Volume 64 No. 1 **APRIL 1995**
ISSN 0041-6193

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THE ULSTER MEDICAL JOURNAL

Published by
THE ULSTER MEDICAL SOCIETY

The Ulster Medical Journal, Volume 64, No. 1
April 1995

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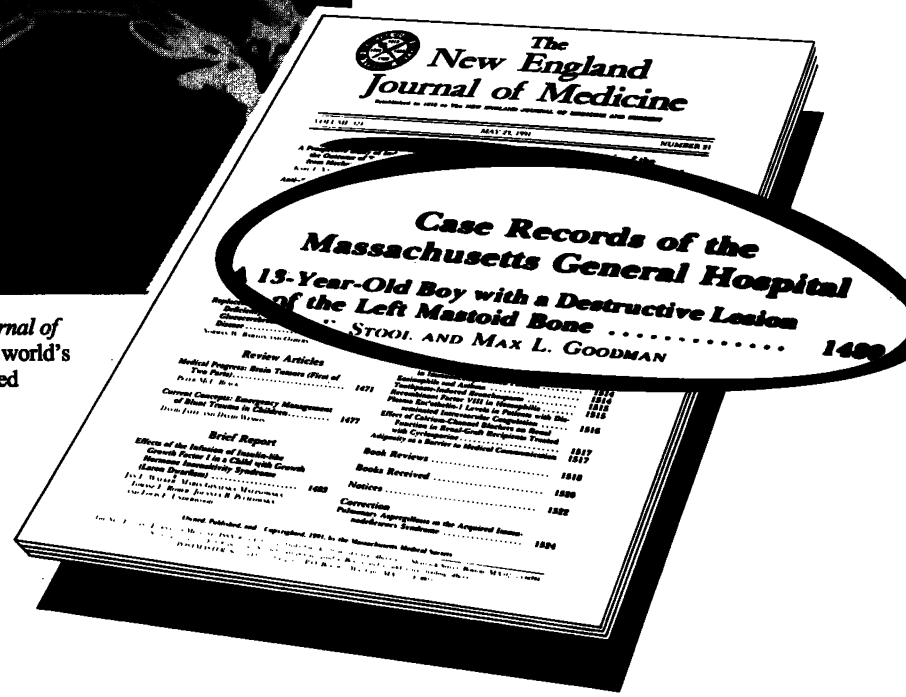

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The Ulster Medical Journal

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Successor to the Transactions of the Ulster Medical Society (1884-1929), and the Transactions of the Belfast Clinical and Pathological Society (1854-1862)

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THE ULSTER MEDICAL JOURNAL

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ERRATUM

Intravenous Mercury: a three year follow up:

W J A Anderson: Ulster Medical Journal 1993; 63; 180-183.

It has been brought to our attention that the case referred to in this report had been diagnosed and treated in a different hospital in Northern Ireland to the one stated in the case report. Clinical biochemical advice and the management was provided by Dr Pooler Archbold.

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The Ulster Medical Journal
The Journal of the Ulster Medical Society
Volume 64 No. 1 April 1995

Editorial

Corridors and Towers

When C P Snow wrote "The Corridors of Power" he sought to demonstrate the inner workings of the political process in Whitehall. Now that we are coming towards the end of the useful life of the building known as the "RVH corridor" it is time to consider some of the inner workings of our own profession. Wards 1-20 in the Royal Victoria Hospital represent only a small part of that institution and there are other corridors connecting different parts of the building which we would do well to try and forget. But the main corridor achieved a special significance for students, doctors, nurses and, in earlier days when it represented the state of the art, for our patients. Now we have the BCH Tower which might be considered as a series of superimposed islands with little communication between them, except for the occasional meeting in the constrained environment of a lift shaft. But there is no doubt that our patients appreciate the facilities of toilets and showers and bathrooms and privacy when they are ill.

Those who are planning new buildings must always remember that medicine in the future will be different from the present. The old poor law terminology of inpatient and outpatient is becoming irrelevant as people move rapidly from one phase to the other. The concept of consultations or even of operations will become blurred. Specialists will become increasingly specialised leaving an important space for the generalist, whether he or she be called physician or practitioner. The architect must remember that although day patients have no visitors they do each have a car and a driver and they will need just as much toilet and washing space. The concept of disease orientated medicine will demand a more integrated care for the patient in outpatient, daypatient and inpatient facilities by the same professional staff. This disease orientated concept requires a structure which has existed in some buildings but not in others where inpatient and outpatient facilities have been totally separate. Buildings to some extent set the pattern of practice and they offer an opportunity for flexibility in the future.

In this issue, Professor Reilly in his presidential address confronts the interface between general practice and hospital practice. A quick glance at the Osler or hospital paradigm, and the Reilly or general practice viewpoint, would suggest that they differ only in the addition of a fourth angle to the figure, called "health'. Sir William Osler in the old days would have recognised that word but would have called it sanitary science, hygiene or preventive medicine. Dr Rea, in his personal experience of the problems of inner city practice, relates these clearly to poverty and deprivation.

The poor and the deprived were well looked after in Victorian hospitals if they were admitted, but the cost to the National Health Service gradually became too much. Modern health centres are becoming as large as small hospitals. They too must contain their costs. Whatever Osler would have called the concept of health he certainly recognised the need for harmony between the different branches of the profession and the dangers of chauvinism in medicine.

When the Johns Hopkins Hospital in Baltimore, USA, was being built as a model of its kind, Dr John Shaw Billings travelled around Europe for a number of years identifying the best possible practices and buildings. When it opened in 1889 it represented the pavilion system, but each pavilion was linked by a corridor. Most hospitals have grown in an irregular and unplanned way, even by conversion of buildings designed for something else. The old blackstone building, now demolished, which we remember as the core of the Belfast City Hospital was converted in 1869 from a school for 1300 children, which perhaps explained the inappropriately high ceilings in the ground floor wards. The new BCH tower block still represents the best in architectural design, but it was far too long in gestation. When William Henman, later to be appointed as architect of the RVH, wrote in 1896 on the disadvantages of the pavilion plan, he pointed out that it would be better to spread out facilities on one storey side by side for the greater comfort of patients, to simplify ventilation by mechanical means, very considerably to reduce the length of corridors, and to dispense with the inconvenience of staircases and lifts, thereby facilitating administration. This concept he was encouraged to develop into what we know as the main corridor of the RVH. There did not seem to be any consideration of numbers of patients or even of staff in the architectural design. In 1985 the architects of the rebuilding of the Johns Hopkins Hospital noted "the need to move large numbers of patients with minimal reliance on elevators made a horizontal orientation much more practical than the old vertical pavilion system. But John Shaw Billings would have the last word in recognising that "the most difficult thing is not to plan the buildings, it is to find the proper and suitable persons to be the sole and emotive power of the institution".

The RVH main corridor was a very special place, and represented an amalgam of people in a closely contiguous area. Even if there is still debate as to whether corridors are better than towers, people are always more important than buildings. A move to disease orientated practice both in primary care and in specialist facilities will mean that everyone coming to a hospital whether inpatient, daypatient or outpatient for a particular condition will need to see the same group of professional staff in an adjacent and convenient area, not in a series of disconnected procedures in different places by different people. A move in this direction will certainly facilitate Osler's dream of professional unity, peace and concord.

D R HADDEN

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The Ulster Medical Journal, Volume 64, No. 1, pp. 3 - 16, April 1995.

General Practice: any port in a storm?

P M Reilly

Presidential Address, 13th October 1994

When considering what I would say to you tonight I was struck by an Editorial in the Ulster Medical Journal of April of this year. Professor David Hadden, the Editor, began "All Change - 1948, 1972, 1994; will these dates be remembered by future social historians as important points of change in the progress of health care organisations in the United Kingdom?" He concluded that he could, in general, find few phrases which show how we really feel about the present or past changes. Professor Hadden did note that in an 1972 issue of the Journal Dr J A McVicker, a distinguished family doctor in Belfast, could reminisce that general practice had always been an exacting way of life and looked back with concern at the reduction in the general practitioners' role which took place after 1948. Dr McVicker did however think that this was gradually being reduced, notably by the founding of the College of General Practitioners, soon to be the Royal College of General Practitioners. And, believe it or not, in 1972 a group of general practitioners met at a management conference at Ballygally Castle and looked forward with remarkable foresight to the community care team and an expanding health centre concept.[1]

In this address I shall also look back but only to explore themes which I believe are very important in the evolution of general practice. It will doubtless be quite apparent how I, and many others, feel about the times in which we practice. My task is to delineate the place of general practice in health care, how it came to occupy that place and finally to infer how it might develop in the future.

ORIGINS OF MODERN MEDICAL PROFESSIONALISM

Modern British medical professionalisation developed during the first half of the 19th Century culminating in the Medical Act of 1858. With difficulty, the Act brought together three hitherto almost entirely separate occupations: a few hundred physicians in London and Edinburgh, with gentlemanly status, a knowledge of latin and greek, but virtually no practical training; a few teaching-hospital surgeons; and several thousand provincial surgeons, apothecaries, and surgeon-apothecaries already calling themselves general practitioners without gentlemanly status, but with practical training in survival procedures and the dispensing of medicines.

An uncertain majority in all three groups eventually found a common interest in legislation for a single profession of medicine. This view was contested in the parliamentary committee which prepared the Act. It was suggested that a less qualified grade for everyday care of the poor, more or less equivalent to the feldsher grade in Russia, might be a cheaper and more realistic alternative. The

Professor P M Reilly, MD, FRCGP, Department of General Practice, The Queen's University of Belfast, Dunluce Health Centre, Belfast BT9 7HR.

British Medical Association (BMA) successfully resisted this proposal, using an important argument:

> "Every attempt to create an inferior grade of medical men of limited education and with aptitude only for the ordinary exigencies of practice should be resisted. Disease affected people wherever they were, and so the same degree of medical skill should be available for everyone."[2]

The British medical profession therefore owed its birth to an egalitarian social argument. This theme has recurred time and again since, despite the obvious fact that it denies the validity of a medical market, with some consuming more and others less medical care than they need. Both ideas, medical care as a human right and medical care as a marketed commodity, have persisted ever since, in uneasy alliance or open conflict, and neither has ever had complete ascendancy.

EDUCATIONAL/TRAINING MODEL

The currently accepted model of what a good doctor is became fully developed around the start of the 20th Century, when medicine began to make serious claims to association with science. It is most easily dated from 1910, when implementation in the United States of the Flexner Report on medical education, drawing on British, German and French experience, elaborated an international professional model which essentially persists today.

Flexner added enormous power to this upward movement in social rank. He defined the doctor as a science-based, autonomous professional, relating to society through intimate, individual contacts, whose principal task was the relief of sickness as it came to his door. His unpaid care of the poor gave him access to fees for care of the rich. Either way, doctors derived their authority from associations with science and with gentlemen.

