MORBIDITY IN A COUNTRY PRACTICE

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THIS paper describes a study into the morbidity of a semi-rural or country practice in Scotland for the year 1962. The author has been in practice for 11 years in the small country town of Lochwinnoch in the south-west of Scotland. The practice consists of 2,627 National Health patients, the bulk of whom live in Lochwinnoch and within about a mile radius of the surgery. About 500 patients live outwith a radius of three miles, a few being as far removed as eight miles. The practice is run with ten surgeries a week, plus a weekly afternoon antenatal clinic and a weekly mid-morning baby clinic. The figures of the attendance at these clinics are not included in the survey. The author is now in partnership with a doctor practising in a neighbouring town some miles distant, but the partner's figures are not included in this paper, for, while the practices do interdigitate to some extent, they can be and are run as separate entities as far as administration is concerned.

The town of Lochwinnoch has a few local industries, furniture, aerated water, a silk factory, a cooperage and there is a small barytes mine nearby. There is quite a flourishing farming community, but the bulk of employment is obtained in the adjacent industrial centres of Linwood, Paisley and Kilbirnie. The majority of the population is Protestant but there is a large Roman Catholic minority and a small Evangelist sect.

The population is mainly artisan, the men being mainly skilled and semi-skilled craftsmen, while there are quite a few families of the senior executive, managerial and land owner class. There is virtually no poverty and little unemployment. Community life is ebbing away somewhat as a result of the ease of access to the larger centres of entertainment, but many local pursuits and entertainments persist. On the whole it is a fairly happy and prosperous community.

The nearest general hospital is ten miles away in Paisley where the general practitioner has access to the x-ray department and laboratory. He is also given much co-operation by the hospital

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staff. The maternity hospital is some seven miles removed, but it is relatively small and has to cater for an enormous urban and country area. As a result of bed shortage most of the midwifery is domiciliary and this apparently is to the liking of the patients. The author attends every confinement conducted at home.

The climate must be admitted to be rather damp with an annual rainfall of about 47 inches, and fog in the winter months is depressingly frequent.

Method

The figures obtained in this survey were made possible by the use of two registers: the age-sex register and the disease register (Practice index—sometimes called the college "E" Book (*J. Coll. gen. Practit., 1963*)).

The author's register consists of a foolscap looseleaf binder (Twinlock 78Rx) capable of holding 200 sheets with manilla dividers. Each page is devoted to one year. The males occupying the left hand page and the females, the right. The top of the page is boldly labelled with the appropriate year, and the names and addresses with the actual dates of birth of all those born in that year are tabulated below. The register is marked down from 1962 through the year to 1872. The last two pages being marked 1872 and before.

All the cards in the practice are then scrutinized and the dates of birth of as many of them as possible are established and duly entered in the register—males on the left and females on the right. We had to obtain about 40 per cent of the dates of birth by visiting, phoning or waiting until the patient came to consult.

Having registered every patient with a medical record card in the age-sex register, I was then able to make extractions from the register, giving the number of patients in each age group. The register was itself divided into sections of five years by the manilla dividers, so that all subsequent figures were given in five-year age groups. The five-year extraction figures for this practice are given in table 1A and a graph using this extraction is shown in figure 1: the figures on the horizontal or baseline represent the actual number of patients and not percentages as the figures in this practice lend themselves very well to the size of the graphs. The vertical is marked off at intervals of five years, so that each vertical step will mark off all the patients in that five-year age group.

The incidence of morbidy in the practice was established by the use of a Disease Register (or Practice Index or College "E" Book). I found that I had to use a larger file than that originally described to suit my purpose. I found that the Twinlock Rapid Ref. R.R.I admirable for my index, in that it contained sufficient rings to accommodate the disease record cards and that the rings were sufficiently large to take the large numbers that were to be involved.

I selected from the International Classification of Disease published by the World Health Organization 437 different conditions which I thought I was likely to encounter. I condensed the International Classification into 12 sections thus:

(1) Infective and parasitic diseases.
(2) Neoplasms—malignant and simple.
(3) Allergic, endocrine, metabolic and nutritional including diseases of the blood-forming organ.
(4) Psychoneurotic.
(5) Diseases of the central nervous system.
(6) Diseases of the circulatory system.
(7) Diseases of the respiratory system.
(8) Diseases of the digestive and urinary systems.
(9) Genital disorders and childbirth.
(10) Diseases of skin, bones, and joints, muscle and connective tissue.
(11) Congenital malformation and infancy diseases.
(12) Accidents, violence and poisoning.

The R.R. binder is then divided up into 12 sections using the manilla dividing sheets and on the reverse side of these are printed the names and code numbers of the selected diseases appropriate to that section. Each dividing sheet is appropriately indexed with identifying tags.

In between each pair of dividing sheets are placed the individual disease record cards, as many as 30 layers to each section. I had these cards ruled and divided vertically into seven columns. The reverse side of the card is similarly ruled to provide the same spacing when the card is reversed. A facsimile of the card is shown below. The card will accommodate 20 names. The 1st column is for the date that the patient is seen. The 2nd column is for the name, the 3rd for the date of birth, the 4th for the address, the 5th for the International Classification Code Number of the disease, the 6th for the numbers of episodes of the disease or for other remarks such as reference to hospital. The 7th column is for cross indexing with other diseases.

3.1.62	John Meiklem	22.5.00	Glenshian	444	Hosp.	420 540
4.1.62	George Calvert	26.6.99	Bowers	445		440
16.1.62	James Weir	2.3.91	95 High St.	444		260
16.1.62	William Stoner	20.6.01	Arcadia	444		420
16.1.62	William McCoy	31.3.88	29 Braehead	444		
29.1.62	James McGinigal	1.2.06	41 Braehead	444		
28.1.62	William Henderson	19.7.93	23 Gates Rd.	444		
3.2.62	James Moffett	5.8.85	15 Main St.	444		387
10.2.62	John Barrowman	6.10.01	Netherton	444		420
8·3.62	William McNally	17.7.89	84 Calder St.	444		

Hypertension: (1) 444 Benign; (2) 445 Malignant; (3) 446 Arteriolar nephrosclerosis

The bottom of the card has space for the name of the diseases or disease applicable to it. As many as four diseases could be placed on one card if one anticipated not seeing many patients with the four conditions. For common ailments, one card was devoted to one condition.

