

Dosage must therefore vary in accordance with the severity of this latter condition.

Corticosteroids.—These have been given in an effort to correct hormonal imbalance, but I doubt if anyone in this country would seriously consider using them to-day, as the complications of steroid (A.C.T.H.) therapy include the development of acne and hirsutism.

Vitamins

Although theoretical considerations seem to indicate that certain of the vitamins should be of value, in practice they hardly ever are. Yet every now and again one meets a patient in whom vitamin therapy is of help, particularly when given fresh yeast, yeast tablets, or the B complex, one tablet three times a day over a few months. Paradoxically, I have found patients in whom some element of the vitamin-B complex seems to have aggravated the picture, and who have improved when the concentrated mixture has been stopped.

Vitamin A reduces androgenic effects, while lack of it leads to hyperkeratinization of the hair follicles, a factor in plugging the pores. Eskimos, who live on a diet high in vitamin A, rarely get acne. It has been given in doses of 50,000 to 100,000 i.u. daily over periods of six months or longer, but on the whole it seems to be rarely justified. Toxic effects include fissuring of the lips, nausea, headache, irritability, and pruritus.

Nicotinic acid, 25 mg. before meals, helps those patients in whom iodides cause aggravation.

Ascorbic acid 3 gr. per day, was once recommended by the Medical Research Council, but few people to-day would give it as a routine. Attention to diet should ensure an adequate intake.

Sedatives

Emotional influences are a contributory factor in that stress alters sebum production. Small doses of a medium-acting barbiturate, such as amytal $\frac{1}{4}$ gr., one tablet three times a day for short periods of two to three months, are suitable, particularly in tiding a patient over a crisis, such as examinations or a broken engagement. Bromides are contraindicated, because, like iodides, they can cause exacerbations.

Vaccines

These are not often given now, particularly since the advent of broad-spectrum antibiotics. However, those patients from whose lesions staphylococci and even acne bacilli may be cultured often respond to a mixed staphylococcus and acne vaccine. This may be successfully combined with a staphylococcus toxoid. Such a combination, used in one injection, is known as a vaccoid. This procedure may therefore be tried if all else fails.

In conclusion, I would point out that the vast majority of cases of acne vulgaris respond well to the use of cleansing agents and topical applications, with the aid of a suitable diet, ultra-violet light, sunshine, and reassurance. For some females, support from oestrogen therapy may be necessary, and the occasional case will call for antibiotic therapy. The essentials are very careful assessment of the patient, and the use of procedures with the minimum chance of unpleasant sequelae.

I wish to thank Dr. Derek Larnder for his great help in the preparation of this article, and Mr. M. H. Payne, chief dispenser, St. Mary's Hospital, for useful criticism.

WHY PATIENTS GO TO HOSPITAL

A STUDY OF USAGE

BY

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Even after 10 years of the National Health Service we are still lacking in facts on many aspects of its work. We know, for instance, that the hospitals are an important and expensive branch of the service, and that patients are referred to hospital by their own family doctors, but we know very little about how the two are working together. What proportion of their patients do family doctors refer to consultants, and why? Is it true that the family doctor has degenerated, as some imply, into a mere "signpost" to the hospital or a "sorter" of those patients who require referral and those who can be treated at home? Is the hospital providing adequate facilities for its local family doctors so that they are encouraged to care for their patients at home? If there are faults, on either side, can we define these and take action to remedy them and produce a system whereby the modern hospital is used to the best advantage of the patients, the family doctors, and the hospital staff?

In order that the best type of service and system can be developed we must have information on the ways in which the family doctors are using their local hospitals, for it is only by studies in operational research that these faults and difficulties can be defined and remedied. While we have had many reports on the ways in which the hospitals are working internally we have had very little information on the situation that exists before the patient ever arrives at the hospital.

