OUT-PATIENTS OF A LONDON TEACHING HOSPITAL

BY

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Much information is now available on the functioning of in-patient services through the annual reports of the Hospital In-Patient Enquiry (Ministry of Health and General Register Office, 1960, onwards), but there has been little study of out-patient services. The Digest of Health Service Statistics (Ministry of Health, 1957-63) covers the number of new out-patients, total out-patient attendances, and total number of clinic sessions for each specialty. A study recently undertaken by the Oxford Regional Hospital Board, Operational Research Unit (1963) examined the functioning of the Royal Berkshire and Battle hospitals, using a sample of new patients followed through the out-patient departments. Some studies carried out under the auspices of the Nuffield Provincial Hospitals Trust (Nuffield, 1966; Scott and Gilmore, 1966) have recently investigated various aspects of the out-patient department, such as the demographic and social characteristics of out-patients, the source of referral, the treatment received, and ultimate disposal.

On a national scale the available statistics point to a general increase in the numbers of new out-patients, total attendances, and clinic sessions over the last 15 years. However, though this is the national trend, it does not apply either to the London Teaching Hospitals as a group or to St. Thomas' in particular. The statistics from the annual returns of St. Thomas' for 1954-63 show an 8 per cent. increase in the number of new out-patients which is near the national figure for those years, but whereas the national figures for total attendances show a rise of 9 per cent, those for St. Thomas' over the same period decreased by 11 per cent.

It is now widely accepted that a teaching hospital should concern itself with the needs of its local community in much the same way as a district general hospital, and St. Thomas' Hospital has now

assumed this role. The aim of this study was to investigate patterns of out-patient attendances and to define the *de facto* catchment area of the out-patient department.

METHOD

The study was carried out on a random sample of patients attending the out-patient department in St. Thomas' Hospital over the 6 months July, August, and September, 1964, and January, February, and March, 1965. The sampling period was split in order to eliminate any seasonal variations in attendance. All out-patient departments were studied, with the exception, for administrative reasons, of the Venereal Disease Clinics and Radiotherapy. The Chest Department, which also functions as a Local Authority clinic, and the Obstetric and Gynaecological and Casualty Departments were studied separately.

The sample was drawn from the clinic appointment lists by adding the number of attendances at all clinics on one day, assessing the 5 per cent. quota, and drawing patients by the use of random number tables. Duplicate random numbers having been excluded from the analysis, the final result was a sample of 4.9 per cent. of all out-patient attendances. This provided a total of 3,245 patient attendances from the 6-month period, representing an annual total of 132,120.

As for hospital statistical purposes, patients who fail to keep their appointment are included in the total on the assumption that "emergency" cases are always substituted for these patients but are never entered on the clinic lists. There were 149 of such non-attenders. The age/sex structure of this sub-group resembled that of the main sample though there was a slightly higher proportion of elderly males. It was not possible, however, to obtain

information on the characteristics of "emergency" cases.

Both "new" and "old" patients were included in the survey, the Ministry of Health definition of a "new" patient being used, *i.e.* "One whose first attendance of a continuous series at a clinical department for the same ailment (or whose single attendance if only one is needed) falls within the year under review. A person attending different departments should be counted as a new out-patient in each department".

Having identified the patients from the appointment lists, further information was taken from registration cards on which details as to address, sex, age at registration, date of registration, the clinic of first attendance and subsequent clinics, and the total number of ward admissions both at St. Thomas' and hospitals within the St. Thomas' group are entered. This information was collected from the card of each patient as fully as possible, but that there is considerable under-recording is evident from the finding that 5 per cent. of the sample were not recorded as having attended any clinic, while others were not recorded as having attended the clinic from which the sample attendance was drawn.

RESULTS

The sample yielded 3,245 patients: 1,548 males and 1,697 females, the proportion 47.7 and 52.3 per cent. being almost identical with the proportions

of the two sexes in the population of London and similar to the findings of Chamberlain and others (1966) and the Oxford Regional Hospital Board (1963).