The cards were then entered in the binder in the appropriate section overlapping each other so that the name of the diseases applicable to the card is always shown. The correct card can be readily selected at a glance.

In use, the binder is carried on visits along with the other requirements of practice and was on the desk for all consultations in surgery. Each patient with a disease was duly recorded in the register, but only once for each disease. In

my practice, I did not record in the register the number of occasions that the patient was seen for the condition, although this could be ascertained from the medical record card, which was used in conjunction with the register. The register, in fact, does serve as an index to the medical record cards. Male patients were entered on the facing side of the card and the females on the reverse side. Children under 15 years were entered in the same way only on cards underlying the adult cards and were identified by means of a metal index tag attached to the card.

TABLE IA
EXTRACT OF AGE-SEX REGISTER

5-year groups	*Total*	*Male*	*Female*	*Progressive extract*	*Total*	*Male*	*Female*
0– 5	211	104	107	0– 5	211	104	107
5–10	221	115	106	0–10	432	219	213
10–15	221	114	107	0–15	653	333	320
15–20	183	91	92	0–20	836	424	412
20–25	149	69	80	0–25	985	493	492
25–30	155	81	74	0–30	1140	574	566
30–35	174	89	85	0–35	1314	663	651
35–40	177	83	94	0–40	1491	746	745
40–45	190	97	93	0–45	1681	843	838
45–50	165	77	88	0–50	1846	920	926
50–55	158	77	81	0–55	2004	997	1007
55–60	172	85	87	0–60	2176	1082	1094
60–65	138	58	80	0–65	2314	1140	1174
65–70	103	41	62	0–70	2417	1181	1236
70–75	84	37	47	0–75	2501	1218	1283
75–80	64	35	29	0–80	2565	1253	1312
80–85	34	16	18	0–85	2599	1269	1330
85–90	21	6	15	0–90	2620	1275	1345
90–100	7	2	5	0–100	2627	1277	1350

There were certain difficulties to be overcome in the use of the register. Sometimes no concrete diagnosis could be made, in which case no entry was made. Certain arbitary standards of diagnosis were called for. For example—the child with the frequent unproductive cough with absent signs was classed as a case of tracheitis. Persons with multiple conditions were usually recorded with only the condition which was giving rise to symptoms at that time, but where one condition was a direct complication of another underlying condition both the symptomatic condition and the primary would be recorded. For example—a patient presenting with a gangrenous toe and found to have diabetes—both conditions would be recorded.

I also entered all patients who had had malignant disease even if these had been apparently successfully operated upon in the past. I did this simply to get an overall idea of the incidence of malignancy in my practice which seemed to be higher than the usually quoted figures.

Patients with chronic conditions, e.g. chronic bronchitis, who consulted me several times in the year for the same condition were recorded only once, but if the patient had three separate episodes of acute bronchitis he was recorded three times.

Using the disease register in 1961, I found that I was able to tell very quickly how many cases of any particular disease I had had in the year. I found since that a rapid assessment of the whole morbidity can be made.

In my practice 1962 was a fairly typical year. There were no particular epidemics during the year, but the number of respiratory infections were somewhat higher than in the previous year.

The findings

Consultations

The number of consultations during the year was 18,345 of which 12,019 were surgery consultations, and 6,326 were home visits. This represents a ratio of 1.9 to 1 of surgery consultations to home visits, which I think is fairly typical for this type of practice. The number of patients registered with me in the practice in December 1962 was 2,627.

The number of consultations per head of the population at risk therefore was seven. This is at upper level of Stephen Taylor's range of 3.5 to 9.6 (1954).

The average number of consultations per day was 66 based on a 5½-day week. This figure is slightly erroneous, as there were always quite a few patients seen on Sundays. In fact, in the year there were 259 Sunday visits, or an average of five per Sunday. The highest number of Sunday visits in the year was 15 and there were only three Sundays in which there were no visits at all.

The greatest number of visits on any day was 44 in May and the greatest number attending a surgery was 43 in March. January, February and March, April, November and December were the busiest months of the year. The quietest months were June and July. The greatest number of visits to one patient was 238 in six months. (A carcinoma of the colon.)

Morbidity

For the purpose of description, I am using the term ' disease incident ', by which I mean, one person has one episode of acute tonsillitis, it is referred to as a ' disease incident '. If he is recorded as having acute tonsillitis followed by acute nephritis, then there are two disease incidents. If the patient is seen at different occasions for rheumatoid arthritis, the recording is still that of one disease incident.

The total number of disease incidents was	3561
The overall disease incidence per head of the population at risk was	1.35
The overall disease incidence per male patient was	1.24
The overall disease incidence per female patient was	1.44

Each disease incident required an average of 5.17 consultations. The breakdown of the total morbidity is shown in table I.

TABLE I

MORBIDITY BY DISEASE GROUPS

	Number	*Percentage*
Infective and parasitic diseases	344	9.7
Simple neoplasms	16	0.5
Malignant neoplasms	42	1.2
Allergic, metabolic, endocrine and nutritional	209	5.9
Psychoneurotic	120	3.3
Diseases of central nervous system	357	10.0
Diseases of cardiovascular system	230	6.5
Diseases of respiratory system	960	27.0
Diseases of digestive and urinary system ..	278	7.8
Genital disorders and childbirth	130	33.6
Disorders of skin, bones, joints and muscles	562	15.8
Congenital malformations and diseases of infancy	5	0.1
Accidents, violence and poisonings	308	8.6

The percentage incidence of the various groups of diseases compare with R. P. C. Handfield Jones' (1959) analysis into Morbidity in a country practice. Although I list a considerably higher incidence of neoplasms and slightly higher incidence of respiratory disorders, my total morbidity of 1.35 is higher than that given by Handfield Jones of 1.25.

