TABLE 1—Number of patients giving abnormal results on investigation

	(1) No of surgery encounters	(2) No of patients investigated (abnormal results)	(3) Patients investigated (abnormal results) as percentage of surgery encounters	(4) No of patients with abnormal results as percentage of total patients investigated	(5) Patients found to have abnormal results as percentage of total patients investigated	(6) Patients found to have abnormal results as percentage of total surgery encounters
A	5 018	440	8.8	116	21.4	1.9
B	8 114	85	0.9	94	22.8	1.9
C	1 651	1 651	100	433	26.2	3.0
D	13 265	1511	11.4	392	25.9	3.0

* $\chi^2 = 322.7$, d.f. = 3, $p < 0.001$.
 $\chi^2 = 18.9$, d.f. = 3, $p < 0.001$.
 $\chi^2 = 160.7$, d.f. = 3, $p < 0.001$.

We divided the patients in each practice with abnormal results into categories indicating the type of abnormality and what action was taken after the result was obtained (table 1). There was a difference among the practices in the rate of abnormal results, and their proportional contribution to each practice's total may help to explain this difference.

The categories were as follows: (a) monitoring—included all follow up of treatment in patients with chronic disease, an abnormal result often leading to an adjustment in existing treatment; (b) chronic conditions—included all newly diagnosed chronic complaints, such as heart disease and osteoarthritis, when no referral was made and necessary treatment was carried out by the general practitioner; (c) acute conditions—included all acute conditions that were detected and treated by the general practitioner only, such as urinary tract infections; (d) no further action—included results that were abnormal but for which no treatment was thought to be necessary, such as erythrocyte sedimentation rates in the middle range; (e) referral—included all cases where referral for opinion or admission was made after the general practitioner received one or more abnormal results.

Discussion

Table 1 shows that practice C not only investigated appreciably more of their patients than the other three practices, but that of the patients investigated a higher proportion had an abnormality. We expected the figures for patients with an abnormal result as a percentage of patients investigated to be similar for all the practices. If each practice investigated a similar population with an essentially similar distribution of morbidity you might expect the proportion of abnormal patients detected to be similar irrespective of the numbers each practice decided to investigate. This was so for practices A, B, and D, but practice C had an appreciably higher percentage of patients with abnormal results (29.8%) than the other three. Why should this be so?

In investigating a higher proportion of their patients than the other three practices C perhaps selected people who may have been more likely to give an abnormal result—those with existing chronic complaints such as diabetes. Practice C did appreciably more monitoring than the other practices. Such patients with chronic disorders are obviously not certain to give abnormal investigation results, but they may be more likely to than the "ordinary" patient with a non-chronic complaint being investigated. Perhaps the morbidity that the four practices were seeing was different, even though they drew their patients from essentially the same population, but we have no way of knowing if this is the case.

Table 1 shows that as the practices investigated a greater percentage of their patients seen in the surgery (column 3) so the percentage of abnormal results rose (column 6). This may seem logical, but an increase in the number of patients investigated as a percentage of patients seen in the surgery seems to lead to a larger increase in the number of patients detected with disease. That is, investigating more patients leads to disproportionately more patients with abnormalities being detected. Practice C's figures for patients with abnormalities may be inflated owing to a statistically significantly higher level of monitoring. Practice D, however, did not have a statistically

significantly higher level of monitoring than A or B but still had a disproportionately higher number of patients with abnormalities related to surgery encounters than A and B.

Undoubtedly a small percentage of patients with disease will remain undetected, and it would be preposterous and financially impossible to advocate investigating all patients the general practitioner sees to eliminate this small percentage. There seems, however, to be a case for maintaining a rate of investigation at around the 17% level rather than the 9% level, with doctors making greater use of the open access facilities for monitoring chronically ill patients.