The sample figures differ from the official returns for St. Thomas' Hospital over the same 6-month period in that some departments, notably the Dental and Ophthalmic, appear to have fewer patients than officially recorded. This is because the figures are drawn from different sources: those for this study were taken solely from appointment lists, while the official statistics, though usually obtained in the same way, are in a few cases taken from records of daily attendance. Another difference occurs in the number of "new" patients although the same definition was used. This may be due to the lack of indication on the clinic lists as to which are "new" and which are "old" patients.

The age structure of the out-patient population (Table I) shows a lower proportion of persons aged 0-14 years in comparison with that of the general population, and a higher proportion of those in the middle and elderly groups. The marked increase in the proportion of patients in the 45-64 year group is similar to the findings of Chamberlain and others (1966) and Scott and Gilmore (1966).

However, there are differences in the age structure of the "new" and "old" out-patient populations (Table II). There is a higher proportion of "new" males in the extreme age groups than in the middle range but females show the reverse. There is a

TABLE I
PERCENTAGE DISTRIBUTION OF OUT-PATIENTS AND LONDON CENSUS 1961 POPULATION, BY SEX AND AGE

Sex	Population	Age (yrs)					Total
		0-4	5-14	15-44	45-64	65+	
Male	Out-Patients	4	8	37	38	13	1,548 (100 %)
	London Census 1961	8	13	44	26	9	100 %
Female	Out-Patients	3	7	38	36	16	1,697 (100 %)
	London Census 1961	6	12	41	26	15	100 %

* Source: G.R.O. Census 1961 London County (Table 6).

TABLE II
PERCENTAGE DISTRIBUTION OF "NEW" AND "OLD" PATIENTS, BY SEX AND AGE

Sex		Male			Female		
Type of Patient		"Old"	"New"	"New" as Percentage of Total	"Old"	"New"	"New" as Percentage of Total
Age (yrs)	0-14	12	15	13	10	6	7
	15-64	76	70	10	73	80	11
	65+	12	15	13	17	14	9
	Total	1,378	170	11	1,515	182	11

slight seasonal effect on the age structure, the winter sample having a higher proportion of "new" patients in the 0-14 year group among both sexes, and also an increase in the proportion of elderly females. There is also an overall increase in the proportion of "new" patients in the winter sample, the difference being most marked among males: 8.8 per cent. of all male patients were "new" in the summer, but 13.1 per cent. were "new" in the winter. Figures for individual clinics are, however, too small to be significant.

The clinic populations show different age structures as might be expected. There is a high proportion of patients attending the Departments of Psychological Medicine and Cardiology in the 15 to 64-year group, and apart from E.N.T. there is a consistently higher proportion of females than of males in the 65+ age group, reflecting the age structure of the general population. Furthermore, the clinics vary in the proportion of "new" patients to the total clinic population (Table III); it should be mentioned that the figures for the Department of Physical Medicine include only appointments for consultation, and therefore do not cover subsequent attendances for physiotherapy.

TABLE III
"NEW" OUT-PATIENTS AS A PERCENTAGE OF ALL
OUT-PATIENTS, BY CLINIC

Clinic	Total	"New" Patients	"New" as Percentage of Total
All Clinics (main sample) ..	3,245	352	10.8
Physical Medicine	227	56	24.7
Cardiac	99	20	20.2
General Medicine	666	109	16.4
Paediatric	130	16	12.3
Orthopaedic	179	19	10.6
General Surgery	358	28	7.8
E.N.T.	429	32	7.5
Dermatology	260	11	4.2
Psychological Medicine ..	388	15	3.9
Chest	303	62	20.5

When the age structure of patient populations from different areas is considered, there is a clear trend showing that patients in the extreme age groups are drawn predominantly from the local area, while for the 15 to 64-year group the catchment area is wider (Table IV). There is also an indication that the catchment area contracts during the winter months.