What are the habits of family doctors in referring patients to hospital, and why do these habits vary so much? It is this aspect that deserves much more attention. There have been only two reports on this topic—one by Hopkins (1956), from his own London practice, and the other report by Logan and Forsyth (1958), on the referral rates of family doctors in Barrow. The present paper describes a further investigation on the use of the hospital by a family doctor. An attempt has been made here to confirm the principle that operational research is a useful technique even when applied to the field of general practice, to try out simple methods of recording facts, and to examine the results, even though they may refer to an individual practice in one area of the country.

The Practice

The practice is sited in the south-eastern suburbs of London, in an area that was largely developed in the 1920's and 1930's. The patients are almost entirely N.H.S., and belong to social classes II, III, and IV. The mid-year practice population in 1957 was 5,502.

The work in the practice is shared between myself (the principal), an assistant, and one secretary.

The hospital facilities in the area of the practice are really excellent. The local hospital, once a cottage hospital and now up-graded and staffed entirely by consultants, has full in-patient and out-patient facilities, and in addition provides all the local family doctors with full and complete access to the pathological and radiological departments. Any radiological or pathological investigation that can be performed on an

out-patient can be carried out directly for the family doctor without prior referral to a consultant. In addition to this local hospital there are three other large hospitals in the area, and big London teaching hospitals are only half an hour's travel time away.

Methods of Study

To carry out any form of research in general practice the methods employed must be simple, so as to be compatible with the busy daily routine. Over the years simple methods of record-keeping have been developed in this practice (Fry and Blake, 1956). For the present study the information was recorded on punch cards (Cope Chat) that are the routine method of recording information. These cards contain holes for various diagnoses and for referrals to hospital. Referrals were classified as those involving handing over the responsibility for the care of the patient to a hospital consultant either as an out-patient or as an in-patient, and those where the responsibility remained with the family doctor, the referral being for a radiological or pathological investigation. There were two other groups of patients who attended hospital during the year on whom precise information was lacking; one group of around 60 were attending hospital follow-up clinics at intervals, and the other group, on which little information was available, consisted of patients who attended a casualty department as emergencies on their own initiative.

At the end of the year the punch cards of all patients who had been seen were hand-sorted and the cards of all those referred to hospital were extracted and analysed. Information on the age and sex of the patient and the reason for referral was obtained from the card, and further details regarding progress were derived from the usual clinical notes that had been kept.

How Much Was the Hospital Used ?

Facts that answer those who imply that the family doctor is merely a "signpost" to the hospital are given in Table I.

In this practice, at least, there was little evidence of any large-scale referral of patients to the hospitals. Over 90% of all the 4,122 patients out of the 5,502 at risk who were seen once or more during the year were managed by the family doctor himself, and less than 10% were either sent to the out-patient departments or admitted to the wards.

The very great benefits of the diagnostic facilities available to local family doctors are evident from the fact that 6% of patients in the practice were sent for an x-ray and 7% for a pathological investigation. It is very likely that if these facilities had not been available a good number of these 719 patients would have been referred to a consultant for the investigations. What a saving of consultants' time! When referral of these patients was necessary they were sent along already investigated, again with a saving of time. The

TABLE I.—Patients Referred to Hospital in 1957

Hospital Department	In-patients	Out-patients	X-Ray Dept.	Path. Dept.	Total No. of Patients Referred
No. of patients	176	207	329	390	1,102
Percentage of those at risk	3.7%	3.8%	6.0%	7.0%	18.8%
	7.5%		13.0%		

Some patients were referred to more than one department.

investigation of one's own cases added immensely to the interest of routine work and also, one hopes, improved the standards of work. Having had these facilities available for many years, to work without them would be a very great loss.

It is appropriate to refer here to *domiciliary consultations*. These have been one of the boons of the Health Service. In the year of the study a consultant was asked to see a patient at home in consultation with the family doctor on 23 occasions. In addition, a consultant radiologist was asked to carry out a domiciliary x-ray examination on 17 occasions.

Who Was Referred to Hospital ?

