PRACTICE OBSERVED

Research in General Practice

A minority interest: why?

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General practitioners who carry out research are a distinct minority. Is this a necessary implication of the style and pressures of general practice, or does it just reflect the present stage of development of general practice as a specialty? Perhaps a more useful way to put the question is by asking why a busy general practitioner should bother to do research. What's in it for the researcher? In attempting to answer these questions it is worth examining the background to research in general practice.

Since the 1950s, as primary care has established its position as a credible academic discipline both through the teaching of medical students and through vocational training, there has been an acknowledged need for a core of knowledge. This would complement the knowledge base of hospital training while extending into those areas that are particularly the province of general practice. Many of the conditions seen in general practice are also seen in hospital but with different implications; but there are also some that we alone see and treat. To label these as "minor illnesses" would be misleading. Often these chronic diseases, social problems, and psychological disturbances cause as much morbidity from the patient's view as the "serious illness" seen in hospital.

Furthermore, our methods of delivering health care are unique. Whereas some aspects are duplicated in some areas of hospital medicine, we alone have continuing contact with patients through all their illnesses, and we alone are charged with looking at their health in the holistic context. General practitioners may control and change their methods of practising with more freedom than hospital doctors, who are inevitably constrained by their institutions. Different methods of health care are therefore more easily examined in primary care.

General practice is becoming the chosen vehicle for providing preventive care, taking over from the earlier screening programmes of colleagues in public health (now community physicians). Though hospitals do piecemeal screening, it is general practitioners who are best placed to take responsibility for coordinating and implementing preventive care. By being in the position to care for all the present and expected needs of a well defined group of patients, general practitioners are uniquely placed to examine and report on these. But it is regrettable that much of the research that is done in primary care emanates from university departments and community physicians.

It would be a mistake to give the impression that worthwhile research does not originate from general practice. In this journal recently there have been examples ranging from randomised control trials[1] and prospective control trials[2] to comparative studies of various kinds.[3 4] It is in comparative studies that general practice has the greatest potential for the researcher, and it is encouraging that journals are more willing to accept the "soft" data that these elicit compared with the "hard" data that randomised trials produce. A review of the publications and of my personal experience, however, does not suggest that many general practitioners regard research as part of their day to day work. And why should they?

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Motivations

CAREER STRUCTURE

In hospitals the traditional motivation in research has not been the desire to enhance the welfare of mankind through scientific knowledge but the more prosaic one—career enhancement. Many see the accumulation of references to published research as a necessary adjunct to ladder climbing, and many projects and articles are designed with this in mind. This is not necessarily a bad thing. Self advancement only reduces the value of the result if it causes less glamorous areas to be ignored, and the work to be superficial. These are possible outcomes with any research, however well intentioned. Some researchers in general practice may also be motivated by career enhancement. It is now acknowledged to be a considerable asset for applicants for academic posts to have an MD. Certainly a portfolio of published research articles is essential. For this reason many general practitioner researchers tend to be treated with some suspicion by their peers, who suspect an ulterior motive.

INCREASING THE CORE KNOWLEDGE OF GENERAL PRACTICE

There is much satisfaction in feeling that you have contributed, however slightly, to the information base that underpins your own work and that of colleagues. Even if the ideas and facts put forward are later modified or rejected they may have stimulated others to explore an area that might have remained fallow. On a personal note, a two year project in which a full time research assistant participated was germinated by a short article reporting the results of a patient questionnaire. Not only did I find the results hard to accept, but I considered the methodology deficient. The full project developed out of my desire to "set the record straight."[1]

It is only through questioning assumptions and a quest for factual rather than anecdotal information that we can improve the academic credentials of general practice and improve patient care. Many researchers see the altruistic aim of expanding our core of knowledge as sufficient justification. This must, however, be tempered by the reality that the chances of any one researcher's contribution being important on its own is extremely slim—this applies to all research, but probably more so to that in general practice.