Taking the sections individually, I have shown them graphically plotted against the background of the age-sex graph already shown. As in the case of the age-sex graph, I have used the actual figures which occurred in my practice and not a percentage.

Infective and parasitic diseases. These are represented in figure 2 and table II. As would be expected, the bulk of the cases are in the younger age groups. The highest proportion being in the under-five age group. Infective gastroenteritis, dysentery and herpes zoster account for the majority of the adult cases.

The actual figures for the cases seen are shown in table II.

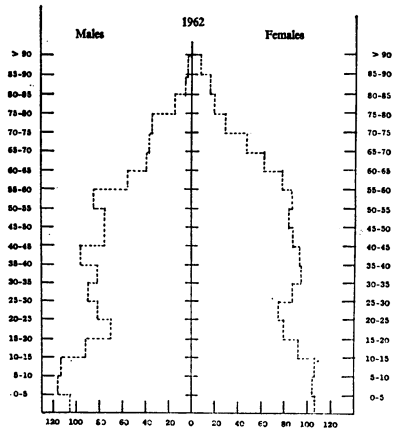

Figure 1. Age/sex distribution of patients

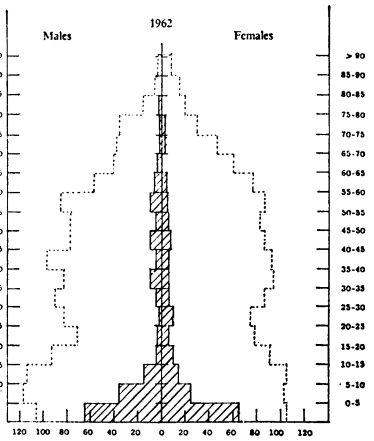

Figure 2. Frequency of infection and parasitic diseases

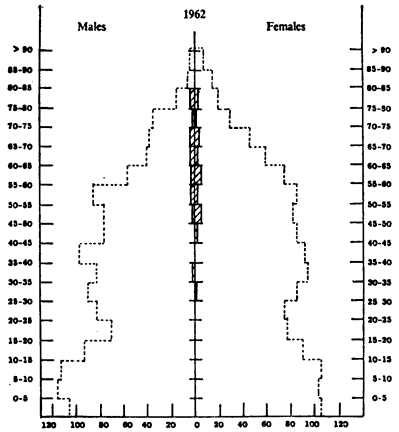

Figure 3. Frequency of neoplasms

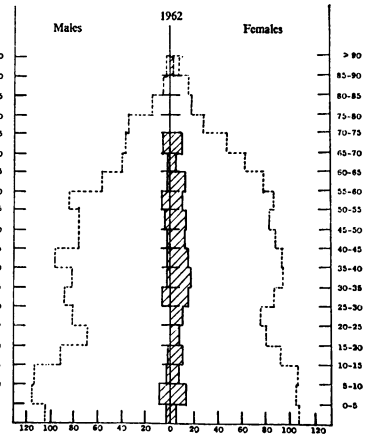

Figure 4. Frequency of allergic, nutritional and metabolic disease by age

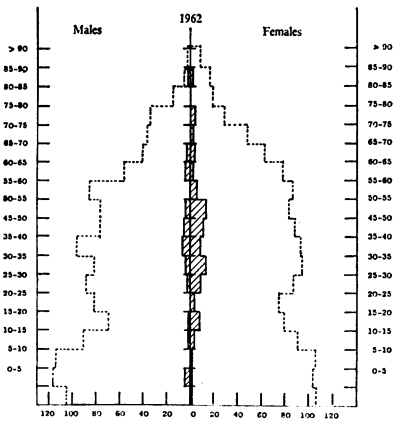

Figure 5. The incidence of psychotic, psychoneurotic and other mental illnesses

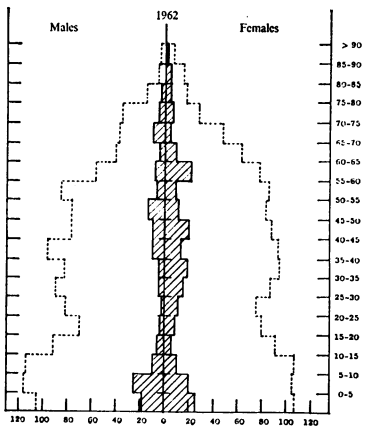

Figure 6. Diseases of the central nervous system

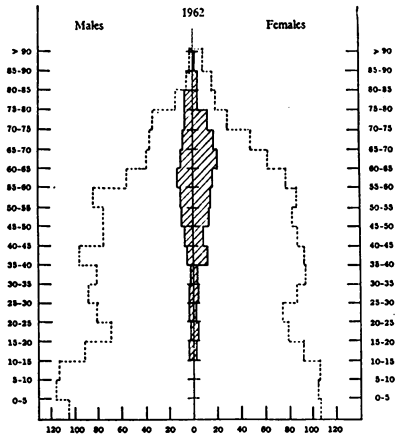

Figure 7. Diseases of the cardiovascular system

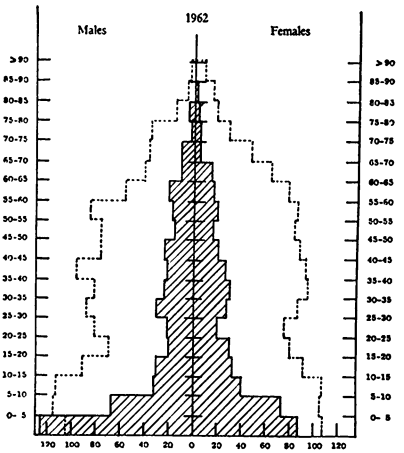

Figure 8. Diseases of the respiratory system

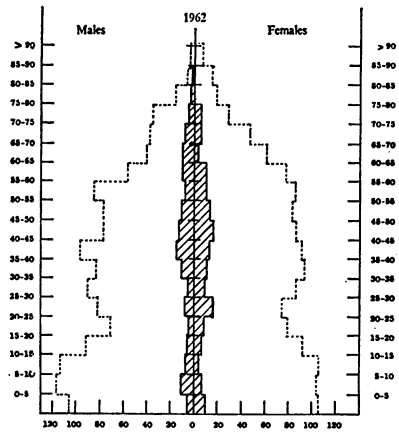

Figure 9. Diseases of the digestive and urinary system

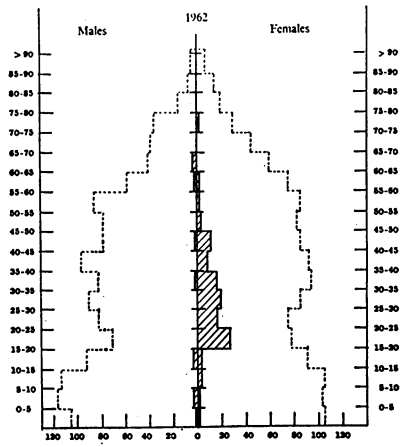

Figure 10. Genital and childbirth

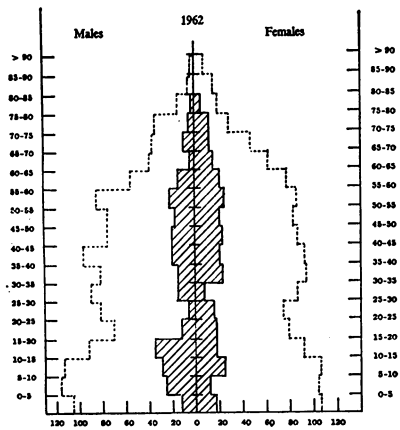

Figure 11. Disorders of skin, bones, joints, muscles and connective tissue

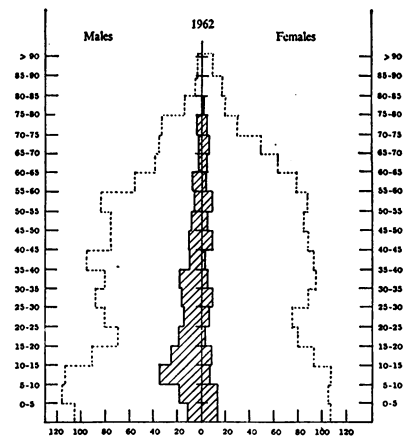

Figure 12. Accident, violence and poisoning

TABLE II
TOTAL OF INFECTIVE AND PARASITIC DISEASES

	Adults		*Children*		*Total*
	M.	*F.*	*M.*	*F.*	
Tuberculosis	5	5	—	—	10
Infective enteritis and dysentery	29	30	39	26	124
Scarlet fever	1	—	—	—	1
Vincent's infection ..	3	—	3	1	7
Late effects of polio-myelitis	1	—	1	1	3
Measles	—	1	14	23	38
Rubella	3	4	9	8	24
Herpes zoster	6	8	—	1	15
Chicken-pox	1	1	27	24	53
Mumps	—	—	2	1	3
Infective hepatitis ..	5	3	—	—	8
Other viruses	1	1	—	2	4
Infectious mononucleosis	—	—	2	1	3
Worms (round and thread)	1	2	11	9	23
Fungus infections ..	10	8	2	2	22
Scabies	—	4	—	2	6
Totals	66	67	110	101	344

The use of the disease register is of help in noting the spread of infectious diseases.

I had had no measles in the village in 1962, until 10 December. On that day a small boy of five was noted to have the disease and it was learned with regret that he had been to a children's party the day before, i.e. 9 December. The next case was on the 20th and was a girl with Koplik's spots. Seven more girls developed measles on the 21st, four more on the 22nd and two on the 24th. Three boys developed measles on the 23rd and two on the 24th. All the children had been at the same party. The one small boy had managed to infect 19 contemporaries at the one party—mostly girls.

