TABLE I—*Underregistration caused by delay in registration in the four areas*

	Area				Total No
	1	2	3	4	
No of patients who registered in 1980	166	337	92	344	939
No that would be underregistered if patients registered three months after arriving in the area	42	84	23	86	235
No of patients found not registered	36	72	26	87	221
(As percentage of population)	2·77	5·35	2·34	2·17	2·84

TABLE II—*Number of patients in each age group over-registered at the time of the study and removed during the year before the study*

Age group (years)	Population registered (June 1980)	Overregistered (April 1980)	Removed 1979
0–4	711	12	62
5–9	766	55	70
10–19	1147	86	80
20–29	1280	155	171
30–39	1503	163	150
40–49	730	53	42
50–59	551	43	27
60–69	485	23	20
70–79	385	30	34
Over 80	191	24	29
Total No	7774	646	669

TABLE III—*Overregistration rate and removals a year in a boys school with 60 places*

Year	No overregistered	No removed
1971	0	0
1972	19	0
1973	37	15
1974	42	36
1975	51	38
1976	54	22
1977	59	35
1978	62	28
1979	57	39
1980	56	33

the administrative delay was six months, an expected overregistration rate may be calculated (fig 2). In fact, the proportion overregistered was different in two respects: firstly, after the first year there was an increasing lag in the build up of overregistered patients so that eventually the peak of overregistration was four years behind the peak of removals, a time lag far greater than any routine administrative delay. Secondly, the proportion overregistered failed to follow the fall shown by the removal rate, and remained much higher than expected. After 11 years a stable state was reached with the proportion of the remaining population overregistered about twice that of the proportion removed.

The more detailed figures available from the small boarding school made it possible to look at the same point over a period of years. During the second and third years after the school opened most of the boys who had left the school remained on the register as over-registered patients (table III). Later it is apparent that there was a consistently smaller number of boys removed than had left the year before. The result was a steady increase in the number of over-registered for six years after the school opened, after which time a stable state was reached. The school population was replaced every two years and this rapid and total turnover was associated, after six years, with an overregistration rate of about 100%.

Discussion

Even registers with a reliable updating procedure will have inaccuracies reflecting the methods used in making the changes as well as receiving outdated and incomplete, if not incorrect, information. Our findings are consistent with the hypothesis that underregistration is simply the result of the delay in registration.

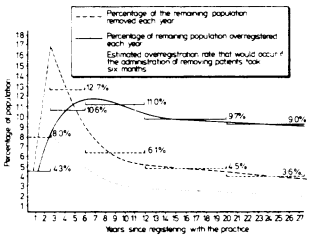

FIG 2—Percentage of the remaining population removed and overregistered each year after initially registering with the practice.

The similarity of the structure of patients overregistered and removed indicates that overregistration is the outcome of the removal process. The implication of our findings is that removed patients, in a stable practice, are sufficiently constant in population terms to describe prospectively the overregistered patients for the purposes of a population denominator.

The size of the overregistered population reflects the overall removal time. Our findings that the overregistered figure was the same as the annual removal rate indicated that the average removal time is about one year. This suggests an administrative delay of about nine months, which must be at least twice as long as the routine administrative delay. The reason for this anomaly was shown by the accumulation of patients overregistered when separated according to duration of registration, and confirmed by the figures from the small boarding school. The evidence therefore suggests that at least half the time estimated as being due to administrative delay was accounted for by the occasional name, perhaps 1 in 10, being missed or mismatched during removal and such names accumulating as overregistered patients until eventually discovered in the register. The relatively few patients aged under 5 who were overregistered supports this theory, as insufficient numbers would have time to leave and the occasional one be missed before they were aged over 5, which is the same story as the first duration of registration group.

The variations and complexity of the removal process have been highlighted by Fraser.[3] Hannay and Maddox noted the similarity in age between those overregistered and those on the move, and also cited instances of patients who had remained overregistered for 20 to 60 years on a register they studied.[4] We seldom knew when patients we found to be overregistered had left the practice. Figures are likely to vary among practices. For instance, Fraser's figures indicate that changing doctors was quicker in every respect in his area than in ours. Then the high overregistration rate found by Morell *et al*[5] might have been the result of high turnover. They also estimated an underregistration rate to equal the half yearly removal rate, which could be true in an area where patients may come and go without ever registering with a doctor.