Sir William Osler was the most influential of, and advocate for, this professional model. He was a giant figure, of unquestionable greatness, who posed many of the fundamental questions which still face us today. His aim was to educate

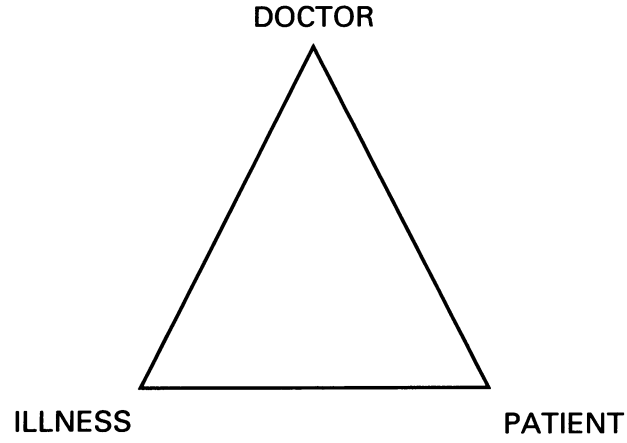

Figure 1: The Osler model/paradigm

doctors to clinical inquisitiveness, a passionate belief in the application of science to the solution of diagnostic puzzles. Osler's concept of clinical medicine, bringing bedside practice into association with laboratory science, was a huge and necessary advance, but it was obtained at very heavy cost. It was essentially a pursuit of personal excellence, based on the assumption that excellence was not, and never could be, a universal objective.

This model, illustrated here in the form of a patient/doctor/illness triangle (Figure 1), tends to isolate the patient from the real world of his or her family, occupation and work circumstances. This model is episodic, reactive and problem based with the patient occupying an essentially passive role. Further, it is based on a reductionist view – analysing complexity by breaking things down into simple constituents. Osler's model, or paradigm*, was widely accepted at the time and still dominates traditional medical thinking and teaching.

In the first half of the twentieth century application of the scientific approach of the Osler model to the harsh realities of general practice proved difficult, if not impossible. Sir James MacKenzie the famous general practitioner and cardiologist recognised this in the early 1920s: 'I left college under the impression that every patient's condition could be diagnosed . . . For some years I thought that this inability to diagnose my patient's complaints was due to personal defects . . . but gradually I came to recognise that the kind of information that I wanted did not exist . . .' [3].

SOCIO/ECONOMIC, POLITICAL AND PROFESSIONAL CONSEQUENCES FOR GENERAL PRACTICE

General practitioners were very unlikely to keep up with any technical innovation. The circumstances of their practice and the means of their patients, especially in working class areas, made such initiative almost impossible. Where a working man's club formed the bulk of the practice, the work was superficial. We have the famous criticism – "perfunctory work by perfunctory men".[4]

The Lloyd George era

The terms of service obtainable by general practitioners for looking after such "Medical Aid and Provident Societies" (the so-called clubs) were frequently appalling. Nevertheless when Lloyd George sought to nationalise these societies in the 1912 Insurance Act many general practitioners were convinced that they would lose their only apparent means of escape to financial security and clinical self-respect through fee-earning practice, clinging all the while to the Osler paradigm of practice. But for the poor doctors of poor people – that was the substantial majority of doctors and people, there was never any question of counting corpuscles, performing bacteriological examinations, estimating the chemical value of secretions or of acquiring skill in the use of microscopes.

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* A paradigm is a general comprehensive theory dominating the assumptions of science over a substantial period of time. A paradigm tends to influence the questions scientists ask and the answers they find credible. When a paradigm fails to explain the reality of scientific experience it disintegrates to be replaced by another. An example is Newtonian physics which disintegrated earlier in this century in the face of discoveries about particle physics. The word paradigm has been extended to include any generally shared set of assumptions governing teaching and research in any (scientific) subject, and has been a favourite term among medical educationalists.

Hospitals were where medicine was concentrated. The BMA was split. Though many local branch secretaries may have had scores of protests, yet some 15,000 general practitioners signed contracts with Insurance Committees, capitulating to the legislation which the BMA opposed. The principal functions of general practitioners under the 1912 Act, and the only reason they were included in it, was to adjudicate fitness for work and, if need be, prescribe access to cash benefits.

Notwithstanding this defeat the BMA remained representative of the medical profession, especially general practice. In the 1930s, the BMA made difficulties for socially brutal government policies by drawing public attention to the effects on child health of mass unemployment and malnutrition. They proposed an extension of the primary care services to the dependents of manual workers and encouraged discussions on post-war health services in their wartime Medical Planning Commission.

The Advent of the NHS

In 1944 the BMA sought the views of its members concerning the wartime coalition government's White Paper on post-war health services. This White Paper proposed group practice from health centres, a mixture of salaried and private general practice and measures to ensure a more equal distribution of general practitioners across the country. Despite the difficulties of balloting doctors in the armed services, which favoured higher returns from established older (and possibly more conservative) doctors, there were majorities of over two thirds for almost all the above proposals. For any post-war government intending to create a National Health Service on radically new lines, there was a clear mandate from the profession. But only four years later all that changed. What in fact occurred was an almost exact repetition of the events of 1912. The BMA leaders retreated from the 1944 position and mobilized the membership against the alleged threat to clinical standards of a "socialist" service.

But there was an important difference from 1912; the true opposition was led by the general practitioners, not by the consultants. Aneurin Bevan, the Labour Minister of Health, made investment in nationalised hospitals the central feature of the plans for the NHS. He conceded a great deal of power to the consultants, confessing to Brian Abel-Smith that he "choked their mouths with gold". But above all that Bevan offered them means to expand and improve their clinical work, and this was a vital and necessary innovation. However, as is well known, the presidents of the Royal Colleges (representing medicine, surgery, obstetrics and gynaecology) concluded a deal with Bevan. The BMA maintained its stand against any negotiations with the Minister with furious denunciations of the treachery of the Royal Colleges. In the event, the new NHS began on time with 90% of general practitioners "coming into line" and enrolling under the Act, and 93% of the population registered with those general practitioners. Frankly, many doctors had done all that was possible to obstruct a major advance in the social organisation of medical care and had isolated themselves from public opinion.

THE NATIONAL HEALTH SERVICE

General practice was quantitatively extended to cover the whole population but qualitatively unchanged because it received no significant public investment, even in the new post 1948 era. The costs of general practice consisted almost

entirely of payments to general practitioners and the then small cost of prescribed medications. Everything else, receptionists, nurses, cleaners, office and medical equipment, furniture and buildings came from the general practitioners' pocket – a public service privately administered.

Somerville Hastings, a Labour MP in the 1945-parliament who was also a consultant at the Middlesex Hospital made a telling comment: "During the negotiations that preceded the NHS Act the GPs came together to oppose us. They were also concerned, quite rightly, with their remuneration under the scheme, but gave little thought to their rightful place in it or opportunities for doing good work under it. They only asked to be left alone and they have got what they asked for".[5]

Between 1949 and 1971 the number of hospital medical, nursing, administrative and clerical staff each more than doubled. Over the same period the number of general practitioners increased by only 16%, though they were gradually redistributed to reduce over-doctoring in wealthy areas, and increase the numbers of general practitioners in poor areas. There was material evidence of professional demoralization expressed in the way general practitioners thought of their patients, their work, and themselves, more than at any time before or since. General practitioners were defined, not by what they were but what they were not – consultants. Trained by specialists in hospital for specialism, significantly handicapped by the Osler paradigm, future general practitioners were ironically not scientific enough to see what stared them in the face: a huge largely unmapped field for effective medical care requiring skills largely unknown to hospital specialism but badly needed by their future patients.

A NEW APPROACH : EDUCATION AND QUALITY

Marginalised general practice resolved to form a College as a means of rehabilitation, especially around issues of education and quality of practice. During the first 13 years of its existence, from 1953 to 1966, the ends preached by the College were virtually unsupported by means other than what general practitioners spent of their own money. The self-critical reforming approach enjoined by the College on its members was not only unrewarded but incurred costs because its implementation required more time for the patient and more money for supporting staff. It was voluntary, and most general practitioners were not volunteering. Earning depended almost entirely on capitation (pay per registered patient) so that the most successful doctors were those with the biggest lists (the legal maximum at that time was 4000), and almost inevitably the least time available for their patients. Though general practitioners still insisted on independent contract or status, they wanted the government to pay for improvements in the service. The general practice share of the NHS budget fell from 12% in 1950 to 8% in the early 1960s.

The obvious and effective way to help general practice was the way the NHS had already helped hospital-based specialism: public investment in appropriate education, better buildings and equipment and more office and nursing staff. The agreement which emerged in 1966 is known as the GP Charter.[6] It was a major turning point for general practice and had seven main features:

(1) Increased basic salary, with a reduced proportion due to capitation.

(2) Reimbursable rent on suitable premises, and cheap loans to encourage purpose built premises.

(3) 70% reimbursement of wages of employed office staff and nursing staff, up to a maximum of 2 whole time equivalents.

(4) Seniority payments and vocational training payments contingent on certain conditions.

(5) Development of a cadre of trainers, introduction of vocational training schemes, and payments to district course organisers to run day release courses.

(6) Local Health Authorities were encouraged to redeploy community nurses, health visitors and midwives to care for practice populations.

(7) Limited fee for 'item of service', to encourage general practitioners to take responsibility for an extended range of clinical activities such as contraceptive services and cervical smears.

The GP Charter underwrote the College *and* general practice by giving its independent ideology of general practice a material base. Most of the disincentives to investment in staff, premises and equipment were removed and the College acquired a practical task supported by public funding for the development of vocational training. General practice became a more attractive career. By 1980 it was the first career choice of 37% of pre-registration doctors, twice the proportion favouring the runner-up, hospital internal medicine. For the first time, many of the most successful students opted for general practice. There was a rapid expansion of vocational training schemes led by the College, which provided a structure for postgraduate training superior to any other specialty.

In 1969 The Royal College of General Practitioners proposed that:

> "a general practitioner is a doctor who provides personal, primary and continuing medical care to individuals and families . . . his diagnoses will be composed in physical, psychological and social terms . . . he will work in a team . . . he will intervene educationally, preventively and therapeutically to promote his patient's health".

THE NEW GENERAL PRACTICE PARADIGM

This model, shown in the form of a diamond (Figure 2), incorporates the additional dimension of maintaining health, recognises the supportive role of the patient's family, and includes the concept of the primary care team. This paradigm notes that there is no dicotomy between health and illness and at its best, encourages patient autonomy.

Until this period few if any medical schools gave any significant teaching in or about general practice or by general practitioners, little postgraduate education was available and virtually all of that was by specialists. A Royal Commission on Medical Education was appointed in 1965, and published its conclusions in 1968. This was the Todd Report, and proposed:

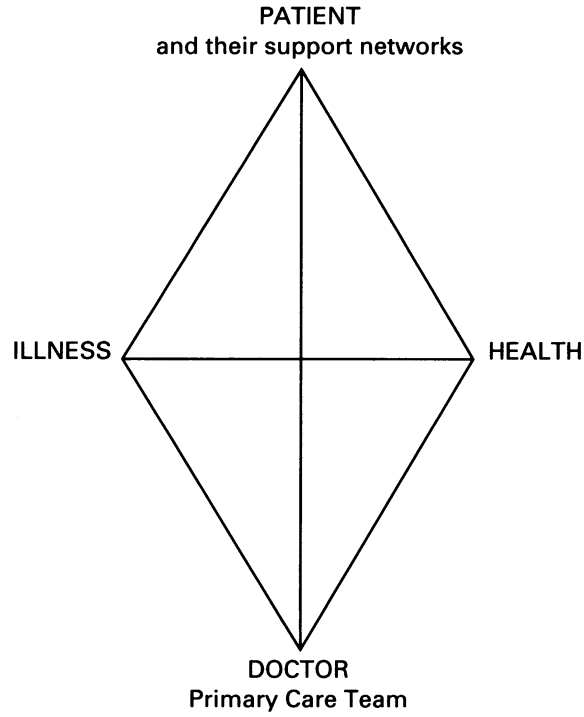

Figure 2: The new general practitioner paradigm

(1) a sustained increase in medical manpower to double output by 1990.