If we are to plan sensibly for the future it is necessary to know which groups of the population are most likely to be referred to hospital and to which department. The following tables show what happened in this particular practice during 1957.

Out-patient and in-patient services were most often required for the 40-70 age-period and least often for children (Table II). There was no appreciable sex difference, 189 males and 194 females being referred. The conditions which accounted for this bulge in the middle-aged and elderly were chiefly rheumatic, digestive, and eye disorders, and the neuroses.

TABLE II.—Out-patient and In-patient Referrals in Age, Expressed in Rates Per 1,000 of Those at Risk in Each Decade

Age:	0-	10-	20-	30-	40-	50-	60-	70+	All Ages
Referral rate ..	28	20	60	59	91	90	115	81	75

TABLE III.—Referrals to X-ray Department at Various Ages, in Rates Per 1,000 of Those at Risk

Age:	0-	10-	20-	30-	40-	50-	60-	70+	All Ages
Referral rate ..	32	27	63	56	56	84	88	57	60

TABLE IV.—Pathological Investigations at Various Ages, in Rates Per 1,000 of Those at Risk

Age:	0-	10-	20-	30-	40-	50-	60-	70+	All Ages
Referral rate ..	56	62	80	75	80	60	67	70	70

Radiological facilities (Table III) were mostly required for those aged between 50 and 70, and here it was the rheumatic and respiratory tract disorders that were responsible for the peak at this age. More males (198) than females (131) were referred for x-ray.

Pathological investigations (Table IV) were most often made in those aged between 20 and 50, chiefly because of the prevalence of anaemia and throat infections, and because of routine tests associated with pregnancy, at these age periods. Twice as many females (265) as males (125) were sent for pathological examination.

Where Were the Patients Referred To ?

The selection of the department to which the patient is referred must naturally be a matter of personal choice by the family doctor. It will depend on the type of illness from which the patient is suffering, but also on the accessibility of the department and to a large extent on a personal knowledge of the consultant.

TABLE V.—Departments to Which Patients Were Referred

Department	Medical	Surgical	Physiotherapy	Orthopaedics	Gynaecology	Obstetrics	Skin	Psycho-neuroses	E.N.T.	Radiotherapy	Casualty	Eye	Paediatrics*	Geriatrics*	Total
O.P.	33	26	43	4	3	—	12	22	16	6	9	33	(17)	(19)	207
I.P.	27	59	—	12	20	30	—	12	7	—	—	9	(9)	(12)	176
Domiciliary*	(10)	(5)	—	—	—	—	—	(8)	—	—	—	—	—	—	(23)
Total	60	85	43	16	23	30	12	34	23	6	9	42	(26)	(31)	383
%	12	17	9	3	5	6	2	7	5	1	2	8	(5)	(6)	77

* Domiciliary consultations were included in O.P. or I.P. columns; paediatrics and geriatrics were included in the other columns.

The departments of the various local hospitals that were most often used are shown in Table V.

Table V shows that medical—including the more specialized chest, cardiac, and neurological sections—and surgical departments were most often used. The next in frequency were the eye department and the psychiatric service. No beds are available in this area for family doctors to care for their own midwifery cases in hospital, and at least 30 deliveries occurred in the local maternity hospital, under consultant supervision; 45 others were supervised at home. Included in the number referred were children and old people. There were 26 children referred to "out-patients" or admitted to a number of different departments of different hospitals. During the year 31 patients aged 70 and over were referred to out-patient departments or were admitted, but only 5 of these were dealt with by the local geriatric unit; the remaining 26 were seen at the usual departments of general hospitals.

Conditions Requiring Referral

Specific Conditions

Just as it has been erroneously suggested that the family doctor refers a considerable proportion of his patients to hospital, so it is generally assumed that all serious illnesses, such as coronary occlusions, peptic ulcers, epilepsy, pneumonias, and others, are automatically sent on to hospital. An attempt was made to examine how many of these more serious and major illnesses were in fact referred to a consultant during the year and how many were managed by the family doctor at home.