We have already considered monitoring above, but table 11 shows that there is also a statistically significant difference among the practices in terms of the proportion of abnormal results yielded by new chronic and acute cases and also in the level of referrals. No significant difference between the

TABLE 11—Management of patients from four practices with one or more abnormal results

	Practice			
	A	B	C	D
	No of patients (%)	No of patients (%)	No of patients (%)	No of patients (%)
Monitoring*	12 (12.6)	12 (10.3)	93 (21.5)	54 (13.8)
New chronic	31 (34.7)	47 (37.8)	180 (41.6)	106 (27.0)
Acute conditions	11 (11.9)	67 (52.8)	180 (41.6)	106 (27.0)
No further action	17 (17.6)	11 (11.2)	34 (7.9)	37 (9.4)
Referral				
Total	95	116	433	392

* $\chi^2 = 14.07$, d.f. = 3, $p < 0.01$.
 $\chi^2 = 8.9$, d.f. = 3, $p < 0.05$.
 $\chi^2 = 15.07$, d.f. = 3, $p < 0.01$.
 χ^2 not significant.
 $\chi^2 = 9.10$, d.f. = 3, $p < 0.05$.

three practices for the number of new chronic conditions exists if the χ^2 test is applied to practices A, C, and D only. Practice B had a significantly lower level of patients with new chronic disorders, perhaps due to their low use of x-ray examinations (other than chest x-ray examinations). Many of these new chronic patients had conditions such as osteoarthritis, detected by the use of x-ray films.

All four practices differed greatly in the number of new acute cases producing abnormal results. Appreciably more of practice B's abnormal results were the result of acute episodes of illness than in practices C and D, which would have had an appreciably higher proportion of new acute cases than practice A. This low level of acute abnormalities for practice A may be related to the level of patients with abnormalities that are referred by the practice. Practice A had an appreciably higher rate of referral on an abnormal investigation result (or results) than the other three practices, but there was no such difference between practices B, C, and D. This may reflect a difference between practice A and the other three practices as regards the degree or type of abnormality they were prepared to treat before they considered referral necessary. Practice A may have referred patients at an earlier stage in the natural history of particular conditions than

Family Practice Abroad

Primary health care in Barcelona

GABRIEL J SCALLY

The opportunity to observe health services abroad is widely thought to be beneficial to medical students during their training. All doctors in Northern Ireland who have completed their vocational training in general practice also have the opportunity to see how general practice is organised outside Northern Ireland. This with the help of a grant I spent three weeks in Barcelona visiting various health centres and offices in the city and its surrounding area. The general practitioners, public health doctors, and other health professionals I met fortunately spoke English, thus sparing me having to use my minimal Spanish and non-existent Catalan.

Barcelona is the capital of the historic region of Catalonia, and the discrete Catalan identity has been reinforced by the high degree of autonomy granted to Catalonia in the post-Franco era. The recent transition to democracy has created a climate that has led to questioning the efficiency and effectiveness of all social structures, including health services. Thus primary medical services have been debated and discussed widely and are entering a period of adjustment.

A unified state-run health service, such as we are familiar with in the United Kingdom, does not exist in Spain and there is no universal entitlement to health services. The provision of health services largely depends on the social security system and is in theory limited to people who are employed and their families. Each employee holds a card (*cartilla*) that entitles him or her and family to free health care. In practice, access to health care is almost universal, although at a time of rising unemployment such access is being threatened.

Preventive health care

Because there is no unified health service a fundamental division in the provision of primary care exists between the preventive and curative services, the former being the responsibility of the local authority. Although there is a legal requirement for local authorities to provide public health services and preventive health care, this is rarely enforced. In many areas, particularly poor working class residential areas, these services simply do not exist. This situation is not altogether surprising since the population of the city of Barcelona is served by upwards of 900 separate local authorities.

The most prosperous local authority covers the city of Barcelona, which has a population of 1.7m. The public health department of Barcelona has a programme of preventive and

public health activities. It monitors food and water hygiene, inspects housing conditions in the city, and provides family planning, vaccination, and immunisation services for the population as these are not provided by general medical practitioners. Health education is a high priority, and a team of four doctors and three nurses work full time on health education. The health department has made a major health survey of a random sample of households in Barcelona, based on the most relevant elements of similar community surveys in Britain, the United States, and Scandinavia, to provide a health profile for planning and development. The department maintains a high public profile and attempts to encourage public awareness and participation in all its activities.