(2) recognition that no newly qualified doctor can ever be competent in all fields and that the aim of undergraduate training should be to produce educated health workers able to continue specialist education throughout their working lives.

(3) that general practice was itself an important speciality requiring substantial time in the undergraduate curriculum and a planned programme of postgraduate vocational training, partly in hospital and partly in the community.

The Todd report was a landmark in thought about medical education, and gathered important data about the social composition, attitudes and experience of medical students. One might reasonably argue that with the general practitioner paradigm and the proposals of the Todd Report general practice had at last reached the right port after a long stormy passage.

DEVELOPED FEATURES OF PRIMARY CARE

However UK general practice, including the RCGP, should have looked elsewhere throughout the world to augment its model and looked critically not just at what primary care was but at what it might become. Primary care has the following characteristics: [8]

Unique features	
First contact care	– Accessibility of facility – Access to care – Use of facility as place of first contact
Longitudinality	– Knowledge of the patient and the patient's social milieu – Use of the regular source of care – Length of relationship with patients regardless of type of need for care
Comprehensiveness	– Spectrum of problem dealt with – Primary and secondary preventive activities – Recognition and management of psychosocial situations
Co-ordination of care	– Mechanisms for continuity – Recognition of information from prior visits – Referral/consultation visits (occurrence and results)
Essential but not unique features	
Medical records	– Problem list in place – Completeness of the medical record
Continuity of care	– Seeing same practitioner on follow-up
Practitioner-patient communication	– Content/quality of interaction
Derivative features	
Family centred	– Knowledge of family members – Knowledge of health problems of family members
Community orientated	– Knowledge of community health needs – Participation in community activities – Community involvement in practice

While it is important to acknowledge that educational and training issues as well as political issues influence any developments and interact with each other, it is also important to note and even to expect that in the years since 1968 the general practitioner paradigm has slowly shown a need for further refinement.

THE GENERAL PRACTICE PARADIGM UNDER PRESSURE

Even though excellent initiatives were visible, on the ground there were large variations in a service which was largely focused on patient-led demand and symptomatic treatment. There was not nearly enough emphasis on prevention and health promotion, particularly in the face of the pattern of morbidity, namely slowly evolving chronic illness with multi-dimensional aetiology.

Yet there is an enormous structural strength in UK general practice – that of the registered patient list. At any given time all but 2.5% of the population are registered with a general practitioner. Many people are registered with the same general practitioner for decades. This advantage has to be pressed home in the prolonged opportunity it gives to form productive professional relationships with patients. It is surely still greatly valued by the vast majority of people and must form a major reason why many doctors become general practitioners.

But there is a "community" dimension to general practice which implies that the general practitioner has a responsibility beyond the care of individuals, and that they should monitor and systematically improve the health of all of their registered patients. Each practice list has a unique profile of "ill-health" conditioned by many factors including age, sex, social circumstances and environmental factors, which generate a distinct pattern of health care demands. In such situations the world is immediately more complicated, and the general practitioner is cast in the role of a doctor in public health for his or her patients, with a responsibility for planning, implementing and reviewing all patient care and not just the care of the individual. This can also be regarded as "proactive" or anticipatory care, which is complementary to but does not supplant traditional "reactive" care. Responding to and alleviating the suffering, the pain and the distress of our patients will and must continue to be the cornerstone of general practice. Health care demands are not the same as patient needs, and therefore appropriate care implies adequate local needs assessment by general practitioners and primary care teams, with active patient involvement. This role, with its responsibility for the locality, is a contentious area for many general practitioners. It seems to get in the way of what they regard as their primary purpose, which is to see patients.

ANTICIPATORY CARE

The RCGP set up a working party in 1980 to look at the general practitioner's role in preventive medicine. The group decided to look at four very different fields of work in some detail, to make sure that its conclusions were so far as possible concrete, practical and usable by primary care teams in their ordinary conditions of work. These fields were family planning, child rearing and child health, psychiatry, and arterial disease. Alcohol problems were added later, but handled in the same way. The reports of this working party and its subgroups were an important feature in the development of UK general practice.[9]

In order to look systematically at what general practitioners were already doing about prevention, it was essential to match achievement against registered populations at risk, (with illness of various sorts as the numerator and the practice population as the denominator). General practitioners soon realised that this was necessary not only to study prevention, but also to look objectively at other aspects of their work, including what had always been their central function – the management of disease. The practical tasks of prevention fused with systematic management of disease in the registered population become the single task of anticipatory care. Combined with rapid advances in information technology, it began to seem possible that primary care teams serving registered populations might be able to measure and even respond to the health needs of the people, with optimal effectiveness and economy.

TENSION BETWEEN GENERAL PRACTICE AND PUBLIC HEALTH

The 1990 general practice contract took account of many of these ideas and actually incorporated several public health elements: monitoring through child health surveillance, three yearly health checks for adults, the offer of annual assessment for people over 75 years of age, assessment of health needs through recording referrals to hospital and health promotion clinics. The quality and uptake of clinics was very uneven and not related to the needs of the population.

So now doctors and nurses in general practice face the frustration of being bribed or bullied by government to achieve targets that many people are not ready to accept for personal and social reasons.[10] Achieving apparent targets may well be a short term gain, and is likely to tax the doctor-patient relationship as well as the integrity and self-respect of the former. The latter needs individual care when frightened and/or ill but willingness to change cultural and social habits comes in small steps in response to both external opportunity as well as an inner readiness to change.[11]

This approach to the population through primary care is not going to produce large reductions in the risk of cardiovascular disease as several well constructed studies have shown.[12, 13] Yet general practice teams have some evidence for the effectiveness of clinical efforts in secondary prevention of vascular disease,[14] and growing evidence that professional support for people who are not ready to change their lifestyles will not improve outcomes.[15] These are large tasks in themselves and there seems to be no justification for the ritualistic collection of risk factors when the public health benefits are marginal. Less motivated patients are upset by the process, while primary care professionals are demoralised by bureaucratic payments linked to targets and population coverage. The ethics of screening are clearly being ignored in the contract imposed on general practitioners, and the scientific evidence that existed before 1990, namely that screening has little effect, has been strengthened.

For those of us who support the public health role in primary care in the new arrangements for health promotion it is heartening to see that in respect of new chronic disease management arrangements one message has at last been correctly grasped – the practical tasks of prevention and health promotion fuse with systematic management of disease in what is known as anticipatory care.

CONSEQUENCES OF A PROACTIVE APPROACH IN ANTICIPATORY CARE

But what is the scale of this proactive task?[16] Using indicative prevalences, one could construct a profile of a hypothetical practice in a given locality with a list of 10,000 patients (Figure 3). Below the waterline are hidden risk markers for coronary heart disease and stroke; above the waterline are overt clinical events.

Indicative prevalences fit well with innovative models of primary health care. For instance, a model of preventive medicine through anticipatory care in general practice has been developed over several decades, based on opportunistic screening and interventions informed by epidemiological studies. Focused and personal intervention can be more effective and cheaper than population based interventions or multiphasic screening and advice. However, it is not possible to cover patients comprehensively and reliably without a team based practice organisation, efficient patient information systems, and an inbuilt audit cycle.[17] The resources needed to address this task should not be underestimated.

General practice has many advantages for pursuing health promotion, since about 85% of patients will consult a member of the primary health care team each year. In the past general practitioners have mainly reacted to patients' problems rather than acting to prevent problems. The role of the general practitioner as personal physician and the gatekeeper to secondary care is vital and must be sustained. But anticipatory care is possible and effective if

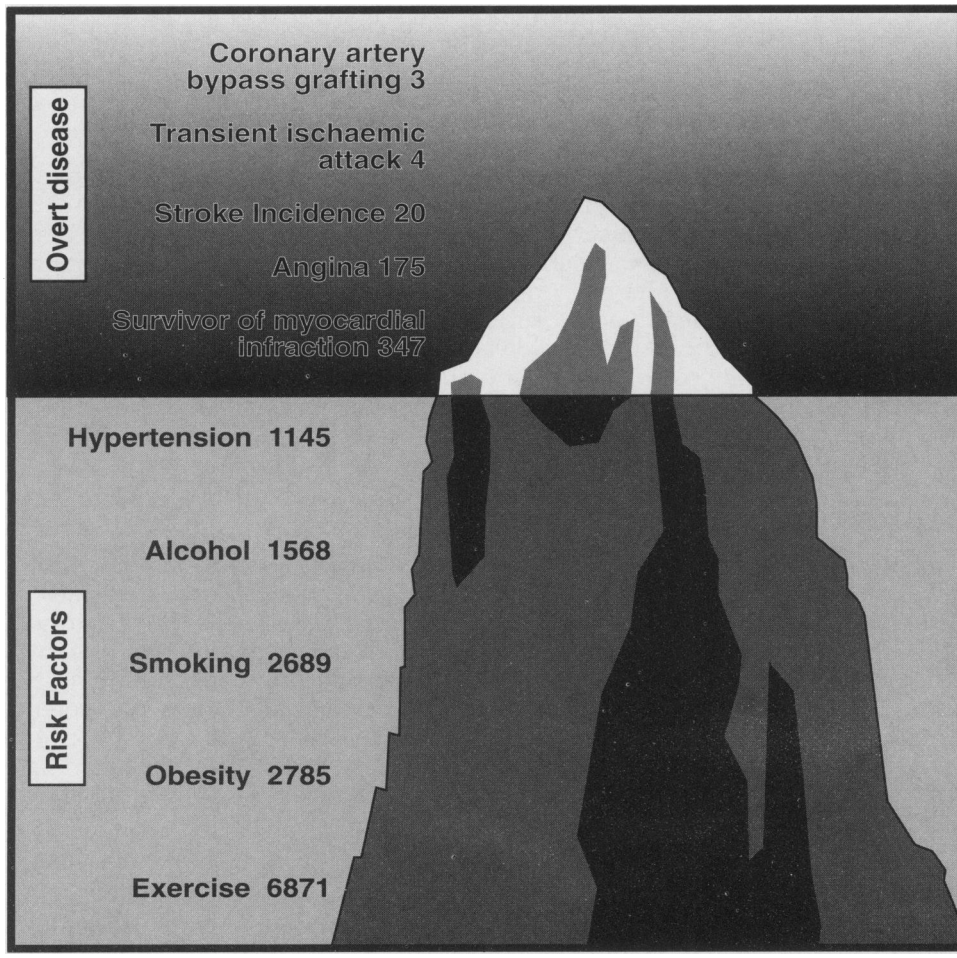

Figure 3 Coronary heart disease and stroke "iceberg". Representing indicative prevalence for a hypothetical general practice of 10,000 in a Northern post-industrial town in the UK. Above are risk markers (known and unknown) for heart disease and stroke. These all need to be noted and the patient advised appropriately.

practices have high motivation, sufficient resources, trained staff, appropriate organisation, and a targeted approach based on research. The expansion of the primary health care team to include practice nurses, health visitors, and other clinical professionals has brought anticipatory care closer.

