—The total number of people attending for the screening was 1,711 (773 (45.2%) males and 938 (54.8%) females). Of these, 1,284 were patients registered with us, and this represented 38.5% of our total practice population over 15 years of age. We excluded schoolchildren from this survey because they are already adequately catered for by existing schemes. Of the total attending, 427 (28%) were not our patients, and they were attracted by word-of-mouth publicity from outside our area.

Tests

Glaucoma.—An ophthalmic technician was hired for the week to perform tonometry on patients over the age of 30. The demand for this test was so overwhelming that after the first night the lower age limit was raised to 45 years. A Schiøtz tonometer was used to measure the intraocular pressure, and all patients in whom this was 20 mm. Hg or over in either eye were referred to the local consultant ophthalmologist for further assessment. A total of 390 patients underwent tonometry, the results of which are given in Table I. The incidence of undiscovered glaucoma (1.8%) revealed by this survey is slightly higher than in similar studies by Wright (1966) and Luntz *et al.* (1966), who give incidence figures of 1.1% and 1.5% respectively.

TABLE I.—Tonometry Findings

Total number tested	390
Referred for further investigation	67
Glaucoma requiring iridencleisis	5
Glaucoma requiring medical treatment	2
Persistent ocular hypertension	25

Glycosuria and Albuminuria.—Hema-combistix was used to test for both these conditions. Local lay women were trained in its use and any positive findings were subsequently checked by us. The Hema-combistix also carries a test strip for haematuria, and any positive finding on this strip was immediately reported to us for a second opinion. At first there were 44 cases of presumptive glycosuria among the 1,342 samples of urine tested. These patients were subjected to a second urine test after preloading with glucose. As a result of this test four new cases of diabetes were discovered (0.3%). The results of testing for albuminuria were disappointing. Of the 85 people with albuminuria on initial testing, subsequent retesting of early morning specimens (and a midstream specimen of urine if this was positive) revealed only one case of pyelonephritis, one persistent albuminuria (still under investigation), and one case of renal calculus (this last case was our only positive finding of haematuria).

Anaemia.—Haemoglobin levels below 12.5 g./100 ml. (85%) for men and 10.9 g./100 ml. (75%) for women were regarded

as being abnormal. The cyanmethaemoglobin colorimetric technique was used and the tests were performed by a haematological technician. Of the 1,427 patients who underwent this investigation, 110 (7.7%) had abnormally low haemoglobin levels. All these anaemia patients were subsequently found to have iron-deficiency anaemia, the most severe case being that of a man aged 54 suffering from persistent epistaxis who had a haemoglobin level of 5.6 g./100 ml.

Hypertension.—A team of district nurse-midwives and health visitors performed this test. A diastolic pressure greater than 100 mm. Hg or a systolic pressure over 150 mm. Hg was regarded as abnormal in both sexes, and readings above these figures were checked by one of us. Of 1,565 patients taking this test, 43 (2.75%) had readings in excess of the above criteria, the highest figure being in a man aged 45 who was found to have a symptomless blood pressure of 240/145 mm. Hg.

Cervical Cytology.—The Ayres cervical smear technique was used in this test. Women aged 25 to 60 were prepared for the screening by two district nurses, and one of us went to and fro between two rooms taking the smears. By this method we were able to perform a maximum of 112 smears in one evening, and thus obviated the slowness of this test which has been a feature of previous screening programmes (Donaldson and Howell, 1965). We contracted with the cytological technician of the local hospital to stain and examine the smears. The number of smears taken was 402, of which 2 (0.5%) were positive for carcinoma. The other results from this test are given in Table II. A full pelvic examination was not made, since we felt that the accurate detection of potentially dangerous intrapelvic diseases was impossible during what was essentially a rapid screening programme.

TABLE II.—*Cervical Cytology*

Total number of smears	..	..	..	..	402
Cervical carcinoma	..	..	..	..	2
Atypical cells (for repeat)	..	..	..	..	1
Monilia	..	..	..	..	1
Trichomonas vaginitis	..	..	..	..	8
Senile vaginitis	..	..	..	..	1

Chest Radiography.—This test was performed by the Lincolnshire mass radiography mobile unit. A total of 1,684 persons were x-rayed and the abnormalities discovered are given in Table III. The incidence of active pulmonary tuberculosis (0.12%) corresponds closely to previous surveys in Lincolnshire (J. Beech, personal communication).

TABLE III.—*Chest X-ray Results*

Total number x-rayed	..	..	..	..	1,684
Active tuberculosis	..	..	..	..	2
Inactive tuberculosis	..	..	..	..	8
Cardiac hypertrophy	..	..	..	..	31
Hiatus hernia	..	..	..	..	3
Emphysema	..	..	..	..	9
Bronchiectasis	..	..	..	..	2
Eventration of diaphragm	..	..	..	..	2

Visual Acuity.—The Keystone vision-testing apparatus, operated by trained lay women, was used to give patients an assessment of their visual acuity, provided that they were not already under the care of an optician. Any person with a visual acuity of less than 6/9 in either eye for distant vision or less than J.4 in either eye for near vision was strongly advised to consult an optician. This test was carried out on 741 patients, 372 of whom did not satisfy the above criteria. This service was greatly appreciated by the patients because it gave them a rapid assessment of their visual ability without the inconvenience of a full optical examination.

Breast Examination.—We personally examined by inspection and palpation the breasts of 456 women over the age of 25 and found only one case of possible early carcinoma of the breast. This subsequently proved to be benign. We feel strongly that this method of screening for mammary carcinoma is out of date and cannot compare with the more sophisticated techniques of x-ray mammography and pyroscopy.