Neoplasms. So far I have made no mention of observer bias. It has been said that a doctor will see more cases of those conditions which interest him most. I may have been guilty of this unwittingly. Blood diseases is my special interest, so I may have diagnosed more disorders of the blood than other observers, although I do not think my figures are exceptionally high. With malignant neoplasms, however, I have recorded every proved case of malignancy that I encountered in 1962. Even a patient who had had an apparently successful mastectomy performed 10 years ago was entered as a carcinoma of breast. My figures, therefore, for malignant neoplasms are higher than those given in other surveys. I do not know how other observers worked in this respect.

The incidence of malignant neoplasms related to age groupings is shown in figure 3 and the actual details in table III.

There were 16 simple neoplasms of all types. The youngest patient with malignant disease in 1962 was a female of 34 with a breast carcinoma. The youngest male was aged 39 with abronchial carcinoma. The overall incidence of malignancy in the practice is 1 in 62.5. For those patients over 30, the incidence is 1 in 35.4, and for those over 50, it is 1 in 20. There was a relatively high consultation rate per patient in this section, one patient requiring 238 visits in the course of six months until she died.

TABLE III
INCIDENCE OF NEOPLASMS

Site	*Males*	*Females*	*Total*
Tongue ..	1	—	1
Mouth (lip)	1	—	1
Colon ..	2	4	6
Rectum ..	2	2	4
Pancreas ..	1	—	1
Bronchus and lung	5	—	5
Prostate ..	1	—	1
Breast ..	—	11	11
Uterus ..	—	3	3
Ovary ..	—	2	2
Skin ..	4	2	6
Brain ..	—	1	1
Totals ..	17	25	42

Allergic, nutritional, endocrine and metabolic diseases (figure 4, table IV). The 14 diabetics were all adult, four male and ten female. There was only one severe case, a young male who required referral to hospital outpatients department. All the rest were relatively mild and were controlled by supervision and treatment in the practice.

This incidence of diabetes would appear to be low being only 5.3 per thousand of the population at risk, whereas Harkness (1962), gave an expected national incidence of 12.0 per thousand.

There were 8 patients with megaloblastic anaemia (7 of addisonian type and one folic acid deficiency, probably of an absorption error). Two of the females were over 90 years old and had been on treatment for quite a number of years, evidencing the improved prognosis in this condition in more recent years. One of these old ladies had a daughter in the practice suffering from the same condition.