EFFECT ON INDIVIDUAL AND HIS PRACTICE

Most of us are sufficiently bound by human motives to look for more than such idealism as the driving force behind research. There is a substantial benefit in self awareness and self education. Just doing the background reading, consulting many references (some useful but many not), and talking to colleagues and acknowledged authorities is an experience. Most other researchers are only too pleased to discuss their ideas and current projects, and this may be stimulating far beyond the confines of research.

Furthermore, any exercise in self analysis, either through audit or through a more structured research project, must lead to greater understanding of both the process and the outcome of a doctor's care. This applies as well to the members of a partnership who often provide the raw material that a researcher is examining. It is interesting that "audit" has a tainted reputation but "research," which is after all often the same activity formalised into objectivity, has maintained a good name. Perhaps it is because doctors feel that there is a moral climate developing that demands the former but no such obligation with the latter.

IN TRAINING AND TEACHING

Unlike my experience in the late 1960s, medical students—certainly in the newer medical schools like Nottingham—do projects throughout their course. These teach the principles that apply to any research—formulate a hypothesis, write a comprehensive protocol, gather data, compute the results, and present them clearly. They learn to be critical of accepted wisdom, to do literature searches, and to identify clearly the areas of doubt. These are assets in any doctor, researcher or not.

Most vocational trainees attempt a research project, and the quality of these is often high. Trainees have the advantage that most partners in teaching practices will cooperate to an extent that they often do not with a researching partner. Also, by agreeing a protocol between them, they may gain access to many practices and their patients. It is to be hoped that these students and trainees, after they have survived their first few years in practice will be the researchers of tomorrow. But it is perhaps a harsh judgment on current general practice that it is not usually regarded as helpful in partnership applications to dwell on an interest in research.

AS A SMALL GROUP ACTIVITY

Small groups are becoming a familiar aspect of general practice. Hospitals have their formal lectures and their less formal journal clubs, research clubs, and, of course, ward rounds. This need for learning from the common experience has surfaced in general practice, too. Some regions have established research groups, notably in recent years Wessex, in which a quorum of general practitioners has expanded their research possibilities by mutual support and access to resources such as statisticians. These groups have a dual benefit in both supporting the research work and the researcher. Like Balint groups, close knit research groups may act as a support for a doctor as a professional every bit as much as a researcher and for some doctors this is the principal benefit.

PERSONAL PLEASURE

No attempt to analyse why general practitioners do, and perhaps should do, research can be complete without considering personal pleasure, which I believe to be the most important motivation. It may, to be sure, have a strong masochistic element to it, especially when tables need to be drawn and articles written. But there is a considerable undeniable pleasure to be gained from formulating an idea or theory and the single minded exploration until it is proved or disproved. The fun of the chase is neatly complemented by the admittedly egotistical thrill of seeing the results published, especially in a reputable journal. Whether this makes for a better doctor is, perhaps, open to discussion. But in my view anything that helps to widen the interests and outlook of a doctor and anything that can make the routine of general practice more interesting (for those who require such extra stimulation) should be encouraged.

Conclusion

General practice has left its impoverished adolescence of the 1950s and its exuberant young adulthood of the 60s and 70s, and is now entering its maturity. It is only fair to expect that this should be accompanied by a greater responsibility towards sustaining and expanding the knowledge base of medicine. There are areas in which general practice is unique, and it behoves us to explore these. Research may broaden the professional horizons of doctors and their practices at the same time as it provides necessary data for the improvement of patient care. But all justifications for research are secondary to what many doctors overlook—behind the earnest veneer research is an exercise in curiosity and may be great fun for those who are fortunate enough to have discovered it. It is this pleasure that truly justifies the hard work and midnight oil.

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Practice Research

General practitioner attendance at emergencies notified to ambulance control

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Abstract

For two years doctors from a small village went to the scene of emergency calls received by ambulance control. On 80% of the occasions when the doctor was called at the same time as the ambulance was dispatched the doctor arrived before the ambulance. There were 24 incidents, 16 of which were road traffic accidents. In two cases the doctor established a clear airway in an unconscious patient before the ambulance arrived. Two patients were trapped in their vehicles and were given parenteral analgesics. Four patients required intravenous fluids.