I have noted above that the so-called general practitioner paradigm is under strain and that this naturally occurs as our learning and thinking evolves. We should also remember that in the Hippocratic tradition each person has primacy and doctors who swear allegiance to this tradition or the Geneva convention have earned the respect of their patients for centuries despite

occasional errors of clinical judgement or personal behaviour. Indeed, doctors who fall foul of their patients are much more likely to have shown contempt for the value of an individual as a person than to have been technically negligent. The centre piece of family medicine is what happens in the one-to-one consultation; population health is always a secondary dimension.

Recent government policy documents provide a definite emphasis, indeed a preference for the population as against the individual. The Health of the Nation[18] placed great emphasis on "health gain" and "resource effectiveness": both are utilitarian concepts which are measured primarily in population terms. This strategy also includes the "people centred" concept which represents consumerism in the health service rather than any deeper value system. The population approach cannot be allowed to dominate clinical practice without loss of professional credibility with the public and indeed with ourselves. The first 25 years of academic development in general practice contributed much to our understanding of the use and abuse of the doctor-patient relationship and the therapeutic value of feeling valued and understood.[19]

RETURN OF THE PATIENT

We have begun to balance appropriate technology with the advantages that can accrue from a good doctor patient relationship. The generalist role has always been to make inquisitive clinical observations, to tolerate uncertainty to understand local probabilities, and to be health advocates for the patient in these contexts. The constant need is for personal, primary, continuing and accessible care. At its best this provides a wide range of clinical competence which minimizes a fragmented approach to the patient. At its worst it can be screening or "symptom swatting" with expensive tools applied in an idiosyncratic way with scanty regard for individuals, their health, their real problems, or even regional and national priorities.

Each consultation can have exceptional potential in primary care. The Stott and Davis model [20] (Figure 4) has strong face validity in general practice settings throughout the world.[21] External factors impact on every consultation (Figure 5) and recently national government has attempted to force general practitioners to focus on the needs of the population at the expense of the individual. The 1990 contract [22] set out specific objectives regarding availability, preventive medicine, and information for patients. These are reasonable objectives but need to be balanced by an appreciation of the true potential of the generalist when that role is performed well. The patient too is shortchanged. It is superficially attractive to be installed in the role of consumer, with all that that concept can confer in a market, especially if one is in full employment with an above average income. The reality is that in the context of today's prevalent morbidity patients had also better be "producers of health".[23] Given the behavioural and economic as well as the pathophysiological features that combine to establish an illness, the professional relationship with a good generalist is of potentially great value and empowerment. Some lay observers are noting this already.[24]

It is of course essential to acknowledge the place of public accountability, information technology, management and audit. But general practitioners must not let go their responsibility for and accountability to individual patients, otherwise they will become utilitarian public health doctors. Equally, if general

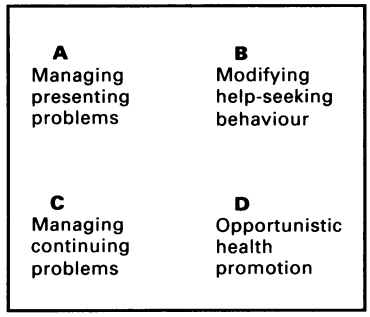

Figure 4 The Stott and Davis model of the general practice consultation.

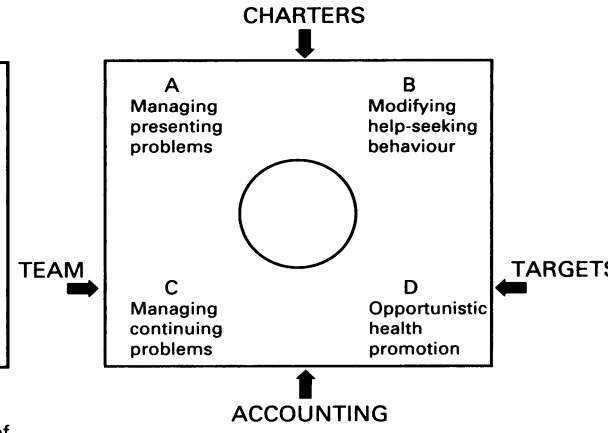

Figure 5 External factors impacting on the general practice consultation.

practitioners retreat from the individual to focus on the cellular and molecular they lose the generalist role and become biological scientists. I wish no disrespect to public health nor to biological science in these comments, indeed I would regard it as absolutely fundamental that general practitioners are not only able to make accurate observations in both of these areas but are able to apply them competently in the context of their patient care.

THE RETURN OF THE GENERAL PRACTITIONER

General practice has come a long way not only since the middle of the last century when the British Medical Association was formed but also since the middle of this century when the NHS was founded. As a group they have faced social and political crisis, in the Lloyd George and Bevan eras. In my opinion they did not distinguish themselves during those times of change and indeed tended to head for what was perceived as the safest port during those particular storms. Where general practice has distinguished itself is in rehabilitating itself from what, until almost the present day, is a potentially disabling educational experience. Disabling because the overarching Oslerian paradigm is inapplicable and largely inappropriate. What general practitioners have done, through the training phase of their careers, has been to hang on to clinical problem solving (buttressed by basic science – the really valuable part of Osler's legacy). They have also been the prime movers in how to communicate with patients. Essentially they have put these two skills together in the context of the communities in which they practice.

Notwithstanding the variation in performance which any branch of the medical profession can and does show, general practitioners now have a paradigm within which they can work effectively. Like any paradigm it can and should experience strain – how can accessibility, continuity of care, or patient empowerment be demonstrated? Like any paradigm it can face direct challenge, in this case from no less than national government. Whatever one's views about that, and I think that I have at least made my views clear, such a challenge is actually a sign of being in possession of something that is useful and valuable,

even effective. During this period general practitioners should have the courage of their convictions and be very careful about needing to reach any port during this particular storm.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 17 - 30, April 1995.

The challenge of an inner city practice

G R Rea

Accepted 7 February 1995

Just over eight years ago, I moved from a rural practice, to an inner city practice in the Crumlin Road area of North Belfast. Although there were many similarities, for example the routine of surgeries and home visits, there were also considerable differences. In some ways general practice in an inner city area may seem very unattractive, but it may equally be regarded as a challenge.

The term "inner city" has come to be synonymous with severe social deprivation with characteristics such as a high density of population, a high concentration of unskilled workers, high levels of unemployment and poor housing. These factors are all present to a greater or lesser extent in our area. Many inner cities also have problems due to a high percentage of people from ethnic minorities. In Belfast, instead of this, we have had considerable inter-community tension and, until recently, terrorist atrocities.

I propose to look at two aspects of the health of those living in an inner city area, and show how these contrast with the population as a whole. I will then look briefly at one of the most damaging social problems in such an area, the problem of unemployment and its implications for the health of those who are unemployed and also for their families. All this presents a challenge to those of us who are engaged in inner city practice, a challenge not only in dealing effectively with the health problems of our patients but also in coping with the stress which such work can have on ourselves, and on our own health. Finally, I will consider how we can address the problem of professional stress.

Up to 150 years ago, our practice area was an area of green fields, but in the 1840's several buildings were erected on what was called the New Crumlin Road. One of these was the New Court House, although the present building includes some additions since those days. The architect was Charles Lanyon, best known for designing the main building of Queen's University. He also designed the Crumlin Road Prison, reputedly along the same lines as Pentonville Prison in London. Further up the road 3 flax spinning mills were erected. On the right are the Brookfield Mill and the mill of William Ewart and Son. In passing I might add that partners in our own practice have had links with both these firms. My predecessor Dr John Brown was the son of the chief engineer in Ewart's Mill and my own father, early in his career, worked in the shipping office of the Brookfield Mill in Donegal Street. Across the road, and established a few years later, is the imposing building of the Edenderry Spinning Company. Each of these mills continued to operate and was a major source of employment in the Crumlin Road area for over 100 years.

Chairman's Address to the Eastern Division (Northern Ireland), British Medical Association, October 1994.

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The linen industry became a major factor in Belfast around 1830 with the introduction of the first powered spinning mill, and by the end of the 19th century some 70,000 people were employed in the industry. Irish linen had a world-wide reputation. The factories prospered and with the prospect of employment many people came from the countryside to Belfast from the mid-19th century onwards. Houses were built for the workers and new streets appeared. Some street names reflected contemporary historical events, such as Crimea Street, while others reflected local industry, such as Flax Street between the Ewart's and Brookfield mills.

The health of those involved in the linen industry was high on the agenda even in those early days. In 1867, the National Association for the Promotion of Social Science met in Belfast, and Dr John Moore speaking on the influence of flax spinning on the health of mill workers, drew attention to the large amount of sickness which prevailed. He noted that the exposure to dust and to particles of flax caused bronchial irritation, and also described the horrific injuries which occurred in the mills. However, Dr Moore considered that the main cause of the workers' ill-health was not their occupation, but was related to their diet. He wrote, "Anyone who will take the trouble to visit some of our spinning mills at the approach of meal hours, and examine the food which has been brought to sustain them during the day, to look into the tin vessels and see the fluid, which can hardly be called tea, infused frequently from the evening before, allowed to remain all night in metallic vessels, warmed up again not only for breakfast but for the mid-day meal, [until] it comes at last to resemble tobacco water . . ., [will turn] away both sad and sickened." He concluded, "Improvement of the food of the mill workers must underlie all attempts to improve their general health'. His concern was clearly shared by some in the industry because he later reports that through the provision of a 'Cooking Depot' some workers were able "to obtain good, nutritious, and well-cooked food, on more reasonable terms than they could themselves prepare it". The provision of such food in the dining hall of the Brookfield Mill is an example of how a non-medical measure played a vital part in improving the health of the work force.[1]

It was around the time that Dr Moore was expressing his concerns about the health of mill workers that the building at the corner of the Crumlin Road and Albertville Drive was erected. Albertville Surgery occupies the whole ground floor and there is an extensive dental laboratory on the first and second floors. Built in the 1860s, some 30 years before the original Mater Hospital was opened, it was first inhabited by a linen manufacturer and then by a resident magistrate. Since 1911 it has been continuously occupied by a member of the medical profession, initially as a place of residence and surgery, and more recently, in common with the changing pattern of professional life, as a surgery only. Dr R M Quinn lived there from 1911. By 1920 the practice had been taken over by Dr McGaughey and about 1923 he was succeeded by Dr Fred Moffatt who continued in practice for 35 years and is still remembered by a number of the older patients.

From the 1860s, the district grew and developed for over 100 years as a thriving area bursting with activity, and as such it is still remembered by many of the older people who continue to live there today. During the last 20 years or so there have been significant changes for two main reasons. Firstly the closure

of all three linen mills around the early 1970s created high levels of unemployment in the immediate area, and secondly most homes in the area have been affected by the troubles. Many people have had to move house because of intimidation. The memory of past tragedy and the legacy of fear lives on in both communities. The decline in business activity and the run down state of many of the buildings have cast a sense of gloom over the area in contrast to the prosperity which it previously enjoyed.