Psychotic, psychoneurotic and other mental illness (figure 5 table V). I found a certain difficulty of classification in this group of disease, and while I had quite a wide range of conditions in the disease register such as obsessive, compulsive reaction (International Classification Code No. 313) and neurotic depressive reaction (314), there would seem to be quite an overlap of definition. I have, therefore, tabulated the diseases in table V in somewhat broader groups.

TABLE IV

ALLERGIC, NUTRITIONAL, ENDOCRINE AND METABOLIC DISEASES

Disease	*Adults*		*Children*		*Total*
	M.	*F.*	*M.*	*F.*	
Hay fever	3	10	2	—	15
Asthma	7	24	3	3	37
Urticaria	3	16	4	6	29
Allergic eczema	6	6	3	3	18
Other allergies	1	6	—	2	9
Goitre and thyrotoxicosis	1	6	—	—	7
Myxoedema	2	6	—	—	8
Diabetes mellitus.. ..	4	10	—	—	14
Other ductless gland disorders	3	2	—	—	5
Nutrition and obesity ..	4	24	—	1	29
Gout	—	2	—	—	2
Megaloblastic anaemia ..	2	6	—	—	8
Iron deficiency anaemia ..	2	23	1	1	27
Purpura	—	1	—	—	1
Total	38	142	13	16	209

TABLE V

PSYCHOTIC, PSYCHONEUROTIC AND OTHER MENTAL ILLNESS

Disease	*Adults*		*Children*		*Total*
	M.	*F.*	*M.*	*F.*	
Schizophrenia	2*	—	—	—	2
Manic depressive ..	—	3	—	—	3
Melancholia and paranoia	1	6	—	—	7
Alcoholic psychosis ..	1	1	—	—	2
Anxiety state	11	39	—	—	50
Psychoneurosis	11	33	—	—	44
Psychopathic personality	1	—	—	—	1
Alcoholism	2	—	—	—	2
Mental deficiency ..	2	1	3	3	9
Totals	31	83	3	3	120

*One of the schizophrenics was a case of Huntingdon's chorea.

Of the total of 120, I had to certify seven of the patients during the year. While seven others required inpatient hospital treatment for their condition.

In contrast to the frequently stated high incidence of psychoneurotic illness in general practice, I found a low overall incidence,

3.35 per cent of the total disease incidence. This figure is comparable to that of Handfield Jones (1959) who gave the incidence of 3.7 per cent in a similar survey.

It must be confessed that while the disease incidence of mental illness is low, the number of consultations with patients suffering from psychoneurotic disorders is disproportionately high. One tends to see the patient frequently and they take up quite a lot of time, and before I found the disease incidence I thought it was much higher than it has proved to be. No doubt some workers with a special interest in psychiatry will have a higher incidence than I have. If I had a patient who complained of a symptom which had an organic cause to explain it, that organic cause was listed as his disease and the psychoneurotic overlay which may indeed have been present and therefore contributing heavily towards his total degree of disability was not listed. Some observers might work the other way and I may well have a negative bias against psychoneurotic illness.

Diseases of the central nervous system (figure 6, table VI). I have again condensed the table from the original number of conditions in the index.

Otitis media and minor infections constitute the bulk of the central nervous system diseases of childhood.

The three muscular dystrophies are all members of the same family and are rather interesting in that they have a dystrophy that I have not seen described. It affects the small muscles of the hand and the pectoral head of the pectoralis major, of the two males affected one has a duodenal ulcer and the other is a mental defective. There is one unaffected male and five unaffected females. A picture of the father in the house shows his hand well and it is evident that he suffered from the same dystrophy.

The four cases of deaf mutism placed in this category are all members of one family but the condition is really a primary metabolic upset associated with a peroxidase deficiency and a goitre.

One group of omissions are those patients who attended for the treatment of aural wax. They were treated but not recorded in the index.

Diseases of the cardiovascular system (figure 7, table VII). The figure presents the picture one would expect. The inclusion of varicose veins has increased the number of females.

The youngest patient with rheumatic valvular disease was 18, while the oldest had reached the age of 70. Only one patient was submitted for mitral valvotomy and this was a failure, the patient dying in 1963.

Almost twice as many females as males were seen for symptoms of hypertension. Some women had had very severe degrees of hypertension and one of them had a diastolic of 170 some ten years previously when she was a young woman, and had been under

continuous treatment since. Of the 34 females seen with hypertension in 1962, all were alive in December 1963, but of the 16 males so treated, three are now dead. This supports the generally accepted view that women resist cardiovascular and other stress diseases better than men.

The 32 cases of coronary artery disease included coronary thrombosis and those with coronary insufficiency and angina.

TABLE VI
DISEASES OF THE CENTRAL NERVOUS SYSTEM

Disease	*Adults*		*Children*		*Total*
	M.	*F.*	*M.*	*F.*	
Cerebrovascular accident	7	8	—	—	15
Disseminated sclerosis	1	—	—	—	1
Paralysis agitans and spastics	2	3	—	—	5
Epilepsy	3	4	1	1	9
Migraine	3	18	—	2	23
Muscular dystrophy	2	1	—	—	3
Brachial neuritis	3	7	—	—	10
Sciatica	4	9	—	—	13
Other neuritis	8	18	—	—	26
Facial palsy and trigeminal neuralgia	1	3	—	—	4
Conjunctivitis, hordeolum, blepharitis, keratitis	21	32	15	18	86
Refractive errors	1	3	—	—	4
Corneal ulcer and opacity	3	1	—	—	4
Strabismus	—	—	2	—	2
Cataract	2	2	—	—	4
Glaucoma	5	8	—	—	13
Otitis externa	9	9	—	—	18
Otitis media	8	21	37	32	98
Ménière's disease	5	6	—	—	11
Deaf mutism	2	2	—	—	4
Other deafness	5	3	—	—	8
Totals	95	158	55	53	361

Diseases of the respiratory system (figure 8, table VIII). This section constitutes by far the highest proportion of disease incidents (26.75 of the total) but this does not necessarily mean that it has the highest number of consultations. Many of the conditions in this category necessitated only one consultation, whereas as stated before one patient with a carcinoma required 238 visits for the one disease incident.