General practitioner services

The working life of a general practitioner in Barcelona differs from that of a general practitioner in the United Kingdom because the scope of general practice is more limited, the pathway of referral to specialist medical care is much more complicated, and the hours worked far fewer. The scope of the general practitioner's work is limited not only by having no responsibility for preventive medicine but also by the existence of the general practice paediatrician. This specialised general practitioner treats children up to the age of 7 years. The division in family care is further complicated by the paediatrician's work in hospitals treating patients up to the age of 14. Referral from general practice for further advice and treatment is not directly to a specialist in hospital but rather initially to a tier of specialists in health centres (*ambulatorios*). These specialists work without direct access to beds and with only limited diagnostic facilities. If inpatient treatment or investigation is required there is a further referral to a specialist in hospital.

The general practitioner spends only two and a half hours each weekday at premises (*consultorios*) owned by the social security organisation, but many spend the rest of the day in private practice. Remuneration for this, admittedly, short day is not compared with that in the United Kingdom (approximately £350-£400 a month) and is based on the number of cards held by the general practitioner. The number of cards does not necessarily reflect the number of patients, however, as a card may also cover an unspecified number of members of the cardholder's family. The average number of persons per card in Barcelona has recently been calculated at 1.98. Such a system obviously makes it difficult to construct practice registers based on population, such as age-sex registers. Although the general practitioners are available for only two and a half hours a day at the consulting room, they are responsible for dealing with emergencies between 9 am and 5 pm. Outside these hours there is a further service (*servicio especial d'urgència*) that deals with emergency calls. It is not based in hospital and undertakes home visits and treats patients who attend its facilities. If the patients require further treatment they must be referred to a hospital.

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the other practices. It has been shown that individual general practitioners have their own "set" rate of referring patients that might be unaffected by most of the external conditions that might be thought to be important.

There was no statistically significant difference among the practices in the number of patients who had an abnormal result and no record of subsequent action in the notes. As well as measuring genuine differences between the other practices, here how astoundingly the general practitioners fill in patients' notes. Some treatment or further action may have been taken on

cases recorded in this section but no mention of it made in the notes. To what extent this contributes to each practice's figures in this section we do not know.

This is the third part of a four part paper.

Reference

- 1 Cummins RO, Jernam R, Whorff PD. General practitioners have different "referral" thresholds? *Br Med J* 1982;285:107-9.

Diary of Urban Marks: 1880-1949

After a few days at home, having distributed my presents and recounted my adventures to the East, I returned to Swansea as I had promised Dr Nelson Jones so to do. Needless to say, he was very pleased to see me and we commenced to discuss the situation. He told me that at one time he had had a very large practice but as time went on and as competition arose, combined with the inevitable Anno Domini, the practice had gradually dwindled. He had no doubt a younger man would bring grit to the mill but he was very doubtful as to the amount of money I should put into the practice. He suddenly recollected that there was a practice going for sale at Trinity Place. We agreed that I should get into touch with Dr John Davies, who I owned it, and see what the income was and what was being asked for it. I had no intention of buying the practice and my conversation with Davies was merely to act as a basis between Jones and myself.

I rang up Davies and he asked me to dinner to Manelton, where he was living. During the meal he told me he wanted to sell Trinity Place. Davies was 37 years of age and had been married only four months. Some seven years previously he had been in practice at Manelton. His brother Tom had qualified and John had found most of the money for his education. Now John had no particular liking for medical work and was more devoted to engineering. At the time Tom qualified the Trinity Place practice came on the market owing to the death of Dr Forsyth. John bought it and put Tom at Manelton as assistant. He paid Tom so much a year for this and in the meantime John worked at Trinity Place. As John was a bachelor during the whole of this time and can imagine that John did very little work at Trinity Place. He kept no books but paid income tax on £250 as far as Trinity Place was concerned. He did not know whether this had been earned or not. The tax was only 1/- in the pound and this amount did not worry John. In fact, at Trinity Place he worked if he felt like it and more than once had told people clearly to run off. Moreover, it was not said as nicely as I have written this. So this went on for seven years and John got married in November of 1907. He took up his residence with the wife at no 1 Trinity Place but had no sooner settled down than the honeymoon than Tom died of pneumonia. As the Manelton practice was dependent on the Works, which paid three pounds weekly for the wife and children and man, there was a steady income and performance he was compelled to go back to Manelton and work the practice there. He had been back for three months when I happened along. He told me that I would have to make up my mind as to whether he was worth £250 for the practice. He guaranteed that he would be able to transfer a lot of sheepdogs to me and also a lot of Borderers. The sheepdogs were worth £50 per year and the other dogs were worth £25, so that my rent and rates would be paid by them. The rent of Trinity Place was £40 at the time. Also included in the purchase price was to be the electric fittings and the stock of drugs on the premises.