The clinics vary considerably in the extent to which their patients are drawn from the local population (Table V), the range being from 68 per cent. of paediatric cases to 18 per cent. of dental ones. Again there is a seasonal contraction of the

TABLE IV
PERCENTAGE DISTRIBUTION OF AREA OF RESIDENCE
OF OUT-PATIENTS, BY AGE

Age (yrs)		0-14	15-64	65+	Total	
Area of Residence	Lambeth, Battersea, and Wandsworth ..	14	70	16	1,658	100
	Other Metropolitan Boroughs	9	77	14	612	100
	Elsewhere ..	6	82	12	951	100
	Total	348	2,408	465	3,221	
	No. Per cent.	11	75	14		100

TABLE V
ORDER OF POPULARITY OF CLINICS USED
BY OUT-PATIENTS FROM LAMBETH, BATTERSEA,
AND WANDSWORTH

Clinic	Patients from Lambeth, Battersea, and Wandsworth	All Patients	Lambeth, Battersea, and Wandsworth as Percentage of Total
All Clinics (main sample) ..	1,661	3,245	51.2
Paediatric	88	130	67.7
Orthopaedic	112	179	62.6
Dermatology	149	260	57.3
Ophthalmology	114	202	56.4
E.N.T.	241	429	56.2
General Medicine	358	666	53.8
G.U. and Rectal	75	144	52.1
General Surgery	170	358	47.5
Cardiac	45	99	45.5
Physical Medicine	97	227	42.7
Psychological Medicine ..	149	388	38.4
Plastic	14	49	28.6
Dental	6	33	18.2
Chest	234	303	77.2

catchment area. In this respect the Chest Department is peculiar, since it also functions as the Local Authority chest clinic, and 77 per cent. of all chest clinic patients come from the Boroughs* of Lambeth, Battersea, and Wandsworth. Chest Clinic patients also differ from the main sample in having a high proportion of "new" patients (20 per cent. of all attendances) and also of elderly male patients, as might be expected from the known age/sex structure of the prevalence of chronic respiratory disease.

DISCUSSION

As previously stated, one aim of this study was to define the catchment area of St. Thomas' out-patient population. It was found that 53.4 per cent. of all out-patients (including the Chest Clinic

* Boundaries are those of the pre-1963 London Government Act.

patients) came from the three local boroughs Lambeth, Battersea, and Wandsworth, a distribution very similar to that of in-patients (Bennett, 1966).

One conclusion to be drawn from this study is that the catchment area is wider for patients aged 15-44 years than for those either older or younger: thus, there is a higher proportion of patients from Lambeth, Battersea, and Wandsworth in the extreme age groups than in the 15 to 64-year group and conversely a higher proportion of patients in the middle age range comes from further afield. This is to be expected, since these are the more mobile, commuting sections of the population.

The age structure of St. Thomas' out-patient population differs from that of Guy's (Chamberlain and others, 1966), the only other London Teaching Hospital for which data are available, in that it has a higher proportion of patients of both sexes in the 65+ age group than there is in the general population at risk. From this it may be concluded that St. Thomas' is meeting the needs of this age group to a greater extent than had previously been suggested. This reflects the structure of the catchment area since this is relatively concentrated and old people travel less for out-patient treatment.

When the residence of patients attending the different clinics is considered, it is apparent that the clinics with the highest proportion of patients living in Lambeth, Battersea, and Wandsworth are those with the highest proportions of both young and old patients, *viz.* Chest, Paediatric, Orthopaedic, E.N.T., and Dermatology. These findings are corroborated by those of the Oxford study (Oxford Regional Hospital Board, 1963), in which those clinics with the highest proportion of patients living less than 5 miles from the hospital of attendance were Chest, General Medicine, Orthopaedic, General Surgery, and Dermatology.