Overregistration, and consequently list inflation, can be reduced to those inevitable from patient delays and behaviour if computerised family practitioner committee registers were linked with the practice. But if the population denominator only of the practice is needed our figures indicate that a fairly accurate correction could be made if two items of information were available: firstly, the number and description of patients removed each year, and, secondly, the administrative removal delay—that is, the date each removal registered with another doctor or left for other reasons. This date has always been known

to the family practitioner committee and attention is paid to it since the pay of a doctor may be deducted retrospectively from that date.[6] If this date can be passed on to the practice, and every time a patient's name was removed from the register, including those discovered in the practice, this date was noted, then it would be possible to calculate an estimated proportion of the previous year's removals that would be represented on the register as overregistered patients.

With computerisation it is possible to unify practice and family practitioner committee registers, but so long as they remain separate there will continue to be considerable contamination of practice registers with overregistered patients. If a practice register is computerised it would not be difficult to build into the software a system to correct any population figures for estimated overregistration.

This study was supported by the Milton Keynes Development Corporation. The work of tracing patients was done by Mrs Joan Judd. We are especially indebted to the late Mr R Burch of the Bucks Family Practitioners Committee for his advice, to Mrs E Bodill for secretarial help, to the receptionists of the Stony Stratford Health Centre for scrutiny of the lists, and to the doctors of the Stony Stratford, Wolverton, and Stantonbury Health Centres for help and cooperation.

References

1 Goodman M. Using the age-sex register. *J R Coll Gen Pract* 1975;**25**: 379–82.
2 Cobb JS, Miles DPB, Limentani AE. Do patients who move to a new town consult their doctor more often? *Br Med J* 1983;**287**:1411–3.
3 Fraser RC. Patient movements and the accuracy of the age-sex register. *J R Coll Gen Pract* 1982;**32**:615–22.
4 Hannay DR, Maddox EG. Missing patients on a health centre file. *Community Health* 1977;**8**:210–6.
5 Morrell DC, Gage HG, Robinson NA. Patterns of demand in general practice. *J R Coll Gen Pract* 1970;**19** 331–42.
6 Department of Health and Social Security. *Statement of fees and allowances payable to general medical practitioners in England and Wales*. January 1982. (SFA 79 71.3.)

(*Accepted 23 September 1983*)

Overlapping General Practice

Samaritans: amateur lifesavers

Early this year a distraught woman poured out a long and complicated life story to a Samaritan in the Horsham centre. In our shabby sitting room, a cup of tea in her shaking hands, she explained that years ago she had been an alcoholic, at her lowest ebb, sleeping rough during "binges," and involved in minor prostitution. Now, cured of her drinking, comfortably married, but victim of occasional depressions, her doctor had been prescribing Valium for her. Concerned that she may become dependent on the drug, she planned to reduce the amounts prescribed, and our caller's fear was that her craving for alcohol to augment the diminishing supplies of Valium would become irresistible and that she would begin to drink again. Asked whether her doctor was aware of her fears, she replied that she was a gentle, kind, and sympathetic woman, far too nice to hear her sordid tale.

We Samaritans have built up a composite picture of the stereotype general practitioner from descriptions given to us by our callers. Whether man or woman, the general practitioner is invariably tall, well dressed, seated on a leather chair behind a large desk, and protected by a formidable receptionist. The general practitioner is "judged" according to our caller's reaction to him, so that a quality found to be an asset by one caller will often be deemed a disadvantage by another. Hence the general practitioner's highly professional approach and air of competence bring confidence to one patient, but feelings of his own inadequacy to another patient. The general practitioner's patience and gentleness may be exactly the key to the trust of some patients but will increase the embarrassment and reticence of patients who, like our caller, have a sordid tale to tell. When his patient is tongue tied and puzzled the stereotype general practitioner's cultured accent and wide vocabulary help only to widen the gulf between them.

Samaritan volunteers are, in contrast, supremely ordinary people, working in an entirely non-professional capacity, but with the benefit of vast collective experience and extensive individual preparation and training. Our only aim is to befriend and support the suicidal or despairing people who contact us. Different people react in different ways: a problem that has one person reaching blindly for the sleeping pills will be dealt with calmly by another. The reasons our callers give for contacting the Samaritans are many and varied—from the 9 year old who had lost his mother's change on the way back from the shops and was too scared to go home, to the drunk driver whose family died in the crash he caused and who wanted to die himself.