I hastened back to Jones and when he heard the proposition insisted that I must buy the practice. He said that I could assist him

from there just as much as being on his own premises. He also said that I could not fail to do well at Trinity Place since the district was fairly shouting for a young doctor. I asked him where I was to get the money from. Without a word he went over to his desk and began to write. I suspected what he was doing. He was going to lend me £250 without a penny interest. I thanked him for this but said that I had better consult my father first. He told me to invite my father down, and in the meantime I telephoned Davies to say that I would take the practice at the terms mentioned. I wired to the "old man" and he came down the next day direct from London. He stayed with Jones and after dinner they commenced to talk of everything under the sun except my father. Both the old men were of the same kidney and had much in common, especially the whisky. After some time I ventured to remark that I was the chief subject for discussion. Jones therefore began to impress my father that the chance now offered to me was the opportunity of a lifetime. He told my "goodness" that he had such faith in me that he would lend me the necessary money but Dad had other views, although he did not forget to thank Nelson Jones for his kindness. He thought that Uncle Urban Asprey would be willing to lend me the money but if he did not so then I could fall back on Jones. Dad returned to London and got into touch with Asprey who agreed to lend the money at 5% interest. I was to pay back the principal as best I could but he suggested that I should pay £5 monthly and the interest could be adjusted as necessary.

I saw Davies on the next day and explained to him that I could not possibly give him the whole of the purchase money at once. We agreed therefore that £100 should be paid at once and £40 at the end of the year. Davies had taken a fancy to me and after some discussion as to how we could work together he actually agreed to take £140 for the practice. No agreement was signed, Davies trusting me absolutely.

The next few days saw me very busy at Trinity Place. I had no need to find a housekeeper. Davies had an elderly female called Elizabeth in charge of Trinity Place. She had been with him for years and readily agreed to stop with me. Her only disability was that she was stone deaf, but nevertheless she never far as I know failed to hear a patient. Her bedroom was already furnished but I had to get the dining room fitted out as best I could, remembering that it would have to serve as a waiting room and a living room. The surgery was in front of the house and I used together with a couch which was rolled up took nicely. An electric fitting was on the wall and this was used to inspect the nose, eye, and throat. A large mirror was in front of the couch and the one I used together with a couch which was made locally for three pounds completed the outfit in this room. There was a large cupboard which ran through into the dining room. The cupboard was used for dispensing and was large enough to contain all I required in the way of drugs. No water was laid on and I had to use a large filter. My own bedroom was at the back facing George Place. It was very sparsely furnished, most of the things having to be got in the sale rooms. No other rooms were furnished but were left absolutely bare.

General practice workload

The major structural differences in primary medical care between Catalonia and the United Kingdom are paralleled by (and indeed perhaps responsible for) major differences in workload. A result of a survey of workload among general practitioners in Barcelona carried out in 1980-1 showed an average of 9.3 consultations per patient a year, whereas in the United Kingdom the figure is 3.0 from the Second National Morbidity Study in 1970-1. But in Catalonia these consultations occur during two and a half hours a day. On average there were 48 visits per general practitioner a day, so each consultation lasted approximately three minutes. This rapid rate combined with an almost complete absence of appointment systems ensures large queues, which is reflected in the design of health centres where more space is allocated to waiting areas than to consulting rooms. In the same survey general practitioners were asked the reason for consultation: 48% of the visits were thought to be of "bureaucratic" origin, mainly certification.