Height and Weight.—Every person attending the clinic was weighed and measured. Although no useful purpose is served in publishing the figures obtained, they proved very helpful in evaluating the results of other tests—for example, hypertension and glycosuria. Moreover, every grossly overweight patient was advised to attend routine surgery for advice on the correction of their adiposity.

Discussion

The chief advantage of organizing a multiple-screening clinic in the setting of general practice is that when abnormalities are discovered follow-up can be instigated with the minimum of delay; for example, one of our cases of glaucoma had his iridencleisis within 48 hours of attending the clinic. The main disadvantage is the difficulty of general practitioners being able to acquire sufficient ancillary help. However, we feel that some of the work, particularly in the recording of results, can be done by lay people.

The response to this scheme exceeded our expectations and seems to show that in a rural practice the percentage of patients wishing to avail themselves of such a clinic, run by their own doctors, is remarkably high.

In assessing the value of the positive results obtained from the health week, it would appear that in a practice in which routine urine testing features highly in the ordinary examination of the patients the number of undiscovered diabetics may not be as high as has been disclosed by previous surveys (Walker and Kerridge, 1961; College of General Practitioners, 1962). Those two papers give the percentage of undiagnosed diabetics as 0.67% and 0.69%, compared with our figures of 0.3%. Conversely, the number of people who have symptomless glaucoma must be a cause for concern. We have been so alarmed by the extent of undiagnosed glaucoma that we are initiating a tonometry clinic in our practice.

Our main technical difficulty was the high number of urines which, while positive for glucose or albumin on initial testing, were subsequently found to be negative. It seemed that many of the multiform "sample bottles" in which people brought their specimens were contaminated, and unless it is found possible to give specific instructions for the collection of clean samples of urine this difficulty will remain. We also found that the reaction of the "trace" colour on the albuminuria section of the Hema-combistix was capable of a wide variation of interpretation and was therefore dispensed with.

In any future screening programme we would like to include rectal examination of all men over the age of 50. This was impossible in the present survey owing to the lack of a suitable room.

We feel that there is great scope for further development of multiple screening clinics run by general practitioners in close-knit communities. Many difficulties could be obviated if practitioners could amalgamate and thus provide the requisite manpower to run these clinics.

The cost of a service such as we have outlined is not prohibitive. Our total outlay was £150, of which the pharmaceutical industry donated £135. The major items of expenditure were £91 for the technicians and £17 for the bus service. All our advertising was paid for by the local health committee.

Summary

A multiple-screening clinic in general practice was attended by 1,711 people. Two cases of cervical carcinoma were discovered, as were 110 cases of anaemia, 2 cases of active pulmonary tuberculosis, 4 diabetics, 43 hypertensives, 7 cases of glaucoma, and 3 cases of urological disease. All these conditions had previously been unknown to the general practitioner.

The feasibility of organizing such work on a general-practitioner level is assessed, and the abundant demand for and value of such a service is demonstrated.

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CONTEMPORARY THEMES

“Cruachan”—A Home for Children with Metabolic Needs

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Diabetes mellitus affects about 35 children in every 100,000 between birth and 16 years of age, though the incidence may be higher in some places than in others (Farquhar, 1962). The same size of population may yield 50 children with gluten-sensitive enteropathy, 10 with phenylketonuria, and a scattering with rarer inborn errors of metabolism. All of these disorders share at least two things. The first is the child's dependence on a properly arranged and prepared diet, and the second is his potential for good physical and mental health. Unfortunately the first is not always available and the second is too often forfeited as a result.

The opening of Dr. Barnardo's home “Cruachan” on 29 March by Sir Maxwell Inglis at Balerno, near Edinburgh, has provided in Scotland a high standard of care for diabetic children whose home conditions are likely to prejudice seriously their health or even their survival. This is a new purpose-built home, which was provided by Dr. Barnardo's to mark their centenary year. It can accommodate 11 boys and girls, who will attend the local school and be under the supervision of the diabetic clinic of the Royal Edinburgh Hospital for Sick Children.

Need for “Cruachan”

In 1958 P. Henderson (personal communication) suggested that about 140 diabetic children in England and Wales needed a special boarding-home. Subsequently, in 1962 a survey in Scotland showed that a home was needed for 10 to 20 children. They could not be kept in hospital, though they often

needed readmission. Resident schools for the physically handicapped hesitated to take them because they were often too robust to live closely in the company of those who were weak or had locomotor difficulties. Residential schools for maladjusted children hesitated to take the not insignificant number who were emotionally disturbed because the staff was reluctant to undertake the care of their diabetes. While possible answers were being sought to this problem the children suffered—and one boy had such severe recurrent hypoglycaemia that he became ineducable.

The situation was relieved when Dr. Barnardo's began to admit diabetic children to a residential school for the physically handicapped. Though this protected children from the harmful effects of inadequate homes or provided adequate diabetic control for those whose instability defeated attentive and worried parents, the children seemed to be out of context. Their natural place was in the healthy competitive atmosphere of a normal school and not in the more sheltered one of a residential school for the disabled. They needed a real home where—with diabetes well controlled—they could work, play, and enjoy life as normal children.

Training for Independence

The principal aim of all concerned with the “Cruachan” project is to make unnecessary the long-term admission there of many children. In 1950–2 the Advisory Council on Education in Scotland recommended that “those children who are diagnosed as diabetic should attend a residential school for a period and where conditions are favourable should return to home and day-school.” Henderson (1958) said of the

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