The four most common conditions requiring referral to a consultant in 1957 were acute disk lesions, haemorrhoids, the "acute abdomen," and hernias. This is very different from the usual impression that it is the more serious and dramatic illnesses that go to hospital. In fact, new growths, pneumonias, and cardiac conditions were a good way behind in rates of referral. The most frequent requests for *x-rays* were for examinations of the chest, gastro-intestinal tract, back, and other joints and bones in that order. *Pathological* investigations most often requested were, in order of frequency, bacteriological examinations of swabs (throat), haematological studies, and examinations of urine and sputum.

What proportion of certain specific illnesses required referral to a consultant—that is, what proportion could not be managed by the family doctor himself at home? In the following sections these rates are expressed as percentages of all those patients seen for the particular complaint during the year.

Rheumatic Conditions

It will be seen from Table VI that very small proportions of the most common rheumatic illnesses

were in fact referred to a consultant in this practice. Almost 90% of cases of "fibrositis," disk lesions, osteoarthritis, and rheumatoid arthritis were managed in general practice with simple methods of treatment, with apparently quite satisfactory results, the patient being helped to carry on with his daily routine at terms with his disabilities—which is, after all, almost as much as we can hope for in these conditions.

TABLE VI.—Rheumatic Cases Referred

	Soft-tissue Lesions	Acute Backs	Osteoarthritis	Rheumatoid Arthritis
Referred to consultant	35	18	9	3
Total No. seen in year	374	119	87	20
% referred	9%	15%	10%	15%

Digestive Disorders

With regard to digestive disorders (Table VII), some comments are necessary. Acute abdominal emergencies that did not require admission were cases of renal and biliary colic and diverticulitis. Many of the hernias occurred in old men who were loath to submit themselves to surgery, and these were well controlled by suitable trusses. The majority of peptic ulcers were well controlled by simple medical measures, and only 3% of the cases seen during the year were referred for surgical treatment. None was referred for medical treatment as an in-patient.

TABLE VII.—Cases of Digestive Disorders Referred

	Acute Abdo.	New Growth	Hernia	Piles	Peptic Ulcer	Gall Bladder
Referred to consultant	11	6	10	15	2	1
Total No. seen in year	15	7	24	27	59	15
% referred	73%	90%	42%	55%	3%	7%

Cardiovascular Diseases

Of the patients suffering from cardiovascular diseases (Table VIII) seven had an acute coronary occlusion. Only one of these was admitted to hospital; the other 6 were treated at home during the acute phase and then referred for confirmation of the clinical diagnosis. Hypertension is a benign condition in general practice; its natural history suggests that complications are infrequent, and it is for the complications that referral to a consultant is usually required. This might explain why only 2 of the 65 seen were so referred. Had it not been for the pathological facilities available one would have had to refer many of the 60 patients with anaemia to a consultant. As it was, only one patient

TABLE VIII.—Cases of Cardiovascular Disease Referred

	Coronary Occlusion	Heart Failure	Hypertension	Anaemia	Varicose Veins
Referred to consultant	7	6	2	1	5
Total No. seen in year	36	81	65	60	44
% referred	19%	7%	3%	2%	11%

was so referred for further investigation in hospital. All the sufferers from varicose veins who were referred were sent for surgical treatment. Varicose ulcers and other complications are as a rule managed in the practice.

Neurological Disorders

Few of the common neurological diseases encountered in general practice required referral to a consultant. Only 2 of the 27 cerebrovascular accidents ("little" and "big" strokes) were sent to hospital (Table IX). I was unable to manage alone 2 of the 24 epileptics seen: only a minority of epileptics ever require referral. It is also very rarely necessary to refer a case of migraine—a very common condition—to hospital. The family doctor is the best person to care for cases of this psychosomatic disability.