From the figure, it can be seen, as one would expect, that children under ten are at the greatest risk to respiratory diseases. While

TABLE VII

DISEASES OF THE CARDIOVASCULAR SYSTEM

Diseases	*Adults*		*Children*		*Total*
	M.	*F.*	*M.*	*F.*	
Rheumatic mitral valve disease	4	3	—	—	7
Rheumatic aortic valve disease	3	2	—	—	5
Coronary artery disease ..	19	13	—	—	32
Other myocardial degeneration	8	10	—	—	18
Functional heart disease ..	1	1	—	—	2
Hypertensive heart disease	6	5	—	—	11
Hypertension	16	34	—	—	50
Arteriosclerosis	3	4	—	—	7
Peripheral vascular disease	6	8	—	—	14
Varicose veins	11	36	—	—	47
Haemorrhoids	12	12	—	—	24
Phlebitis	2	9	—	—	11
Diseases of lymphatics ..	—	1	—	—	1
Pulmonary embolism ..	—	1	—	—	1
Totals	91	139	—	—	230

TABLE VIII

DISEASES OF THE RESPIRATORY SYSTEM

Disease	*Adults*		*Children*		*Total*
	M.	*F.*	*M.*	*F.*	
Nasopharyngitis ..	18	36	10	10	74
Acute sinusitis	25	31	3	4	63
Acute tonsillitis	24	31	36	44	135
Acute laryngitis and tracheitis	57	75	106	94	332
Infections of multiple sites	12	33	16	20	81
Influenza	49	25	12	5	91
Lobar pneumonia ..	1	1	—	—	2
Bronchopneumonia ..	1	2	2	2	7
Acute bronchitis	29	28	28	12	97
Chronic bronchitis ..	30	10	—	—	40
Tonsillar hypertrophy ..	1	1	9	5	16
Chronic sinusitis	2	5	—	—	7
Nasal polyps	2	2	—	—	4
Pleurisy	2	3	—	—	5
Bronchiectasis	3	1	—	—	4
Totals	256	284	222	196	958

there are more incidents than patients for male children under five (129 to 104).

Chronic bronchitis is relatively common—40 cases or 15.2 per thousand of the population in spite of the practice being in a semi-rural area. This can be explained by the climatic conditions and the fact that quite a high proportion of the population travel to work in the industrial belt.

The high incidence of laryngitis and tracheitis may be due to the difficulty in classifying the child with the unproductive cough and the absence of clinical signs. Many of these were entered as acute laryngitis and tracheitis.

Diseases of the digestive and urinary systems (figure 9, table IX).

The figures for digestive and urinary conditions are rather what one would expect. Six gastric ulcers, female predominating, 21 duodenal ulcers, males predominating and two gastrojejunal ulcers. All these patients had active ulcers during the year. The ulcer rate in the practice is 11 per thousand of the population. All the tabulated cases of urinary calculi actually passed calculi or had radiographic evidence of them during the year.

TABLE IX

DISEASES OF THE DIGESTIVE AND URINARY SYSTEMS

Diseases	*Adults*		*Children*		*Total*
	M.	*F.*	*M.*	*F.*	
Dental and oral sepsis ..	11	13	8	11	43
Diseases of oesophagus ..	1	2	—	—	3
Gastric ulcer	2	4	—	—	6
Duodenal ulcer	17	4	—	—	21
Gastrojejunal ulcer ..	2	—	—	—	2
Gastritis	12	4	3	2	21
Disorders of stomach function	8	23	—	—	31
Appendicitis	3	4	1	1	9
Hernia	14	12	—	1	27
Chronic enteritis ..	3	3	—	—	6
Ulcerative colitis ..	1	—	—	—	1
Functional colon ..	5	4	6	2	17
Hepatic cirrhosis ..	2	—	—	—	2
Cholelithiasis	—	8	—	—	8
Cholecystitis	—	6	—	—	6
Acute nephritis	1	—	—	—	1
Chronic nephritis ..	—	1	—	—	1
Infections of kidney ..	1	8	—	—	9
Urinary calculi	3	8	—	—	11
Cystitis	8	30	3	3	44
Urethritis	1	—	1	—	2
Stricture	1	—	—	—	1
Totals	96	134	22	20	272

Genital and childbirth (figure 10, table X). The number of home confinements (23) was well below the usual annual level, which is normally over 30 per annum. The number of deliveries at home which was complicated, was high in relation to the total number. The complications were: three with inertia, one required forceps, one had twins, the second of which was a transverse lie and required internal version of breech for delivery, while four had perineal lacerations only. The highest incidence for childbirth and genital disorders was in the age group of 20-25, there being 27 cases among the 80 possible females at risk, an incidence of 34 per cent.

TABLE X
GENITAL AND CHILDBIRTH

Condition	*Adults*		*Children*		*Total*
	M.	*F.*	*M.*	*F.*	
Prostatic disease	1	—	—	—	1
Hydrocele	3	—	2	—	5
Phimosis	2	—	2	—	4
Mastitis	—	7	—	—	7
Infections of female genital tract	—	23	—	—	23
Uterine prolapse	—	10	—	—	10
Uterine malposition ..	—	6	—	—	6
Menstrual disorders ..	—	39	—	—	39
Menopausal disorders ..	—	15	—	—	15
Disorders of pregnancy ..	—	3	—	—	3
Uncomplicated home delivery	—	14	—	—	14
Complicated home delivery	—	9	—	—	9
Abortion	—	5	—	—	5
Female sterility	—	2	—	—	2
Totals	6	133	4	—	143

Disorders affecting skin, bones, joints, muscles and connective tissue (figure 11, table XI). Table XI speaks for itself and requires little in the way of explanation.

Under the hypertrophic and atrophic dermatoses, I have four patients—all female, with localized lupus erythematosis. This seems to have replaced lupus vulgaris as the common lupus of which there is only one, non-active, elderly case in the practice.