No rustle of paper

The unshockable and non-judgmental attitude that Samaritans maintain towards callers effectively widens the scope of the work we are able to do. Problems considered "unspeakable" by many other agencies and individuals are dealt with daily by Samaritans all over Britain. Confessions of infidelity, glue sniffing, and incest are heard without prejudice. Transvestites and transsexuals call us simply to talk. Runaway adolescents use us as a temporary bolt hole. General practitioners, social workers, Department of Health staff, and many others have a *duty* to ask questions, check facts, and fill in forms. Samaritans do not. Many of our callers undoubtedly feel far less inhibited when the officious rustle of paper is silenced, so that a Samaritan can often build up a more complete picture of the caller's entire problem, and also of the caller's ability—or lack of it—to help himself, than other more constrained agencies can. Once an atmosphere of sympathy and trust has been built up we are more likely to be able to guide our callers to the specialist help they need.

Helping our callers to seek necessary medical advice is therefore a regular part of Samaritan befriending. Working as non-professionals, and limited only by Samaritan principles, we can be guided by advice from the general practitioner concerned, so that encouraging our caller to visit the surgery and explain the *whole* problem is often only the beginning of a long partnership between doctor and Samaritan.

Written by one of 115 volunteers of the Horsham and Crawley Samaritans, 21 Denne Road, Horsham, West Sussex; tel Horsham 56111 or Crawley 34549 day or night.

In line with national Samaritan policy, as part of our absolute respect for the confidentiality (and, if they wish, anonymity) of our callers, we will never contact a doctor without the prior consent of his patient. For many years, however, general practitioners have referred their patients to the Samaritans, leaving the onus on the patient to make contact, and now it is possible for the general practitioner to ask the Samaritans to contact a consenting patient to offer support. Well trained Samaritan volunteers can do this with the necessary perception, delicacy, and tact, so that help is accepted at least as often as it is refused.

Samaritans deal in emotions, some of which may have enormous bearing on a person's physical problems, but for which there are no medical remedies. Where contact is made between Samaritan and general practitioner any exchange of information on their caller-patient which takes place must be in the best interest of all three parties. The general practitioner is able to use the Samaritans as unpaid help. Samaritans are able to reduce the burden on the doctor of chronic cases—from hypochondria to terminal cancer—by being available 24 hours a day, seven days a week simply to listen to and support the patient—and thus the doctor—for however long we are needed. We can be of practical help in some small way, by encouraging our caller to keep surgery appointments, and continue with the treatment as prescribed, and by visiting him in hospital if necessary, but more importantly, we can help to ease his *mind* while his *body* is being treated.

Contact between Samaritans and general practitioners is carefully monitored for maximum effect. Only senior Samaritans are permitted to contact general practitioners, or, in fact, any other professional adviser. Even so, on occasions manipulative callers have "used" Samaritans in an attempt to discomfort their doctor: "I want *you* to call him and tell him just how bad I feel." In most cases the ensuing discussion may be of great help to both general practitioner and Samaritan in planning the continuing treatment or the befriending of their patient-caller. More awkward problems may arise, however. One occurred when a caller told us that she wanted to find another general practitioner because the one she had been seeing was an old family friend with whom she found intimate detail impossible to discuss. We supported her, but offered no suggestion whatsoever as to her choice, and were appalled later when the new general practitioner our caller chose was angrily accused of "using the Samaritans to tout for trade" by the old family friend after our caller had tried to explain her reasons for the switch. Samaritans and doctors need to be well aware of the possible difficulties of three way communication.

Often Samaritan and doctor meet at a time when their caller-patient has actually made a suicide attempt and when forward planning is essential to prevent another such attempt. The incidence of suicide and parasuicide, particularly among young people, is on the increase, highlighting a problem where liaison between Samaritan and general practitioner may be most effective. All too often lack of communication between himself and the adult world is what drives the adolescent to attempt suicide. As an organisation Samaritans Incorporated are trying hard to encourage young people in trouble to telephone for help. Horsham and Crawley Samaritans visit schools and colleges in the area talking to and with pupils and staff in an attempt to make the name and aims of the Samaritans familiar to each and every person before he or she leaves full time education. Our speakers also visit hospital casualty departments and local neighbourhood health centres so that their staff are well informed as to the range of the work of the Samaritans. Use of the Samaritans by the medical profession is increasing steadily.