TABLE IX.—Referrals for Neurological Disorders

	Cerebro-Vascular	Epilepsy	Migraine	New Growth
Referred to consultant ..	2	2	—	3
Total No. seen in year ..	27	24	93	3
% referred	7%	7%	—	100%

Respiratory Disorders

Of the respiratory diseases (Table X), acute chest infections include all pneumonias and acute bronchitis, and it is evident that, with modern antibiotics domiciliary oxygen, and other aids, less than 3% of those seen were admitted or referred as out-patients. The rest were treated and investigated at home. Of the chronic bronchitis only 2% of those seen during the year required a consultant's opinion, and the proportion of consultations for the 63 asthmatics was even smaller. As might be expected, all those seen with a new growth were treated in hospital.

TABLE X.—Referrals for Respiratory Disorders

	Acute Chest Infections	Chronic Chest Infections	Asthma	New Growth
Referred to consultant ..	4	2	1	6
Total No. seen in year ..	119	139	63	6
% referred	3%	2%	2%	100%

Other Major Groups

Owing to difficulties in separating and defining the specific conditions in these broad diagnostic groups, the five important groups are presented as a whole. Table XI shows all the individual patients seen during the year who were suffering from any skin, eye, E.N.T., or urological disorder, or from a psychoneurotic illness. It also shows the proportion of patients in each of these groups who were referred to a consultant.

TABLE XI.—Other Major Groups of Cases Referred

	Skin	Neuroses	Eye	E.N.T.	Urological
Referred to consultant ..	35	34	42	23	19
Total No. seen in year ..	997	663	282	567	177
% referred	4%	5%	14%	4%	11%

Why Did the Family Doctor Refer Patients to Hospital?

There are three main reasons why patients are referred to a hospital consultant: (1) to establish a

TABLE XII.—Reasons for Referring Patients

Reason	Department to which Referred								Total
	Med.	Surg.	Physio.	Gyn.	E.N.T.	Eye	Skin	Neuroses	
For diagnosis (G.P. stuck)	13	7	2	—	4	12	6	4	48 (15%)
For special investigation ..	10	10	—	5	4	—	—	—	29 (9%)
For treatment	35	64	41	18	12	30	6	30	236 (73%)
Other reasons	2	4	—	—	3	—	—	—	9 (3%)
Totals ..	60	85	43	23	23	42	12	34	322

diagnosis when the family doctor is stuck; (2) for complex investigations with techniques that demand special skills and apparatus; (3) for treatment that is beyond the scope of a family doctor working alone in a patient's home—surgical or medical care requiring skilled professional nursing. There are, of course, other miscellaneous reasons, such as the need for reassuring the patient by means of a second opinion, the need to refer so as to obtain permission to order a special appliance, and so on.

With these points in mind it was possible to analyse the reasons for referring individual patients to the main hospital departments (Table XII). Referrals to the smaller departments have been omitted.

It seems that in this practice, at any rate, the patient was not usually referred because the family doctor was stuck for a diagnosis, but rather because of the need for some special treatment or investigation. It is interesting to note that the two groups where the diagnosis proved most difficult to the G.P. were in medical and ophthalmic conditions; in most of the other clinical groups the patients were referred to the consultant with the diagnosis already established.

What Were the Results of Hospital Treatment?

An assessment of the long-term results of hospital treatment presented a very nice and delicate situation. To my knowledge, apart from special follow-up surveys by consultants particularly interested in certain well-defined diseases, there has never been any attempt to assess the results of hospital care as a whole and hospital departments in particular. What are the results of the many hours spent in providing physiotherapy? What are the results of psychotherapy? How do the asthmatic and eczema cases fare? These are some of the very important questions that require answering if future planning is to be realistic and progressive.

An attempt was made to assess the long-term results of patients referred to hospital. A number of difficulties arose. How were results to be assessed? What criteria should be used? The nature of the disease obviously had to be taken into account. For instance, one cannot expect a "cure" or even very much improvement in the degenerative conditions of old age, which account for much of the work of the physiotherapy departments. The unalterable features of personalities and personal circumstances must also be appreciated in following up the results of psychiatric treatment.