Now we turn to look at some aspects of the health of the local population. But how do we measure 'health'? The Black report, produced in 1980 by a working group set up to study the inequalities of health in the United Kingdom, lists several significant indicators of health; [2] including mortality rates, acute and chronic morbidity rates, sickness absence rates and restricted activity rates. The report points out that each has its limitations, for example, an over-dependence on the first indicator, mortality, can induce indifference towards the third, chronic illness. I will take several of these indicators (chronic morbidity, both alone, and with reference to sickness absence, and then mortality) in our inner city area of Belfast, as well as in other inner city areas.

THE CHALLENGE OF CHRONIC ILLNESS AND DISABILITY

The percentage of people classified as long term ill or disabled is claimed to be a central indicator of the health of a population.[3] The 1991 Northern Ireland Census[4] gathered statistics on chronic illness and disability, allowing a comparison of the level in each electoral ward with the level in the 'Belfast Urban Area'. (This term refers to the entire area of the Belfast District Council, together with certain adjacent electoral wards in the District councils of Castlereagh, Lisburn, Newtownabbey, Carrickfergus and North Down, with a total population of 476,000.) Our practice is situated in the centre of the Crumlin Ward which extends for about half a mile on either side of the Crumlin Road, from its junction with Agnes Street to a point beyond Tennant Street. In 1991 the population of the ward was 3876.

TABLE 1

Long term illness problems or handicap identified in the 1991 Northern Ireland Census for the Belfast Urban Area and for the Crumlin Ward.

		Total population	*Long term illness or handicap*
Belfast Urban Area			
	Total	475,967	62,911 = 13.22%
	Female	250,935	35,994 = 14.34%
	Male	225,032	26,917 = 11.96%
Crumlin Ward			
	Total	3,876	854 = 22.03% (+67%)
	Female	2,047	462 = 22.57% (+57%)
	Male	1,829	392 = 21.43% (+79%)

The average figure for the prevalence of chronic illness and disability throughout the Belfast Urban Area, including the inner city area is 13.22 per 100 (Table 1). The level of long term illness, health problems or handicap for the Crumlin Ward, at 22.03 per 100, is almost 70% greater than the Belfast Urban Area level. When male and female figures are separated the percentage increase for each is still substantially raised. The figures for females is 57% higher, and for males is 79% higher in the Crumlin Ward than in the Belfast Urban Area. This increase is not unique to the Crumlin Ward, the adjacent Shankill Ward has a figure of 21.26 per 100.

TABLE 2

Long term illness, health problems or handicap identified in the 1991 Northern Ireland Census for the Belfast Urban Area and for the Crumlin Ward arranged by age group.

	Belfast Urban Area	*Crumlin Ward*
0-14 years	2.34 per 100	3.54 per 100 (+ 51%)
15-64 years	10.24 per 100	20.01 per 100 (+ 95%)
65+ years	43.71 per 100	46.80 per 100 (+ 7%)

The increased morbidity is not confined to a particular age group (Table 2). The rate for those under 15 years, is 3.54 per hundred for Crumlin Ward compared to 2.34 for the Belfast Urban Area: an increase of 51%. The increase is most marked in the age group 15 - 64 years, with Crumlin Ward having a rate of 20 per 100, compared with just over 10 for the Belfast Urban Area, an increase of almost 100%. Even in those over 65 there is still a slightly higher level compared with the Belfast Urban Area.

TABLE 3

People unable to work because of long term sickness or disability identified in the 1991 Northern Ireland Census for the Belfast Urban Area and for the Crumlin Ward.

		Total population	*Long term illness or handicap*
Belfast Urban Area			
	Total	294,009	18,528 = 6.30%
	Female	152,482	8,178 = 5.36%
	Male	141,527	10,350 = 7.31%
Crumlin Ward			
	Total	2,259	291 = 12.88% (+ 104%)
	Female	1,142	126 = 11.03% (+ 106%)
	Male	1,117	165 = 14.77% (+ 102%)

The Black report also identifies sickness absence rates as an indicator of health. To assess one aspect of this, the Northern Ireland census identifies those who are 16 years and over, and who are unable to work because of long term sickness and disability (Table 3). The combined male and female figure of those unable to work because of long term sickness and disability for the Belfast Urban Area is 6.3 per 100. The figure for the Crumlin Ward is more than twice that, 12.88 per 100, and this difference is maintained for males and females separately.

In general practice we also have the opportunity to identify patients who are unable to work because of chronic illness and disability because, in order to claim state benefits such as statutory sick pay or invalidity benefit, such patients require a medical certificate, now renamed a "statement of incapacity". I identified all male patients of our own practice aged 16-64 years living in this ward, who on 1st April 1994 were in receipt of a statement of incapacity continuously for at least six months. On that date we had 184 male patients aged 16 to 64 years whose registered address was in the Crumlin Ward and 34 (18.48%) of these had been unfit for work for at least six months. Of these 29 (15.76%) were unfit for 12 months or more. Although not directly comparable with the census figure of 14.77%, because of the difference in how the figures were gathered, it does provide further evidence of the high percentage of persons unable to work because of chronic illness and disability. Twenty three of the total of 34 were aged 55-64 years. The most common causes of disability were orthopaedic (10) and cardiovascular problems (10), followed by psychiatric (7), respiratory (5) and central nervous disorders (4). Four patients suffered from more than one condition, either of which would have rendered them unfit for work. These figures are not just for men close to retiring age. Seven (more than 20%) were under 45 years of age which sadly includes one young man in his early 20's whose severe injuries were due to a terrorist attack.

Here then is a challenge to provide continuing medical care for an increased proportion of patients with chronic illness. Medical care not only means periodic review of the patient, referring for further hospital based treatment when the condition deteriorates and providing and reviewing ongoing medication. It must also mean assessing and where possible treating the psychological consequences of such illness, not only overt anxiety and depression, but also the loss of self esteem and that feeling of despair that so often accompanies it.

The 1991 business plan of the North and West Belfast Community Unit included the very praiseworthy objective [5] "To help people with a physical disability realise their full potential in life". But chronic illness also prevents many from realising their full potential. Their illness prevents them from achieving the satisfaction of normal work or even the opportunity to mix socially with their former work-mates. Some form of rehabilitation such as sheltered workshops could provide opportunity for some, to do limited work. For those less able, day centres could provide some social life. But what is happening? In 1991 there were a total of 3488 men and women in North Belfast who were unable to work because of long term sickness or disability. For the physically disabled there is one day centre (Woodlands) situated just off the Cliftonville Road, with 68

patients, and a further 15 patients from North Belfast attend a day centre in Andersonstown. Of those who are mentally ill, about 45 from North Belfast attend an industrial therapy workshop in Duncrue Street and a further 90 attend the Everton Day Centre. All these together add up to less than 220. Thus only one in 16 attends a sheltered workshop or day centre and the majority of those who attend have mental health problems, whereas in our practice sample, about 80% of those unfit for work had physical health problems. The challenge is not only to provide continuing medical care for those suffering from chronic illness and disability but to enable them to live fulfilled lives, despite their illness and disability.

THE CHALLENGE OF INCREASED PREMATURE MORTALITY

The second health indicator is the Mortality Rate. Here again I have compared rates in inner city areas with those for the population as a whole. Some striking figures have been published by Townsend looking at the relationship between deprivation and premature death in Greater Manchester. He calculated standardised mortality ratios (SMR) for each of the 216 wards in that city in the years 1981 to 1983. This is the ratio of the actual number of deaths to the number of deaths which would have been expected if the national level had prevailed, taking into consideration both the total population and age structure of the ward. The figure is then multiplied by 100. A figure greater than 100 indicated a higher than expected number of deaths. Townsend found that the SMR for the wards in Greater Manchester ranged from 69 to 225, and reported a very close correlation between wards which were severely deprived and those which had the highest standardised mortality ratio[6]. Compared with the national norm, he found that in the 25 most deprived wards of the region between 1981 and 1983, there was 1445 more deaths than would have been expected. In contrast the 25 least deprived wards had 291 fewer deaths than would have been expected if the national norm had applied. Professor Brian Jarmin (a general practitioner, and head of the department of general practice at St Mary's Hospital Medical School, London) claims that the mortality rate in inner London, up to retirement age, is 25% higher than in the rest of the country. His name is associated with the deprivation indicies familiar to inner city general practitioners.

But what about Belfast? Even if we just consider a single cause of death such as that of coronary heart disease, there is still a considerable contrast between the figures for our inner city area and those for Belfast and district.

The Belfast Monica project has been recording deaths due to coronary heart disease for more than ten years at ward level in the areas of Belfast, Ards, North Down and Castlereagh. The deaths of patients resident in the Crumlin Ward due to definite or possible myocardial infarction in the years 1983-89 have been compared with such deaths in the whole Monica Project area and the figures have been standardised for age and sex. Against a standard figure of 100 for the whole project area, the Crumlin Ward has an SMR of 158 for males and females combined. Even considering the small numbers involved this figure is significantly raised, and this is entirely due to the females (Table 4).

TABLE 4

Deaths from definite or possible myocardial infarction between 1983-89 in the Crumlin Ward, standardised for the Monica project area.

	Actual	*Expected*	*SMR*
Total	24	15.17	158 (p = 0.02338)
Male	12	11.65	103 (p = 0.92034)
Female	12	3.52	341 (p = 0.00001)

Because of the small numbers in a single ward, I have also compared the deaths in a group of eight adjacent inner-city wards in North and West Belfast with the deaths in the total Monica Project area. This time the combined SMR for males and females is 131 and because of the greater total numbers involved is even more significant. Again it is the ratio for females where significance is greatest (Table 5). An investigation into the relationship between social deprivation and premature mortality in electoral wards throughout England found that these were strongly linked. In the region with the highest SMR for coronary heart disease, the ratio for females (143) was higher than the ratio for males (121), confirming the trend which we observed in Belfast[7]. Thus there is strong evidence that inner city areas whether in England or Belfast have a significantly increased mortality rate compared to the overall population.

TABLE 5

Deaths from definite or possible myocardial infarction between 1983-89 in eight inner city wards in North and West Belfast (Court, Shankill, North Howard, Woodvale, Crumlin, Cliftonville, Ardoyne and Ballysillan) standardised for the Monica project area.

	Actual	*Expected*	*SMR*
Total	235	179.35	131 (p = 0.00003)
Male	158	136.67	116 (p = 0.06803)
Female	77	42.68	180 (p = 0.00000)

So what can be done? Health promotion is now an established part of general practice, especially since the 1990 contract. Many different issues have been highlighted including smoking, alcohol, obesity, hypertension, raised cholesterol, unhealthy eating and lack of exercise. Of course some people just cannot be motivated to change, like the plump lady who had been given a strict diet. When asked by her friend if she was sticking to it replied "I don't see any point in starving to death just to live a little longer".

The challenge is to decide how we can influence people with risk factors, in a situation where many of our patients suffer from multiple factors. If we attempt to concentrate on all the factors present, we dilute the impact we make on any one factor. We may have to set priorities, perhaps concentrating on only one

factor per patient, and have to use our resources chiefly to deal with those risk factors which have been shown to have the greatest adverse effects on health. If all our patients who are hypertensive were identified and adequately treated, and if we were able to achieve complete cessation of smoking in all our patients who currently smoke, we would have made an enormous contribution to improving their life expectancy.