The call out system provided first aid for patients before the ambulance arrived and medical assistance to the emergency services at serious accidents. Patients who did not require hospital attention could be examined and treated at the scene, making the ambulance available for other duties and reducing the number of patients taken to the hospital accident and emergency department.

Introduction

Each year roughly 85 000 people are killed or seriously injured on Britain's roads.[1] Despite the fact that most accidents occur in built up areas, in past years Cumbria has had a disproportionately high number of motor cycle accidents. In 1982, 35%, more riders of two wheeled motor vehicles were killed or seriously injured than would have been expected per head of population.[2] This study was stimulated by a local epidemic of motorcycle accidents whose sequellae included two young men with permanent brain damage, probably caused by prolonged anoxia.

Most people in Britain are not trained in first aid. In rural areas such as the Lake District ambulance services are limited by distance, narrow winding roads, locations that are difficult to find, and sometimes the weather. The aim of the study was to try to determine whether attendance at incidents by local doctors would improve the care of patients by giving first aid or by using medical skills not otherwise available at the scene.

Attendance at accidents by hospital doctors or general practitioners (mostly members of the British Association for Immediate Care (BASICS)) is not unusual.[3 4] Some schemes have hundreds of calls each year.[4 5] In most schemes, however, the primary purpose is to provide additional medical skills rather than early care before the arrival of the emergency services.

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Methods

Caldbeck (population approximately 300) is in the northern fells of the Lake District. Three general practitioners (two full time, one part time) live in Caldbeck and practise from a surgery in the village. There is no larger community within seven miles. The nearest ambulance stations are at Wigton (eight miles), Carlisle (14 miles), Penrith (16 miles), and Keswick (16 miles).

During the two year study period (1 February 1982-31 January 1984) all emergency (999) calls received by Cumbria ambulance control concerning incidents within a six mile radius of Caldbeck were relayed by the ambulance controller to the surgery or doctor on call by telephone at the same time as the nearest available ambulance was dispatched. All incidents including road traffic accidents and reports of patients who were collapsed were included, as were incidents reported first to the doctor by members of the public. Each doctor carried a Telecom radiopager[6] and could be contacted at all times when he was on duty.

During weekdays the nearest available doctor attended; out of normal surgery hours the doctor on call went to the scene. As members of the Penrith and District Accident and Emergency Scheme, the doctors are equipped with two way car radios on the ambulance frequencies, although reception is poor in some fellside areas. When possible the doctor contacted ambulance control by radio while on his way to the incident. If the doctor found that an ambulance was not required he would inform ambulance control and the ambulance would be recalled by radio. Similarly, if the ambulance arrived first and found that the doctor was not required the doctor could be recalled by radio. Ambulance crews were instructed that they should not wait for the arrival of a doctor if they considered that it was in the patient's best interest to proceed immediately to hospital.

The doctors were equipped with intravenous fluids (normal saline, Hartmann's solution, and Haemaccel), oral airways and intubation equipment, suction apparatus, and dressings. They also carried analgesics to administer by injection, usually morphine with cyclizine (Cyclimorph). The doctors confined their attention to immediate necessary treatment before the arrival of the ambulance and, thereafter, to providing any treatment that would not otherwise have been available.

The additional equipment carried by the doctors was provided by public donation to the Penrith and District Accident and Emergency Scheme, which is a registered charity. Each car radio costs approximately £500 and should have a life of at least seven years. The initial cost of the extra medical kit carried by each doctor is approximately £315. The replacement cost of dressings, intravenous fluids, and airways used is minimal. It is funded either by the practice or by direct replacement by the hospital casualty department of, for example, fluids and giving sets arriving there with patients. Telecom radiopagers each cost £31·50 plus VAT per quarter and are provided by the practice. (They could now be regarded as standard general practice equipment.) There are no additional costs incurred by the ambulance service.

Results

There were 24 incidents during the two year study (table), including 16 road traffic accidents; 26 patients were attended by a doctor. One patient was dead when the doctor arrived at the scene (incident 14), and two patients died later (in incident 6 from head injuries and a fractured thoracic spine with hemiplegia and in incident 5 from a stroke). No patients died between the arrival of doctor or ambulance at the scene and their arrival at hospital.