In spite of these snags it was felt that some attempt at an assessment was worth while. Was the patient better than before referral to hospital, the same, or worse? In general practice it is extremely easy for the family doctor to make such an assessment, for he knows his patients well and he can easily judge the situation from personal follow-up. This was what was done, and the results are seen in Table XIII.

TABLE XIII.—Results of Hospital Treatment—A Year or More Later

Grades	Clinical Groups									Totals
	Rheum.	Dig.	C.V.S.	C.N.S.	Resp.	Skin.	Neur.	Eye	E.N.T.	
Better ..	28	40	10	4	5	24	9	26	9	155 (53%)
Same ..	31	5	7	1	1	11	19	15	14	104 (38%)
Worse ..	4	3	8	3	4	—	6	1	—	29 (9%)
Totals ..	63	48	25	8	10	35	34	42	23	288

The assessment was carried out at the end of 1958—that is, 12–24 months after referral to hospital. The results have been arranged in clinical groups in order to separate the conditions as much as possible, but at the same time not to introduce too many single specific entities to cause confusion.

From the groups selected the overall results were satisfactory in just over half of the patients assessed (some groups, such as obstetrics, were not included), but it is somewhat chastening to note that the state of the patients was little different, or even worse, in almost the same proportion. The least improvement was seen in degenerative conditions such as rheumatic and eye disorders, and in those conditions that occur on a basis of some susceptible individual characteristic, as in neuroses, skin conditions, and the allergic disorders.

No real conclusions can be drawn from these few figures, but they do suggest that there is need to analyse much more carefully and in greater detail the results of treatment in hospitals, and in particular to long-term results of some of the long-established therapies that have come to be blind routines in some departments.

Discussion

Habits of family doctors vary considerably. Logan and Forsyth (1958) found that there were marked variations in the admission rates of 16 family doctors in the area of Barrow. The average annual rate was 90 per 1,000 patients in their practice, but the individual variations ranged from 41 to 108. National rates quoted are between 74 and 82 per 1,000 of the population. Logan and Cushion (1958) in their study on 170 G.P.s found an admission rate of 43 per 1,000. My own rate was 37 and that of Hopkins (1956) in his North London practice was 40. All these figures by themselves mean little because of the many variable factors, but it is of interest to speculate on the reasons for the variations, which seem quite appreciable. There are five possible factors—the doctor, the area, the hospital, the patient, and the illness. Can one relate hospital referral rates of any family doctor to his age, sex, education, experience, standard of practice, and philosophical outlook? It is possible that living in an urban or a rural area makes a difference, as do the social climate and customs. The local hospital facilities and standards must obviously influence referral rates, as must the individual patient's habits and expectations.

An attempt to analyse the reasons for referral in this one particular practice showed that in only 15% of the patients referred was the reason because the G.P. was actually stuck for a diagnosis. In the remainder it was the need for special treatment or investigation. A study on a wider scale would certainly pinpoint some diagnostic blind spots, and possibly help in planning suitable corrective education.

Just as it is necessary to study the workings of the out-patients departments and the wards, so it is

necessary to look into the ways in which these radiological and pathological departments are being used by general practitioners. Just as there are variations in admission rates, so there are even greater variations in the use of these departments by general practitioners. Logan and Forsyth (1958) in the same paper showed that in Barrow, where direct diagnostic facilities are available, the use of the pathological department by local family doctors varied sixtyfold and that of the radiological department twelvefold. Again we may ask, why the differences? Is there evidence of overuse or underuse; and, if so, by what types of general practitioner? Do general practitioners who have been qualified more than 20 years really know how to use these departments to the best advantage? Would it not be valuable for the directors of these departments to organize periodic postgraduate courses in the best use of their departments?

Summary and Conclusions

For the future development and improvement of medical services it is essential that planning should be on a factual basis of information on the actual needs, on the ways in which the various parts are working and on some system of evaluating results. Operational research of this type is also necessary on the ways in which the various branches are working together.