Levels of smoking are traditionally high in inner city areas. Our own figures, though not yet complete, indicate that the level of smoking in those over 16 years is around 37% against a United Kingdom average in 1992 of 29%. We have used various methods, from a nurse led 'stop-smoking' clinic to transdermal patches with regular doctor review, to encourage smokers to stop, but it remains an up-hill task. And yet regular gentle encouragement of patients does pay dividends. I was pleased recently to see an example of this when a local patient came to see me for holiday immunization. He was going to Egypt and when I enquired into his reasons for going, he told me he had stopped smoking and was off to Luxor on the Upper Nile with the money he had saved.

THE CHALLENGE OF UNEMPLOYMENT

In addition to the increased level of chronic illness and disability and the raised mortality rate, the level of ill health in the inner city area is further compounded by the problem of unemployment. Crumlin Ward has over 35% unemployed, more than double the 16.6% of the whole Belfast Urban Area. Unemployment is not just a social factor but one which quite independently has been found to have a significant influence on levels both of morbidity and mortality. Much work has been done on the subject of unemployment and health.[8] Of 80 unemployed men in southeast London who were well at the time of job loss, over 30% had developed either anxiety or depression within six months of becoming unemployed.[9] The association of unemployment with physical illness was strongly demonstrated by the British Regional Heart Study, a prospective study of cardiovascular diseases in over 7000 middle aged men, selected at random from general practices in 24 towns throughout the UK. After standardisation for age, social class, town of residence and smoking, the 'non-ill' group of unemployed, that is those who did not consider that their unemployment was in any way due to ill health, still had a significantly higher level of ischaemic heart disease than the employed, with a standardised figure of 16% against the employed figure of 10%.[10]

The implications of unemployment upon general practice workload was shown by Beale, in Wiltshire. In 1982 a long established factory there closed, making 302 workers redundant. It was found that 122 of these workers had been patients in the local health centre continuously from 1976-1986 and their records were reviewed. This ten year period was chosen because it covered four years of secure employment, two years of insecure employment and four years of redundancy.[11] He found a significant increase in work load in both primary and secondary care as a result of redundancy. At the end of the four years of redundancy, those who had lost their job and not found re-employment, had consulted their general practitioner on average 57% more frequently, were referred to hospital outpatients departments 63% more often, and had attended hospital out-patient departments 208% more frequently, than those enjoying secure employment.[12]

Evidence that unemployment is associated with increased mortality, is provided by a study, carried out using data from the 1971 United Kingdom National Census. This showed that in the following 10 years, unemployed men had a significantly raised SMR at 121.[13] But it was not just the men themselves who were at higher risk, as the SMR for wives of unemployed men was similarly raised at 120, and there was also an increase in perinatal and infant mortality in their children.[8]

If as the evidence so strongly suggests, unemployment is a cause of ill health, this is a double blow to the unemployed. In an age when social status and worth is so often related to ones occupation, the unemployed suffer not only a loss of self respect but also an increased risk of ill health. This is not just bad news for the patients themselves. In an era of purchasing of services by fund-holding practices and by Health and Social Services boards, additional ill health, because of unemployment, means additional costs for the purchasers of medical care.

The challenge may not chiefly be a medical one. Just as in the last century and the early years of this century when the most effective way of improving health was not better medicine but better housing and better hygiene, and in the case of the mill workers we referred to earlier, better food, we are again in an age where social factors may be having a greater impact on health than medical factors, and reducing unemployment may do more to improve health in this area than advances in therapeutics. We must ensure that we know the occupational histories of our patients, and so recognise those whose health problems are associated with unemployment. On a wider level, we may be able to raise awareness of the health consequences of unemployment. We may be able to assist some in finding re-employment by displaying, in our surgeries and health centres, information from our local job centre and local initiatives.

THE CHALLENGE OF PROFESSIONAL STRESS

I am aware that professional stress is not exclusive to inner city practice, nor indeed to general practice, it can effect any of us. Nevertheless some factors are present which make inner city practice a particularly high risk occupation. Stress throughout the medical profession is becoming increasingly recognised as a significant problem. In 1990 the BMA, at its Annual Representative Meeting, commissioned a report from its Board of Science and Education on stress and anxiety in various branches of the profession.[14] The annual conference of the Northern Ireland Faculty of the Royal College of General Practitioners in 1994, spent half a day considering this subject. The BMA published a 100 page report entitled "Stress and the Medical Profession" in 1992. As well as identifying common causes of stress in each of the different branches of the profession, it makes some useful recommendations regarding its management and prevention.

What causes stress in general practice? Two studies were carried out a few years ago by members of a psychology department in Manchester to assess, among other things, the causes of stress in practice. The first obtained the response of 101 general practitioners to a questionnaire containing 32 possible sources of stress, asking them to give a score to each. Analysis revealed four major areas of stress, interruptions of various kinds, emotional involvement, administrative workload and work - home interface, and routine medical work.

The first three of these were also associated with job dissatisfaction.[15] The second study used a confidential questionnaire to over 1800 general practitioners, and found that four job stressors were predictive of "high levels of job dissatisfaction and lack of mental well-being," – demands of the job and patients' expectations, interference with family life, constant interruptions at work and home and practice administration.[16] The last three of these factors were also identified in the first study. A study in Northampton assessed the factors which affected a general practitioner's mood in the course of a working day. The responses of 44 general practitioners who completed self-monitoring diaries at hourly intervals revealed that the factors which led to the most lowering of mood were hassle at work, pressure of time, and domestic dissatisfaction.[17] The factors which led to the greatest improvement in mood were "domestic happiness" and the satisfaction of working efficiently, and to time.

In inner city practices in Belfast I would suggest that certain pressures are present which exacerbate the stress on practitioners. The current terrorist situation has had a considerable impact on such practices. It has been said that terrorism had claimed more lives in North Belfast than in any other part of Ulster. Three years ago within the space of 12 months two of our patients, one from each side of the community, were murdered. Since then three further patients have been killed and others have been injured and I am sure most other practices in the area have had similar experiences. We have become all too familiar with the condition of Post Traumatic Stress Disorder.

A further factor is the increased work load. The higher incidence of chronic illness clearly increases the work load and we have shown that even among those who are apparently well, the high level of unemployment is itself associated with a significant increase in work load. In common with many inner city areas we have a higher than average percentage of elderly people, 21% compared with a regional average of about 14%. Often people who have lived their life time in the area continue to live on in retirement while the younger generations have moved out to the suburbs. There is also a demand for prescriptions for medicines which are also available for purchase over the counter, no doubt because the vast majority of people living in the area are exempt from prescription charges.

The 1990 Health Service reforms have had a profound affect in general practice but perhaps more so in inner-city areas where the effort needed to meet the various health targets has been, in general, much greater than elsewhere. Traditionally in these areas, levels of uptake of cervical cytology and even childhood immunizations have been much lower. For example in 1989, despite an active childhood immunization programme, our rates were only about 65%. It has taken and continues to take considerable effort by our medical and receptionist staff to reach and maintain the current levels of 97%. Health Promotion activities too, seem to require additional effort. Even when patients do make appointments there is a high level of non-attendance.

Violence or the threat of violence is becoming an increasing risk particularly in inner-city areas, although it is not unknown in other areas. The greatest danger appears to be when doing night calls and in some parts the demand for drugs is the chief motive for such attacks. Attacks can also occur on the premises and

within the past eight years our practice has suffered two such incidents. Receptionists are likely to experience more verbal abuse than anyone else in the practice, and they too can be at risk of physical violence. We have recently drawn up procedures for dealing with patients who threaten to be violent.

In the midst of these situations it is probably inevitable that we will at times feel stressed. How do we handle it? First let me give you some personal experiences. I find the ability to see humour in every-day situations a very effective antidote to stress. Our work does have its lighter moments, such as when the little old lady suffering from macrocytic anaemia, orders a repeat prescription for her "frolic acid" tablets, or when the patient explains in graphic terms that he was in such pain the previous night with his renal colic that he had to send for the "rotary doctor." My mind pictured the North Belfast flying doctor service attempting a helicopter landing in his front garden. We have one elderly couple with the surname 'King'. When I enquired of the gentleman what his name was he replied "George, George King", and added "but I don't mind if you call me King George".

Religion has been blamed for much of our troubles in Northern Ireland. Professor Andrew Sims, until recently President of the Royal College of Psychiatrists, stated in his valedictory address to that college that although religious fervour can be an immense force for evil and destruction, religion can also be a protective factor in promoting good health.[18] In the midst of stressful events I have found religious faith to be a major source of strength.

But that does not stop us from exploring all possible practical ways of handling stress. The Northampton study identified "pressure of time" as a major factor in lowering mood and that "working efficiently and to time" was associated with improvement in mood. Many of us can probably identify with these sentiments. Thus effective time management must be an important factor in reducing stress. We may have to be more realistic about giving adequate time for paperwork or about when we permit interruptions with telephone calls, etc. Of course a certain amount of our work is unpredictable, but "this unpredictability is the very thing that must be allowed for, with sufficient time being allowed for the extras".[17]

Another source of stress is the high and at times unrealistic, expectation of patients. We all meet patients from time to time who are unreasonable in the service they expect either from ourselves or from other members of our practice team. Handling this successfully requires a high degree of social skill. Management and administration in a practice is becoming increasingly demanding and requires a high level of managerial skill. Training in both social and managerial skills has been widely adopted in many other work settings [16] and may need to be used more in general practice. When a major health promotion initiative was launched in 1989, the Eastern Board funded a two day residential seminar in Newcastle which gave many of us confidence in launching our own programmes. At a time when complying with the increasing demands of our contract requires a corresponding increase in the amount of management and administration, I suggest that a similar seminar in social and management skills should be offered, without the disincentive of heavy course fees, bearing in mind that we already have to provide cover for our own practices.

Although domestic problems were a significant cause of lowering of mood, "domestic happiness" was the chief single cause of improvement in mood.[17] Perhaps we should all take this as a vital reminder to cherish and nourish our family relationships. Unfortunately despite all the efforts to cope with stress, there are times when we may become overwhelmed. Prolonged stress may lead to the syndrome of "burn out". This has been defined as physical, emotional and mental exhaustion caused by long term involvement in situations which are emotionally demanding and very stressful, combined with high personal expectation of our performance. It presents as exhaustion with tiredness and irritability, depersonalisation when we treat patients and others as if they are objects and low productivity and feelings of low achievement.[14] What can we do at such times? In many cases it is embarrassing to discuss the matter with partners or even other colleagues. It is a bit like the notice in the office which says "stress – you can't have stress until everyone returns from sick leave". It was to help in these and similar situations that the National Counselling Service for Sick Doctors, was set up in 1985. It receives 300-400 calls per year either from doctors who are themselves under stress or from a colleague of a stressed doctor. Problems dealt with include all forms of stress including marital tensions, drug and alcohol dependence and other forms of mental illness. The Counselling Service is able to give the name of an adviser in the same branch of medicine, or if appropriate in psychiatry, whom the caller may then contact.

A paper published by the Kings Fund a few years ago, on the health of doctors, highlighted the fact that contrary to what some patients imagine, doctors do get ill. It found that doctors were very reluctant to present themselves to colleagues with symptoms which might imply their inability to cope, like headaches or insomnia, and recommended that consideration be given to the establishment of a family doctor service for family doctors.[19] It is to be hoped that such a service will be provided, and sooner rather than later.