Other out-patient studies have been concerned with studying new patients as they arrive for the first time in the out-patient department, and then following them through for a period of time. Since our method was to take a random sample of all out-patient appointments, it was possible to compare the re-attending population with the newcomers. As mentioned before, there is a higher proportion of "new" male patients in the extreme age groups, while females show the reverse. It would, therefore, appear that males are rather more likely to be referred to an out-patient department in their earlier and later years, whereas females are more exposed to the risk of out-patient referral in middle life. This can be looked at in another way, as an attendance rate. When those patients from Lambeth, Battersea, and Wandsworth are set against the

age/sex structure of the population at risk in these boroughs, and a rate of attendance is calculated, it appears that the male rate exceeds the female in the 0 to 4-year age group and the 65+ age group (Table VI).

TABLE VI
OUT-PATIENT ATTENDANCE RATES PER MONTH, BY
SEX AND AGE
(LAMBETH, BATTERSEA, WANDSWORTH ONLY)

Age (yrs) . . .		0-4	5-14	15-44	45-64	65+	Average All Ages
Rate per 100,000	Males	59.9	56.5	65.4	104.8	118.8	78.7
	Females	40.4	59.8	69.9	112.5	101.1	82.8

This finding is similar to that of the Scottish studies (Scott and Gilmore, 1966; Backett, Sumner, Kilpatrick, and Dingwall-Fordyce, 1966), although the overall pattern is different: the Edinburgh study showed a higher rate for all males, while St. Thomas' Hospital shows a higher rate for females. This discrepancy may result from Lambeth males seeking hospital services elsewhere to a greater extent than females.

The seasonal effect on the proportion of "new" patients to total patients, which shows a marked winter increase in the proportion of "new" male patients, may imply either a greater susceptibility of the male to diseases such as chronic bronchitis which show seasonal variation, or less inclination to re-attend at an out-patient clinic in the winter. The seasonal contraction of the catchment area also suggests that people are less willing to travel far for out-patient consultations during the winter; it would be interesting to study the effects of a severe winter on the structure of the catchment area.

St. Thomas' appears to have a more concentrated catchment area than its neighbour, Guy's (Chamberlain and others, 1966), 72 per cent. (including chest clinic patients) as opposed to 57 per cent. living in the Metropolitan region. It seems that London Bridge Station exercises a more powerful influence over the catchment area than Waterloo. It is therefore true to say that to a considerable extent St. Thomas' fulfils the role of district hospital, more than half the number of in- and out-patients coming from the three local boroughs. Since it was only comparatively recently that the change to district general hospital was made, it may well be that in time a still greater proportion of patients will come from the local district. However, it is also probable that a number of specialties, notably Psychological Medicine and Plastic Surgery, will continue predominantly to serve patients from beyond the local boundaries.

Thus the hospital serves two types of population; for the majority of the patients it functions as the district general hospital, while for a minority, the few who travel from further afield, it still provides a specialized service. This study describes the pattern of out-patient attendance in 1964-65, before the implementation of the decision to function as a district general hospital; a later study would be able to assess whether this decision had affected the catchment area of St. Thomas' out-patient population, and if so, to what extent. Alternatively, it may be that St. Thomas' is nearing the point of equilibrium, in which the teaching hospital can both serve the needs of the local community and draw on a larger area to provide a wider range of medical conditions for the instruction of its students.

SUMMARY

A 5 per cent. random sample of out-patients was drawn from clinic appointment lists of patients attending St. Thomas' Hospital in July, August, and September, 1964, and January, February, and March, 1965.

Details as to age, sex, place of residence, and clinic of attendance were collected for each patient from registration cards. Compared with the population at risk, the sample showed an excess of patients of both sexes from the age of 45 onwards. There was a higher proportion of new male patients in the extreme age groups than of new female patients, with the reverse pattern in the middle age range. There was also an indication that the proportion of new attendances to total out-patient attendances increases in the winter months.

Over half the out-patients at St. Thomas Hospital come from the three neighbouring Boroughs of

Lambeth, Battersea, and Wandsworth. Furthermore, the young and the old appear to travel less for out-patient treatment than those in the middle age range.

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