This paper from a South-east London suburban practice sets out some factual information on the ways in which the family doctor used his local hospitals over a period of one year. In addition to out-patient and in-patient services at local and London hospitals, local family doctors in the area have full access to diagnostic facilities at local hospitals.

During 1957, the year of the study, 1,035 individual patients were referred to a hospital department by the family doctors in the practice (in addition some 60 attended regularly for routine follow-up at the request of the hospital). This represents a referral rate of 18.8% of the practice population. Of these, however, only a third (7.5%) required an out-patient consultation (3.7%) or admission (3.8%); the other two-thirds were referred only for a diagnostic investigation at the x-ray (6%) or pathological (7%) departments. The family doctor remained in complete charge of the patients in the latter two groups.

Of those patients referred to a consultant the peak age-group was from 40 to 70, and there was almost no sex differentiation. Of those referred for x-ray investigations the peak was at 50–70, and males outnumbered females. Of those referred for a pathological investigation the peak was at 20–50, and females outnumbered males by 2 to 1.

The hospital departments to which patients were most often referred were surgical, medical, physiotherapy, eye, and psychiatry in that order.

The family doctor was by no means the "signpost" that some imply. In fact, he found it necessary to refer to a hospital consultant only 10% of all patients seen in the year. The proportions of these varied with the specific illness. Thus, while it was necessary to refer almost all cases of new growths and acute abdominal emergencies, only a minority of patients suffering from rheumatoid arthritis, peptic ulcer, coronary occlusion,

hypertension, anaemia, epilepsy, "strokes," migraine, pneumonia, asthma, and chronic chest infections and psychoneurosis were referred to a consultant.

Analysis of the reasons why the family doctor found it necessary to refer a patient to hospital showed that in 15% it was because he was stuck for a diagnosis or treatment, in 9% because special investigations were required, in 73% because special treatment was necessary, and in 3% for a variety of reasons, such as demands by patients, etc.

Evaluation of the results of hospital treatment a year or more after referral showed that in 53% of cases the patient was better, in 38% no better, and in 9% worse. The least satisfactory results were in patients suffering from rheumatic, cardiovascular, skin, E.N.T., or psychiatric disorders.

I wish to thank Dr. G. E. H. Callebaut and Dr. E. M. Hume, who worked with me during the time of this investigation.

REFERENCES

- Fry, J., and Blake, P. (1956). *Brit. med. J., Suppl.*, 1, 339.
Hopkins, P. (1956). *Brit. med. J.*, 2, 873.
Logan, R., and Forsyth, G. (1958). Paper read at Society of Social Medicine in Dublin.
Logan, W. P. D., and Cushion, A. A. (1958). *Morbidity Statistics from General Practice*, vol. 1 (General). H.M.S.O., London.

HAND SURGERY

[FROM A SPECIAL CORRESPONDENT]

The Hand Club and the Second Hand Club held a joint meeting at the Royal College of Surgeons on November 28 under the chairmanship of Mr. NORMAN CAPENER. There were a number of overseas visitors including Dr. Erik Moberg (Göteborg), Dr. Henrik Sjøland (Stavanger), Dr. Halfdan Schjelderup (Bergen), Dr. Raoul Tubiana (Paris), Dr. Edouard Vander Elst (Brussels), Dr. Richard Fry (Ann Arbor, Michigan), and Dr. A. J. Selvapandian (Vellore, South India).