Our response to the challenge of professional stress must be to ensure that those who suffer, receive all possible help, and that we all develop to the full those skills needed to deal successfully with factors causing stress. Moreover I believe that a profession where the morale is high is a profession where there is less stress. Morale is higher in general practice when we can give adequate time to caring for our patients. After all, the essential core of general practice is the consultation between the patient and the doctor. We may not feel that those in charge of the Health Service appreciate this work but our patients certainly do, and I believe that this is even more true in an inner-city practice where the higher level of illness gives us more opportunity to provide care.

CONCLUSIONS

I have tried to indicate what I see as the challenge of inner city practice;

— to provide an effective service for our patients and in particular to ensure that the best quality of life is provided for those with chronic illness, and disability,

— to concentrate on effective measures to reduce premature mortality and, until the situation changes,

— to reduce the morbidity stemming from high unemployment.

But equally importantly it is to take all possible steps to protect our own health especially in the area of stress.

As long as 15 years ago the importance of giving high priority to the medical needs of those living in inner-city areas was recognised. The report of the Royal Commission on the National Health Service under Sir Alec Merrison in 1979 stated that "improving the quality of care in inner-city areas is the most urgent problem which NHS Services in the community must tackle".[20] Patients have been encouraged to change their life style, and further financial benefits have been provided for the disabled, but too often this has actually added to the work load of an already overburdened professional staff. Further resources are needed but these resources must now be focused on providing maximum support for the general practitioners so that all those working in inner-city areas can effectively, efficiently and enthusiastically rise to the challenge of inner-city practice.

ACKNOWLEDGEMENTS

I wish to thank my partners Dr Karin Williamson and Dr Ruth Gardiner for permission to review the records of their patients, Professor Alun Evans for access to Monica Project information, Dr Chris Patterson for access to information from his own thesis and help with analysis of mortality figures, and Mrs Janet Drake of Queen's University Medical Library for help with researching the literature.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 31 - 33, April 1995.

Folic acid prescription in pregnancy

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Accepted 21 February 1995

SUMMARY

We resolved to prescribe folic acid supplements for all women who attended this practice during the first twelve weeks of pregnancy. Six months after this decision a prescription was recorded in only 13% of cases: this compared with 18% during the two months immediately following the decision. It was resolved to improve this performance and observations six months later revealed a prescription recorded in 63% of cases. Subsequently a new form for recording an antenatal consultation was devised and six months after its implementation, 100% recording of folate prescription for appropriate cases was observed. It was concluded that these simple audit exercises prompted changes in practice which helped to improve standards of patient care.

INTRODUCTION

In 1992 the Department of Health and Social Services sent a circular [1] to general practitioners advising that women should take folic acid supplements prior to conception and during the first twelve weeks of pregnancy with the aim of reducing the incidence of neural tube defects. Many of our patients had diets which were low in folate, therefore we decided that we should prescribe folate supplements for those who presented to us at less than twelve weeks' gestation. We recognised that those who did not present before the sixth week of gestation would not be protected from neural tube defects [2] in their current pregnancy but that the advice given with the supplements should have some benefit in relation to future pregnancies. Our aim was that all patients presenting before the twelfth week of their pregnancy should have a record in their notes of having been prescribed folic acid.

METHOD

The study was based within one group general practice in an area of Belfast of low socio-economic class. Patients who were pregnant, less than twelve weeks gestation and consulted their general practitioner during May or June 1993 were identified from practice records. The medical notes of all these patients were examined manually and a data sheet was completed for each patient, recording details of their age, gestation at presentation, number of previous pregnancies and personal or family history of neural tube defects, in addition to information regarding folate prescription.

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In order to set a background against which to view these findings, we carried out the same exercise for patients who presented during January or February 1993, immediately following the decision regarding our practice policy for folate prescription. The same exercise was repeated again for patients presenting in January or February 1994, six months after the original observations were made and partners had resolved to improve their performance. Following these observations one partner designed a new form for recording an antenatal consultation. This was incorporated into routine practice and the audit exercise was again repeated for patients presenting in May or June 1994.

RESULTS:

A total of 96 patients' records were examined. Their ages ranged from 16 to 42 years, with almost 70% being aged between 20 and 30 years. Approximately 20% of patients presenting for care were primigravidae. The majority of patients (60%) had one, two or three previous pregnancies, the highest number noted being nine. One patient had a previous baby with a neural tube defect and six others had a family history of neural tube defect recorded. Of all the patients presenting at less than twelve weeks' gestation, only 25% presented before their seventh week: most (52%) presented at seven or eight weeks and the remainder later than this.

TABLE

Frequency of record of folate prescriptions for patients presenting at less than 12 weeks' gestation for each observation period.

	Number of patients (%)		
Observation Period	*Folate Prescription* Recorded	*Folate Prescription* Not recorded	*Total*
Jan/Feb 1993	5 (18.5)	22 (81.5)	27
May/June 1993	3 (13)	20 (87)	23
Jan/Feb 1994	14 (63.6)	8 (36.4)	22
May/June 1994	24 (100)	0 (0)	24

The table shows the frequencies of a record of folic acid having been prescribed for patients during the four periods of observation, displayed in chronological order. The initial audit, done for patients presenting in May and June of 1993, showed a positive record in only 13% of cases. In comparison, a figure of 18.5% was noted immediately following the practice's decision to prescribe it; 63.6% after resolution to improve performance and 100% after implementation of a new form for an antenatal consultation.

DISCUSSION

Although neural tube defect is a problem which is of relevance to the community within Northern Ireland and despite a DHSS recommendation in 1992 that women should take folic acid supplements prior to conception and during the

first twelve weeks of pregnancy as a preventive measure,[1] there is scant evidence of mass public education on this. The failure of health care professionals in providing this message was reflected in a recent report of women attending antenatal clinics in London: only 5% reported a preconceptual increase in folic acid consumption, 26% did increase their consumption when they realised they were pregnant but 67% were unaware of its value.[3]

The community within which the currently reported study took place tends not to eat a diet rich in folate: fresh vegetables, fruit and fortified breakfast cereals, which are good sources of folate, are not commonly consumed. Many pregnancies are not planned and, amongst those which are, we as general practitioners are not aware of many in which folate supplements have been taken prior to conception. Hence, we felt it was worthwhile to prescribe folate supplements for women presenting at less than 12 weeks gestation and to give them advice relating to future pregnancies. Previous studies have shown that patients generally do welcome advice from their general practitioners regarding lifestyle habits, including diet.[4]

The results of our study show, however, that it is important not merely to make a decision, but also to observe its outcome. The findings of the initial period of observation, only 13% of appropriate cases being recorded as having been prescribed folic acid, were a matter of concern to the general practitioners. All felt that they had been more diligent in their adherence to the practice decision than the observations indicated. Consequently there was an avowed commitment to more diligent recording of prescribing but repeat observations six months later, despite showing considerable improvement (63%), revealed a shortfall in the desired standards of care.

An advised method of improving quality of care is to solve problems and implement change.[5] The solution devised for the current problem was the design of a new form on which to record details of an antenatal consultation, with specific spaces allocated to documenting family and personal history of spina bifida, provision of folate supplements and dietary advice. The result of the reaudit of the practice's performance with regard to prescribing folic acid for women presenting at less than twelve weeks gestation was both encouraging and rewarding: records showed 100% achievement of the target.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 34 - 38, April 1995.

A survey of the use of prostitutes (commercial sex workers) by new male attenders at a genito urinary medicine clinic

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Accepted 29 November 1994

SUMMARY

This study documents the use of prostitutes (commercial sex workers) by new male patients attending a genito urinary medicine clinic. 541 consecutive male patients completed an anonymous self-administered questionnaire. 48 (8.9%) gave a history of previous purchase of sexual services in Northern Ireland and/or elsewhere; 69% of these encounters occurred outside Northern Ireland. The largest group were single men aged 20-29 years. 87% of those who purchased services in Northern Ireland were asked by the prostitute to use a condom compared with 60% elsewhere, but there was no significant difference in actual condom use between both groups (66.7% vs 72.7%) Only 21% of patients who had purchased the services more than once used condoms consistently and 29% were willing to pay more for unprotected sexual intercourse. 40% attributed their attendance at this clinic directly or indirectly to their encounter with a prostitute. Encounters with prostitutes were often related to alcohol consumption, 88% sometimes or always purchasing these services after drinking alcohol. Despite widespread publicity at-risk behaviour involving unprotected sexual intercourse with prostitutes is not uncommon. Health education should be targeted at the young single male who travels outside Northern Ireland.

INTRODUCTION

Prostitutes (commercial sex workers) are an important source of sexually transmitted disease and the association has been extensively studied in the past.[1-3] With the advent of human immunodeficiency virus (HIV) infection, concern about this association has been heightened and during the early spread of HIV infection in North America and Europe, prostitutes were viewed as a reservoir of the virus. Much of the literature on the spread of sexually transmitted diseases and HIV infection in the commercial sex industry has focused on those who sell services rather than their clients.[4-6]

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A project by the public health department of the Eastern Health & Social Services Board and the genito urinary medicine department at the Royal Victoria Hospital identified 23 prostitutes working in Belfast, but only nine of these (7 females, 2 males) agreed to answer a questionnaire. This revealed a high level of knowledge as to transmission of HIV infection and a reported 100% use of condoms with all clients by the female prostitutes and of 75-90% use of condoms for anal sex by the males.

The aim of the present project was to document the previous use of prostitutes and the behaviour of new male attenders at the department of genito urinary medicine. Various estimates have been made with regard to use of prostitutes in the general population.[7-9] Given the characteristics of patients attending this clinic, a study of this nature cannot give an accurate estimate of the frequency of the use of prostitutes in the general population in Northern Ireland, but it can help us to formulate policies for health education of patients in an effort to control the spread of sexually transmitted disease.

METHODS

Consecutive new male attenders at the genito urinary medicine (GUM) clinic, Royal Victoria Hospital, Belfast, from October 1993 to end of December 1993 were asked to complete a self-administered anonymous questionnaire when they registered with the clinic. The questionnaire included age, employment, marital status and sexual orientation. It also asked if they had ever purchased services from prostitutes. Those who answered yes to this question were asked further questions on whether they had purchased services locally in Northern Ireland and/or elsewhere. Particular attention was paid to the source of services purchased (street prostitution, organised brothels, massage parlours), the nature of these services, and the use of condoms by attenders and prostitutes.

RESULTS

We recruited 541 male attenders over the three month period. Social and demographical details are shown in Table 1. Forty-eight (8.9%) admitted to using the services of prostitutes. Five hundred and twenty-eight (97.6%) were heterosexual, 11 (2%) were homosexual/bisexual. All users of prostitutes were from the heterosexual group.

Twenty-eight (58.3%) of the attenders who had purchased these services had regular sexual partners, compared to 329 (67%) of those who had never used the services of a prostitute (NS, $p > 0.25$). Most of the encounters occurred outside Northern Ireland, 33 entirely so and seven intermittently.