Of the 22 psoriasis cases, four were in one family—a father, two sons and a daughter. Other examples of the familial nature of this disease were exemplified by two other cases of father and son, one mother and daughter example and one uncle and niece relationship.

Congenital malformations and infancy diseases. I encountered only five of these conditions during the course of the year. They were

a congenital heart, two hypospadias (brothers), one metacarpal abnormality and an Apert's syndrome. Only one of these was born in 1962 but all were under corrective treatment.

TABLE XI

DISORDERS AFFECTING SKIN, BONES, JOINTS, MUSCLES AND CONNECTIVE TISSUE

Disease	*Adults*		*Children*		*Total*
	M.	*F.*	*M.*	*F.*	
Septic conditions (abscess and whitlow)	47	37	21	7	112
Impetigo	1	2	12	6	21
Infectious warts	—	8	4	—	12
Molluscum contagiosum	—	—	3	7	10
Seborrhoeic dermatitis ..	5	5	1	2	13
Seborrhoeic eczema ..	4	6	1	3	14
Occupational dermatitis ..	13	9	—	—	22
Other dermatitis ..	9	27	10	8	54
Psoriasis	13	6	3	—	22
Pruritis and allied conditions	5	11	—	—	16
Hypertrophic and atrophic dermatitis ..	—	9	2	—	11
Disorders of nails and sebaceous glands ..	4	5	2	1	12
Chronic skin ulcer ..	1	6	—	—	7
Acute pyogenic arthritis ..	1	—	—	—	1
Acute non-pyogenic arthritis	—	3	—	—	3
Rheumatoid arthritis ..	1	6	—	—	7
Osteoarthritis	23	40	—	—	63
Muscular rheumatism ..	27	27	—	—	54
Osteomyelitis	1	—	—	—	1
Osteochondritis	—	2	1	2	5
Internal derangement of knee	6	1	—	—	7
Prolapsed I.V. disc ..	7	5	—	—	12
Affections of sacro-iliac joint	18	21	—	—	39
Ankylosis of joint ..	1	2	—	—	3
Bunion	—	5	—	—	5
Synovitis and bursitis ..	11	9	1	1	22
Tendinitis	2	5	—	—	7
Spinal curvature ..	2	4	—	—	6
Other foot deformities ..	1	1	—	—	2
Totals	203	261	61	37	562

Accidents, violence and poisoning (figure 12, table XII). This is the only section in which the adult male consultation rate is higher than that of the adult female.

TABLE XII
ACCIDENTS, VIOLENCE AND POISONING

Condition	Adults		Children		Total
	M.	F.	M.	F.	
Fractures	27	11	3	3	44
Dislocations	3	—	—	—	3
Sprains and strains ..	46	36	11	10	103
Other injuries, wounds etc.	62	31	39	20	152
Poisonings	1	1	2	—	4
Asphyxia	—	1	1	—	2
Totals	139	80	56	33	308

This section also has the highest hospital referral rate. Thirty-eight of the 44 fractures were referred to hospital either for out-patient treatment or for admission. One of the dislocations was also referred to hospital. It is a pointer to the rural nature of the practice that none of the other injuries, wounds, lacerations, etc., was referred to hospital for treatment. All wound surgery is treated at the surgery—sutures, wound excision, etc.

Disease incidence and morbidity

The disease incidence per patient is shown in figure 13. The incidence is broken down into five-year age groups and the differing sex incidence is portrayed.

The overall disease incidence per patient per year was	1.35
The disease incidence per male patient was	1.24
The disease incidence per female patient was	1.44

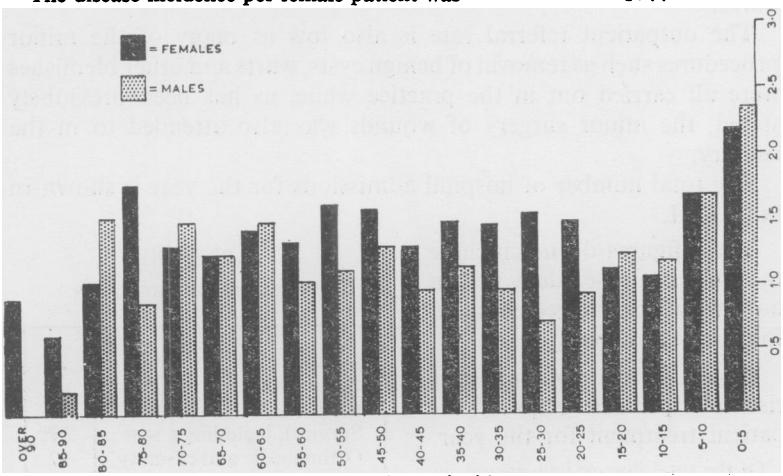

Figure 13. Disease incidence

As stated previously each disease required on average 5.17 consultations. From figure 13, it will be seen that, as would be

expected, the highest incidence was among children under five and the next among the 5–10 age group. Thereafter, the incidence is fairly constant particularly among the female population. The incidence for the females is constantly considerably higher than for the males from the ages of 20–60.

What is surprising is the low incidence for the patients over 85. The figure happens to be the smallest of the whole population but of course, the statistical significance of this is doubtful since there were only 28 patients over the age of 85. Furthermore the elderly tend to be relatively uncomplaining and are often partially forgotten by their relatives.

Hospital reference

The hospital referral rate for this practice is, I imagine lower than that of an urban practice. The patients on the whole are not ' hospital minded '. They are rather suspicious of hospital and the investigations which hospitals are liable to carry out. Many of them have the old-fashioned idea that hospitals are places where people are sent to die or that they are being sent to hospital because they have something very seriously wrong with them.

As a result only those who cannot possibly be dealt with competently at home, are admitted to hospital. As stated previously, the population has good housing and there are few families whose social circumstances do not allow for the treatment of the sick at home, even for long periods. I must say that on the whole the relatives of patients look after their sick very well. In this, they are helped by the attention given them by an able, competent and helpful district nurse.