Trigger Thumb in Infants

Mr. G. R. FISK (London) spoke on trigger thumb in infants. Though uncommon, this condition was easily recognizable but often misdiagnosed. He recognized three stages—clicking, painful clicking, and jamming of the terminal phalanx in flexion. Operation was the only effective treatment for those cases which did not resolve spontaneously, and the latter was uncommon. A small segment of the stenosed sheath should be resected. Trauma was not implicated. It would appear that the primary lesion was a band in the sheath, and that the tendon thickening was secondary. This thickening usually resolved after operation and a normal thumb was the invariable result. He had found that one or two cases with the thumb fixed in extension were not due to stenosis in the tendon sheath, and that, even after division of the sheath and traction on the flexor longus pollicis tendon, the terminal joint would not flex, nor would it flex significantly after capsulectomy of the terminal joint. Mr. Fisk also drew attention to the slight ulnar deviation of the terminal phalanx which occurs in some cases, and showed radiographs of two cases of deviated thumb in which there were three phalanges present.

Sensory Loss

Dr. ERIK MOBERG (Göteborg) spoke on the importance of intact sensation in the normal use of the hand. He stressed that, however perfect might be motor function after operative repair, the patient could not use his hand normally if sensory function were defective. The fingers must be able "to see," and they could not do so if there

were a loss of tactile gnosis. The critical test for this was two-point discrimination at less than 8–12 mm. distance. This thesis was beautifully illustrated by slides and two short films showing how patients without such gnosis were unable to use their fingers when blindfolded. The implication was that skilled workers would find it difficult to do any job unless they could see what their fingers were doing. Dr. Moberg was sure that not enough attention had been paid in the past to this factor in assessing disabilities after disease or injury.

The most important sensory tests were (a) the actual feel of the skin to the observer's touch, (b) the picking up of small objects under vision and when blindfolded, (c) the two-point discrimination test, and (d) the ninhydrin printing test to chart sudomotor activity. He doubted the usual division of sensation into groups, and was uncertain if deep sensation could ever be present under areas of complete sensory loss. He also questioned the validity of the usually accepted methods of sensory testing. Applying these ideas, he had improved function in injured hands by using only skin with intact sensation to cover defects and by other procedures such as the transfer of island-skin pedicles to restore sensation to "seeing" areas on the fingers. The meeting felt generally that this contribution of Dr. Moberg's was absolutely fundamental as a baseline for approaching most problems of immediate or delayed reconstruction in hand diseases and injuries.

Trauma and Dupuytren's Contracture

Mr. PATRICK CLARKSON (London) spoke on the role of trauma in Dupuytren's disease. After observing a large series of cases, and communicating with many surgeons interested in this problem, he had concluded that trauma was seldom an operative factor, though in a few specially predisposed patients it might be of some significance. It was very important to recognize this for purposes of compensation, pension schemes, and the like.

Nerve Compression in the Arm

Mr. G. V. OSBORNE (Liverpool) spoke on nerve compression, with particular reference to the ulnar nerve at the elbow and the median nerve in the carpal tunnel. Both were similar in many respects; in fact it had been suggested that the ulnar nerve at the elbow was passing through what could be termed the cubital tunnel. He drew a distinction between nerve pressure occurring suddenly and that occurring gradually, and pointed out the different effects produced. He reviewed the theories of ischaemic and direct damage in acute compression; in compression of gradual onset he was impressed by the concept of interruption of axoplasm flow. In cases where there might be internal scarring, he was convinced that simple decompression was not enough and advocated neurolysis. He was also working on the assumption that milking of axoplasm along the nerve aids recovery and did this at operation, using vibration afterwards to assist the same process. He described and showed beautiful illustrations of his previously published operation of nerve release at the elbow.

King Canute's Compensation Scheme

A light-hearted post-prandial diversion was afforded by Mr. NORMAN CAPENER, whose literary researches had revealed that King Canute had propounded an ingenious scheme for compensation following injury. Indeed, that king's assessment of injuries involving loss of fingers and thumb was remarkably akin to the percentage assessment of the present Ministry of Pensions. In addition, the ancient nomenclature, Mr. Capener thought, was much more descriptive of each finger's functional significance. Further research had revealed that, prior to Canute, King Alfred, and before him Ethelbert, had had similar compensation schemes.

Mr. ROBERT ROBINS (Exeter) reviewed the various problems associated with the primary treatment of thumb

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