The family doctors' movement

The years since 1978 have seen the growth of a family doctors' movement inspired by the experience of the Royal College of General Practitioners and the growth of "family medicine" in the USA. Formally recognised as a specialty in 1978, family medicine has grown steadily and now has a vocational training scheme closely similar to that in the United Kingdom. The scheme started in 1981 and will produce 300 trained family doctors a year for the whole of Spain, which is still a small percentage of doctors entering primary medical care. Trainees are taught paediatrics, but owing to the division of care it is not possible to put these skills into practice with children under 7. Entry into general practice training, as with all specialty training, is by examination. Similarly, after completion of training a further examination must be taken to enter state employment. There is, however, a weighting for the candidates who undertook specialty training.

The family doctors' movement has as one of its goals improving the standards of postgraduate training and encouraging continuing education in family medicine. Those in the movement

also believe that a substantial increase in salary would increase motivation and enable the length of the working day to be extended to six hours. The encouragement of teamwork in the primary health care centres is regarded as important, as is integrating preventive and curative services. The family doctors believe that these initiatives would greatly improve the quality of primary medical care. There is concern, however, among doctors working in public health that the family doctors have unrealistic expectations of the amount of work that one doctor can perform.

Two encouraging developments, from the point of view of the family doctors, have occurred recently. In a working class residential area, Ciutat Badia, just outside Barcelona, a purpose built health centre has been opened, which provides comprehensive and integrated primary health care to a population of 33 000. This health centre is unique in Catalonia because all the general practitioners work six hours a day. Although extra resources had to be committed to this project, after only six months of operation both the prescription rate and referral rate had fallen. The second initiative is the development and evaluation of an A4 size problem oriented medical record, which would replace a record similar to the "Lloyd George" type still widely used in the United Kingdom.

Conclusions

The primary medical care service in Catalonia is thought by most of those who work in it to be substantial alteration. The possibility of organisational change is facilitated by the fact that doctors are employed and their premises are publicly owned. The example of the experimental health centre at Ciutat Badia shows that there is the political will to innovate and evaluate. This, combined with the growing strength of the family doctors' movement, may provoke substantial change, and the government has said that 1984 will see the introduction of legislation paving the way for a unified health service with universal coverage.

I thank Dr Oriol Ramis for his kindness and help throughout my visit.

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Diary of Urban Marks: 1880-1949

I had a name plate manufactured setting forth my qualifications and consulting hours. The telephone was already in the place and so on 1 February 1908 everything was in readiness to receive patients and I looked forward to the time when people who needed my help would be standing in a queue outside the house. It had been agreed between John Davies and myself that as far as the sheepdogs and Borderers were concerned I should act as his assistant until such time as it was safe to announce that I was on my own. John informed the two clubs to this effect and my first patients were naturally from them. At the end of the quarter the money due to me was paid by them to me and I handed John two thirds of the total amount retaining the residue for myself. In regard to the other expenses such as electric light, gas, and rent I paid John one month of the quarter. At the beginning of the next quarter I paid all my own expenses in full.

The house had to be transferred to me and Mrs Forsyth was willing to do so but put the rent to £44 as against the £40 John had been paying. I could not object as the lease was a repairing one and

the house was getting old. But within four years the landlady had to replace all the drains, which had to be done by order of the medical officers. I should go through the club and get much change out of her money.

To make things safer for myself I asked to be initiated as a Shepherd. Two of the older members proposed and seconded me and in a few weeks I went through the formal ceremony. What it was all about I have forgotten but the idea of the ceremony was to assist the brethren in distress much as the Freemasons do. Only in this case for a weekly subscription a doctor was provided and a certain sum of money granted in illness. I was not so fortunate a member than it was proposed that I should go through the club starting as secretary and then vice until I reached the chair itself. This suited my book very well and I became the minute secretary. At the end of two years I had held all the offices and then applied for the position as surgeon to the club which John Davies by arrangement resigned at this time. Needless to say, I was appointed "min. con." I retained this club until the National Insurance Act put an end to all club work.