One new contact we have made this year is the general practitioner mentioned earlier: the gentle, kind, and sympathetic woman our caller could not bear to tell her sordid story to. After talking her fears through with her for hours on end over a period of weeks, our caller finally gave permission for her Samaritan befriender to go with her to see the doctor. The Samaritan, sitting beside our caller in the surgery, gently helped her to explain the reasons behind her unwillingness to cooperate in reducing her Valium intake. "My God," said the doctor, "This puts a new light on the whole thing. Why on earth didn't you tell me before?"

Papers That Have Changed My Practice

More than one source of enlightenment

PATRIA ASHER

The communication that has had the most effect on my day to day practice was a chance remark of Professor J M Malins in the diabetic clinic at the General Hospital, Birmingham. He suggested that *weighing the patient* was possibly the most useful investigation they carried out. Since then I have assiduously weighed patients new and old, and have discovered how often the patient's weight is the best measure of his progress, while a sudden unexpected loss of weight may be the first sign of serious disease.

6 Bellevue, Birmingham B5 7LX
PATRIA ASHER, MD, MRCP, general practitioner

The printed word, in fact, is not our only source of enlightenment. New ideas percolate by a kind of osmotic process. Twenty years ago many hypertensive patients were treated with reserpine; then it was methyldopa, and then came the great age of the beta-blockers, with vasodilators or, more recently, calcium antagonists added in difficult cases. I must have read articles advocating these changes in preferred treatment, but none stays in the memory. Hospital letters and clinical meetings contribute as much or more to the dissemination of new ideas. If most of my hypertensive patients on discharge from hospital seem to be taking beta-blockers these drugs are likely to become the treatment of choice in my practice; and I first heard of the adverse reactions to practolol at a clinical meeting, just before the spate of papers in the journals on the subject.

Macrocytosis in alcoholics

To stay in the mind, as well as to influence the practice, an original article must be truly original and must deal with common clinical problems. "Macrocytosis of chronic alcoholism" by Wu, Chanarin, and Levi[1] fulfils both criteria. The authors were the first to report macrocytosis in the blood of alcoholics who were neither anaemic, folate deficient, or suffering from liver disease. Even if the serum folate was reduced, treatment with folic acid did not correct the macrocytosis, whereas red cell size returned to normal if the subjects stopped drinking. The 63 patients they studied were well nourished and generally in normal employment. They all drank at least 80 g ethanol a day—the equivalent of four pints of light ale—a small intake by the standards of many of my patients.

The authors suggested that macrocytosis, especially in the absence of anaemia, could be "a useful indicator in identifying a problem that is often concealed from the physician." I have confirmed this again and again. Formerly I had relied on liver function tests in cases of suspected alcoholism, but these are often normal until a much later stage. Now I take blood for full blood count in any case of admitted or suspected alcohol abuse. If the mean cell volume is above 90 fl in an otherwise normal blood count I suspect alcohol abuse; if above 100 fl I am pretty sure of it. Sometimes macrocytosis is a surprise finding in a routine blood count. The patient is then asked about his or her alcohol intake at the next consultation. More often the drink question has been raised already and the patient has admitted what he considers the modest intake of four or five pints a day. The result of the blood test gives the opportunity for a little gentle arm twisting: "The test shows that the alcohol has already affected your blood," I say in serious tones, and we go on to discuss the relative merits of abstinence and cutting down. At least it's a start; though it's a long, long way from the diagnosis of alcoholism to its successful treatment.