Incidents where the general practitioner attended an emergency during two year period

Incidents		No of patients attended	Doctor arrived before ambulance	Analgesic given	Intravenous fluids given	Airway cleared	Dressings used	Comments
1	Road traffic accident		Not called					
2	Collapse in car	1	Yes					Ambulance recalled
3	Road traffic accident		Not called					
4	Road traffic accident	1	Yes					
5	Collapse (stroke)	1	Yes					
6	Road traffic accident	2	Yes		X	X	X	
7	Road traffic accident	1	Yes				X	Ambulance not required
8	Road traffic accident	1	Yes					
9	Riding accident	1	No				X	
10	Road traffic accident	1	Yes					
11	Head injury		Not called					
12	Boy fallen	1	No					Doctor recalled
13	Road traffic accident	2	Yes				X	
14	Sudden death	1	No					Ambulance not required
15	Collapse in bus	1	Yes					
16	Road traffic accident	1	Yes			X		
17	Road traffic accident	1	Yes				X	
18	Road traffic accident	1	Yes					Ambulance recalled
19	Road traffic accident	2	Yes				X	
20	Road traffic accident	2	No	X	X		X	
21	Road traffic accident	1	Yes					Ambulance not required
22	Chest pain	1	Yes					Ambulance not required
23	Road traffic accident		Not called					
24	Road traffic accident	1	Yes		X		X	

Of the 20 occasions when the doctor was notified of the incident at the same time as the ambulance was dispatched, the doctor arrived before the ambulance 16 times (80%). Thus, in most cases the doctor carried out the initial assessment of the patients and provided first aid. On two occasions the ambulance was recalled by radio before it arrived at the scene. On four other occasions after the patients had been examined by the doctor the ambulance was able to leave the scene without patients and was available for other duties. The airways of two patients were kept open by a combination of positioning, suction, and oropharyngeal (Guedel) airways. These patients were unconscious, and in each case the doctor was the first person on the scene to give first aid. No patients required intubation. Parenteral analgesics were given to two patients (both of whom were trapped in vehicles and did not have head or chest injuries). In most cases, however, oral Entonox, which was carried in the ambulance, was adequate for pain relief. On nine occasions the doctor dressed wounds while waiting for the ambulance.

Discussion

Despite the presence of an efficient local ambulance service, there is inevitable delay in an ambulance reaching the scene of an accident or medical emergency in a rural area. The national standard set for ambulance services in rural areas is that in 50%, of incidents the ambulance should arrive within eight minutes of the call and in 95%, of incidents within 20 minutes. The standard is met in this district.

Fortunately, there are few emergencies when seconds count, but there are occasions—for example when a patient is unconscious and in danger of asphyxiating—when immediate aid can reduce the risk of brain damage or death. In this study the incidents (average of one a month shared between three doctors) were sufficiently infrequent as to cause minimal disruption to normal daily routine. In most cases neither skilled medical attention nor even skilled first aid were necessary before the arrival of the ambulance, though even at a minor accident a doctor can reassure the injured person and bystanders and examine and advise some of those who might otherwise have to be taken to hospital. If patients can be treated at the scene the ambulance is available for other duties and the number of patients being taken to hospital casualty departments is reduced.

In a more serious accident where there has been considerable internal or external bleeding or a patient is trapped in a vehicle then giving intravenous fluids can make the difference between a relatively stable patient or one who is shocked or moribund arriving at hospital. A trapped patient without head or chest injuries is often grateful for an analgesic injection, which may only be given by a doctor. Furthermore, a doctor is the only person legally able to certify the dead.

Our experience during the study was that the patients benefited from the doctors' attendance at incidents, particularly accidents. Greater contact with the emergency services, particularly the ambulance crews and ambulance control, improves doctors' relationships with them. By respecting each other's skills and experience, effective teamwork develops. Such relationships improve patient care.

If more members of the public were trained in first aid and more ambulance crews were trained to give intravenous fluids doctors' attendance at incidents in rural areas might be necessary less often. In the meantime a doctor who is dispatched at the same time as the ambulance seems to have a role in the care of patients in an area distant from ambulance stations.

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