The outpatient referral rate is also low as many of the minor procedures such as removal of benign cysts, warts and other blemishes were all carried out in the practice while, as has been previously stated, the minor surgery of wounds was also attended to in the surgery.

The total number of hospital admissions for the year is shown in table XIII.

These figures do not include the obstetric cases delivered in hospital which had been booked for hospital delivery.

Of the patient population at risk 3.67 per cent required inpatient treatment for the year.

Of the total disease incidence 2.77 per cent required inpatient treatment.

Of the total consultations 0.54 per cent required inpatient treatment.

TABLE XIII

TOTAL HOSPITAL ADMISSION

General medical	16
Sanatorium	3
Mental	14
Surgical, including E.N.T. ..	37
Orthopaedic and casualty..	17
Gynaecological	12
Total	99

The outpatient referral rate is shown in table XIV.

TABLE XIV
OUTPATIENT REFERRAL RATE

Medical, including ophthalmic, psychiatric, and dermatological ..	36
Surgical and E.N.T.	40
Casualty	25
Total	101

Of the patient population at risk 3.82 per cent required reference to an outpatient department.

Of the total disease incidence 2.82 per cent required outpatient referral and of the total consultations 0.55 per cent required outpatient referral.

Pathology reference

In this area, the general practitioner is given free access to laboratory services. In the urban practice such facilities are very helpful and time saving. However, in this area where such service necessitates the transport of the specimen to the laboratory, invariably by the doctor himself, the inconvenience and time taken mitigates against the use of the service to its full extent. Having a particular interest in blood diseases I do all the routine blood examination myself, including haemoglobin and haematocrit estimations, blood counts and films. These examinations can be done almost as quickly as the journeys to the laboratory and can certainly be performed at a more convenient time than that dictated by laboratory reception hours.

The total number of specimens sent to the pathology laboratories was 17, i.e. 0·65 per cent of the patients or 0.48 per cent of disease incidence. Of these there were nine stools, four urines and four bloods for serological examinations. There were in addition to the above figures an unknown number of urines sent for biological pregnancy tests of which I am unable to give accurate figures. There cannot, however, have been many of these in the year—three or four at most.

Mortality

During the year there were 20 deaths in the practice.

Discussion

The paper describes a study into the morbidity of a semi-rural practice in Scotland for the year 1962. An attempt has been made to show graphically the incidence of disease in relation to the age and sex distribution of the local population.

I have stated that the year was a fairly typical one. I have completed the figures relating to the year 1963 and can offer a comparison of the two years in terms of consultations and disease incidence. They compare very closely as can be seen in table XV and table XVI.

During the year 1962 I was ably helped in the collection of data by my trainee assistant—Dr Keith Finney, to whom I must express my appreciation. His presence in the practice made the task easier but it must be pointed out that whether an assistant was present or not the number of disease incidents would have been the same.

TABLE XV
TOTAL NUMBER OF VISITS AND CONSULTATIONS 1962 AND 1963

	1962	1963
Patients on list	2,627	2,629
Surgery consultations	12,019	12,445
Home visits ..	6,326	6,977
Total consultations	18,345	19,422

In 1957 when the author was single-handed and had no assistance during the year, there were 6,765 home visits—a greater number than was made in the year of 1962. It can be assumed that the proportion of surgery consultations would not have been appreciably altered.

TABLE XVI
INCIDENCE OF DISEASE 1962 AND 1963 COMPARED

Group of diseases	*Incidence of disease*		*Percentage*	
	1962	*1963*	*1962*	*1963*
Infective and parasitic	344	290	9.66	8.98
Simple neoplasms	16	11	0.45	0.33
Malignant neoplasms	42	47	1.18	1.45
Allergic, endocrine and metabolic	209	203	5.87	6.3
Psychoneurotic	120	97	3.37	3.0
Diseases of C.N.S.	357	353	10.02	10.45
Diseases of C.V.S.	230	201	6.46	6.2
Diseases of respiratory system ..	960	956	26.96	29.6
Diseases of digestive and urinary systems	278	252	7.8	7.8
Genital disorders and child-birth	130	130	3.65	4.02
Disorders of skin, bones, joints and muscles	562	447	15.78	13.82
Congenital malformations and infancy diseases	5	6	0.14	0.186
Accidents, violence and poisoning	308	242	8.64	7.48
Total	3,561	3,235		

This paper has been intended to assess the morbidity in an average semi-rural practice but at the same time, it brings to light the volume of work that must be borne by the average practitioner.

Sixty-six patients per day is too large a number to deal with efficiently —for even seeing patients 11 hours a day this only allows 10 minutes per patient and does not take account of the time spent on other work in the practice—telephoning, surgery, pathology, letter-writing and clinical work relating to the practice. The evidence herewith, would certainly support the general contention that a diminution of practice lists is urgently required.

Acknowledgements

I would like to acknowledge the help I have had from my trainee assistant Dr Keith Finney, the co-operation of the clerk of the Renfrewshire Executive Council and his staff for their help in the compilation of the age-sex register, the help, clerical assistance, encouragement and forbearance of my wife, in the final sorting of the data and drafting of this paper.

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The Drinking Driver. SIMON FREEMAN. *Brit. med. J.* 1964. **2**, 1634.

This survey covers six years experience by a former police medical officer in Manchester. In that time 392 persons were seen and suspected by the police of being under the influence of alcohol while in charge of a motor vehicle, most of them within twenty minutes of arrival at the station. Three hundred and twenty three of these people were certified. In Dr Freeman's opinion most of the others were " borderline cases fortunate to escape ". The most significant clinical signs of intoxication were slurred speech, full bounding pulse, impaired memory, poor co-ordination, widely dilated pupils with little or no reaction to strong light and fine lateral nystagmus. Urinalysis was only used to a limited extent and never when a plea of guilty was tendered. Of 82 cases in which it was undertaken only eight showed results compatible with the blood alcohol of below 150 mg. per cent. Dr Freeman concludes that present laws on the subject are out-dated and inadequate and that the true magnitude and danger of the problem is still only dimly appreciated by the public at large.