Stage fright

My second example of a truly memorable and original article is "Effect of oxprenolol on stage fright in musicians" by James, Griffith, Pearson, and Newbury.[2] This most readable article is imaginative in design and impressive in results. The 24 subjects—all aspiring professional string players—were not simply asked if oxprenolol made them less nervous (this had already been done).[3] Their performances were assessed in a double blind trial by two professional musicians under conditions as nearly as possible those of a public recital before an invited audience at the Wigmore Hall, with plenty of anxiety producing recording equipment and representatives of press and broadcasting. Each subject played two set pieces on two consecutive days, having taken 40 mg of oxprenolol on one day and placebo on the other. The players' feelings of nervousness were graded from "nonchalant" to "panicky" and their assessment of their own performances graded from "very good" to "terrible." The judges marked their performances for musicianship, vibrato, intonation, etc, and for degree of tremor. Oxprenolol produced a great improvement in self assessments and still more in the assessors' scores. The most striking improvement was in the lessening of tremor—that terrifying disorder (known to professional musicians as The Fearies) when the bowing arm seems to have a life of its own, its shaking quite out of the control of the player's conscious mind.

I seldom have to treat professional musicians for stage fright; the paper was unforgettable as I am a nervous string player myself and have personally confirmed the beneficial effects of beta-blockers in preventing The Fearies. There are, however, many other occasions when acute anxiety produces physical symptoms such as palpitation, dry mouth, clammy palms, and tremor. I have prescribed beta-blockers to patients before alarming events, such as driving tests or flying for the first time. I explain the way the drug acts and give a test dose to make sure there are no undesirable effects. I also prescribe beta-blockers in cases of anxiety with pronounced physical symptoms. Though I can quote no figures, my impression is that the treatment is helpful but less strikingly so in generalised anxiety than in the occasional frightening ordeal.

Sore bottoms

Many original papers are so erudite that they are incomprehensible to the average practitioner; the *BMJ* recognises this by setting them in miniprint in the Practice Observed edition. On the whole I learn more from review articles, and my third example of an influential paper is a signed leader in the *BMJ* on "Pruritus ani" by J Alexander-Williams.[4] This was published so recently (16 July 1983) that I can hardly claim that it has changed my practice—rather that I hope and believe it will. Pruritus ani, often thought of as so intractable, is described as "a cross between nappy rash, athlete's foot, and a self inflicted injury." A baby's bottom becomes sore and excoriated if left in contact with faeces; minute fragments of faecal material lodged in folds of adult perianal skin cause "adult nappy rash." Skin irregularities, caused by piles, imperfectly sutured episiotomies, for example, make it harder to clean the perineum. Moist conditions make matters worse: excessive sweating (tight jeans, nylon underwear), vaginal discharge, leaking urine, and local sepsis. Scratching damages the skin further and makes invasion by saprophytic fungi and bacteria more likely; skin sensitivity reactions to these saprophytes "may twist the vicious circle into a vicious spiral."

At this stage the sufferer "becomes subject to an even greater hazard—perianal polypharmacy." Typical local preparations contain "steroids, local anaesthetics, and antibiotics . . . it would be difficult to design any combination of drugs more likely to produce skin sensitivity." The first line of treatment is to stop all medication. After that "the essentials of treatment are to keep the perianal scrupulously clean and to protect it from physical trauma." Cleanliness with the minimum of trauma may be achieved by wet rather than dry wiping and the author recommends moist tissues such as Baby Wipes. "Probably the single most effective measure in the control of pruritus ani is the education of the patient in the nature of the condition and the rationale of its control" the author concludes.

The eye seizes on and the memory retains whatever confirms one's deep rooted prejudices. I am basically a non-treater, and when possible—that is, when I am feeling strong enough to battle against the public's demands for medication—I like a consultation to end without an FP10 changing hands. Hence my joy at the thought of a consultant surgeon prescribing Baby Wipes and suitable clothing rather than drugs or surgery. I have just seen a case of pruritus ani where I would certainly have treated the reddened perianal skin with ung hydrocortisone had I not read Mr Alexander-Williams's leader. Instead the poor man found himself discussing types of toilet paper (he'd always used the hard sort) and went off promising to use soft tissues followed by Baby Wipes in future. Sometimes, just sometimes, you *can* win!

References

1 Wu A, Chanarin I, Levi AJ. Macrocytosis of chronic alcoholism. *Lancet* 1974;i:829–30.
2 James IM, Griffith DNW, Pearson RM, Newbury P. Effect of oxprenolol on stage-fright in musicians. *Lancet* 1977;ii:952–4.
3 Liden S, Gottfries CG. Beta-blocking agents in the treatment of catecholamine-induced symptoms in musicians. *Lancet* 1974;ii: 529.
4 Alexander-Williams J. Pruritus ani. *Br Med J* 1983;**287**:159–60.