Fifteen of the 48 (31%) had purchased services locally in Northern Ireland. Ten involved street prostitution in Belfast, and a further one outside Belfast. Three had purchased services in organised brothels, mainly through advertisements in local adult magazines, two in private houses and one in a massage parlour (some respondents gave more than one response). Ten had purchased the services within the last 12 months. The most common form of services bought were vaginal and oral sex (5), oral sex only (4), masturbation and oral sex (2), and vaginal intercourse only (1); two did not respond to the question. None of the services bought involved anal intercourse or male prostitutes.

TABLE 1

Age, marital status and employment details of the 541 male attenders at the genito urinary medicine clinic during a three month period.

	Has used prostitutes	*Has not used prostitutes*
Age		
≤ 20	1 (2%)	41 (8%)
20-29	24 (50%)	281 (57%)
30-39	17 (36%)	116 (24%)
40-49	6 (13%)	50 (10%)
> 50	0	4 (1%)
No answer		1
Marital status		
Single	29 (60%)	325 (66%)
Married	9 (19%)	93 (19%)
Co-habitating	5 (10%)	35 (7%)
Separated	4 (18%)	25 (5%)
Divorced	1 (2%)	15 (3%)
Employment		
Full time	35 (74%)	332 (67%)
Part time	2 (4%)	27 (6%)
Short term unemployment	4 (8%)	27 (6%)
Long term unemployment	3 (6%)	56 (11%)
Student	3 (6%)	45 (9%)
Others	1 (2%)	5 (2%)
No Answer	0	1
TOTAL	48	493

Forty respondents purchased services at some time from prostitutes outside Northern Ireland (Table 2). The services most commonly bought were vaginal intercourse (24), oral sex by prostitutes (7) and masturbation (4). No anal intercourse or male prostitutes were involved.

Most of the clients of prostitutes in Northern Ireland (13/15, 87%) were asked to use a condom for the last services they bought. Only one was not asked to use a condom and he did not do so on a second occasion. Of these 15 clients, only 10 actually stated they had used a condom, one did not, but four did not respond to the question. All but one had purchased services more than once, but only three had used condoms consistently, and three had never used one. Eleven had been provided with a condom by the prostitute during their last visit. Four of the respondents stated that they were willing to pay more for unprotected sexual intercourse, one of whom never used condoms in any case.

Only 24 (60%) of the clients of prostitutes outside Northern Ireland were asked to use a condom and they all did so. Nine (22.5%) were not asked to use condoms, three did not use condoms subsequently, and seven did not respond. Compared to services bought in Northern Ireland, the client-initiated safer sex practice is proportionately higher among those purchasing services outside Northern Ireland.

Three respondents always purchased services under the influence of alcohol, two of whom always used condoms. Eight sometimes purchased services when drinking and of these five always used condoms. Only three were always sober when they purchased services from prostitutes, all of whom used condoms. Six of the respondents attributed their visit to the genito urinary medicine clinic to sexual services bought in Northern Ireland.

TABLE 2

Location of purchase of the services of prostitute by forty respondents.

Holland	10
Spain	5
USA	4
Thailand	4
England	4
Republic of Ireland	3
Scotland	2
Saudi Arabia, Kenya, Cyprus, Philippines, Australia, Germany, Brazil, Italy	1 each

DISCUSSION

Little has been published on the use of prostitutes by genito urinary medicine clinic attenders. In one study from the USA 34% of HIV positive men attending a sexually transmitted disease clinic gave a history of sexual contact with a female prostitute within the preceding five years.[10] In our study of over 500 men only 8.9% had ever used the services of a prostitute, and of these only one third had bought the services locally. These findings are in keeping with our impression that there are a small number of sex workers in Belfast. Although

this may be the case, it would appear from this survey that there is a high degree of awareness of safer sex practices among prostitutes in this survey, 87% of clients having been asked to use condoms on their last sexual contact. Although this is not the 100% reported by prostitutes in our previous study, it does confirm a high degree of awareness of HIV and compares favourably with the 60% of clients who were asked to use a condom with prostitutes abroad.

Our finding also compares favourably with a study of prostitutes in Edinburgh, where only 62.6% of female prostitutes consistently asked their clients to practise safer sex.[11] Our study showed that about a third of clients (4/15) were willing to pay more for unprotected sexual intercourse, which is consistent with studies in other parts of the United Kingdom.[12]

A cause for concern is that despite widespread publicity involving preventive measures against the spread of sexually transmitted diseases and HIV infection, a significant number of men are having high-risk contacts with prostitutes abroad, which could be a source of introducing HIV infection into this community.[13, 14] There is a continuing need for preventive education and for the provision of condoms for sex workers and their clients. The potential for problems associated with sex tourism should be acknowledged, and suitable health care messages promoted via the mass media with particular emphasis on appropriate media for travellers.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 39 - 41, April 1995.

Peripheral nerve blocks for paediatric day-stay surgery: one year's experience in a district general hospital

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Accepted 16 December 1994

SUMMARY

Two hundred children underwent day-care surgery using peripheral nerve blockade as an adjunct to general anaesthesia during a twelve month period. Total post-operative analgesia was achieved in 86%, simple oral analgesia was needed in 9% and the remaining 5% of patients required systemic opiate administration for pain.

INTRODUCTION

Paediatric day surgery has been performed in Belfast since 1909 [1]. Children are particularly suited to day care anaesthesia and surgery, being a predominantly healthy population, almost invariably accompanied by an adult. Supplemental regional anaesthesia reduces the need for post operative analgesics allowing more rapid recovery to normal activity [2]. The quality of regional anaesthesia is therefore of paramount importance in the day care hospital. We have audited one year's experience of combined peripheral nerve blockade and general anaesthesia in paediatric day surgery.

METHODS

Between April 1993 and April 1994, 200 unpremedicated children undergoing elective day surgery under general anaesthesia received supplementary peripheral nerve blockade. Surgery included circumcision, minor hypospadias repairs, orchidopexy, hernia and hydrocoele repairs. Dorsal nerve block was performed on children undergoing penile surgery, while ilio-inguinal/ iliohypogastric nerve blockade was used in the remaining patients. The blocks were performed by all grades of anaesthetists following induction of general anaesthesia. Standard techniques of peripheral nerve blockade were employed [3], using 0.25% plain bupivicaine. Diclofenac suppository was administered on a weight calculated basis to some patients, at the discretion of the individual anaesthetist.

In the recovery ward each child was assessed, when fully awake, by an experienced recovery nurse who objectively graded post operative pain as either "none, mild, moderate or severe" (0,1,2,3 respectively). Oral paracaetamol

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for mild pain, or systemic opiate for pain scores 2 and 3 was perscribed for all patients and administered entirely at the discretion of the recovery nurse. Any pain greater than "none" was treated. Following transfer to the day procedure ward, patients were assessed routinely and any further analgesic requirements were recorded until discharge. If a patient was admitted overnight, the reason for this was also documented.

RESULTS

The 200 children studied were aged between five months and thirteen years. The surgery included penile operations (105), hernia/hydrocoele repair (41), unilateral orchidopexy (44), and bilateral orchidopexy (5). Five further patients had bilateral operations of separate nature. No complications attributable to the nerve block were observed. Overall 172 (86%) patients had no pain (score 0), while 17 (8.5%) had mild pain (score 1) requiring oral paracetamol. Eleven children (5.5%) had pain scores of 2 (four patients) or 3 (seven patients) requiring intramuscular opioid analgesia (Table). The incidence of pain was reduced by the use of rectal diclofenac in children undergoing hernia, hydrocoele and unilateral orchidopexy operations. Of the 11 patients requiring opiate analgesia postoperatively, two were admitted for overnight observation. The indications for admission were pain and vomiting respectively.

TABLE

Analgesia requirements in 200 children aged 5 months to 13 years who had supplementary nerve blockage for day surgery: (a) total numbers (b) subdivided by additional use of diclofenac suppository.

	Type of surgery				
	Penile	*Hydrocoele or Hernia*	*Orchidopexy Unilateral*	*Bilateral*	*Other*
A					
No analgesia	97	35	31	5	4
Oral paracetamol	5	4	8	0	0
Systemic opiate	3	2	5	0	1
Total	105	41	44	5	5
B					
Peripheral nerve block only					
No analgesia	67	12	13	0	1
Paracetamol or opiate	6	4	9	0	0
Peripheral nerve block and diclofenac suppository					
No analgesia	30	23	18	5	3
Paracetamol or opiate	2	2	4	0	1

DISCUSSION

Good postoperative analgesia without sedation is a necessary prerequisite for successful ambulatory surgery. Peripheral nerve blockade may be used as an alternative to caudal blockade for postoperative analgesia in children. While the latter is highly successful, it has theoretical disadvantages such as inadvertent intravascular or intrathecal injection, motor blockade and urinary retention. Peripheral nerve blocks are easy to perform and several groups have found comparable analgesic results with caudal blockade. Yeoman and colleagues [2] found penile block as effective following circumcision without causing motor blockade. Ilioinguinal/iliohypogastric nerve blocks have produced equally good analgesia for herniotomy and orchidopexy [4, 5, 6]. Analgesic requirements following peripheral nerve blockade in the latter studies, including children who were premedicated with opiates [6], or benzodiazepines [5] have varied from 0% to 14%. Rectal diclofenac reduced the incidence of post-operative pain following both herniotomy and orchidopexy which would support its more widespread use. If the orchidopexies are excluded, 10% (14/148) of totally unpremedicated children in this audit received additional analgesia, oral paracetamol being adequate in the majority. However, a surprisingly high number of children undergoing orchidopexy (14/52) needed analgesics postoperatively, and of these 11% required an opiate. This may be explained by the increased tissue trauma involved in freeing the spermatic cord in this operation and the site of the scrotal incision may not be anaesthetised unless genitofemoral nerve blockade is also performed.

We would like to thank the surgical and nursing staff for their help and co-operation in this audit.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 42 - 45, April 1995.

Transplantation for chronic pulmonary disease: referral and outcome in Northern Ireland, 1986-1990

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Accepted 2 December 1994

SUMMARY

Eighteen patients have been referred for lung transplantations from Northern Ireland in 1986-1990. Fourteen were accepted but only four achieved transplantation. These rates are lower than for comparable regions in the North of England. The lung donation rate from Northern Ireland during the same period was similar to that for the United Kingdom as a whole. The low referral and transplant rates for Northern Ireland require reassessment of the procedures involved.

INTRODUCTION

Lung transplantation offers the only hope of recovery to patients with terminal chronic pulmonary disease. Neither heart-lung transplantation, single or double lung transplantation are available locally in Northern Ireland and patients are referred to centres in Great Britain. Data from Liverpool[1] (a mainland centre of similar population to Northern Ireland and no local transplantation facilities) had shown sub-optimal referral and transplantation rates for patients with chronic lung disease in that region. The purpose of this study was to determine the number, diagnoses and outcome of all patients referred from Northern Ireland for lung transplantation during a similar five year period.

METHODS

We considered that patients likely to benefit from lung transplantation would be referred from one of the following groups of doctors: all consultant physicians with a respiratory interest, all general physicians in hospitals without a respiratory physician, invasive cardiologists and paediatricians. One of the authors (PTR) contacted each of these consultants by telephone to determine whether they had made referrals to a transplant centre between January 1986 and December 1990. A total of 32 physicians were contacted. Information on patients' age, sex, diagnosis and outcome was obtained either from the case notes or from the referring physicians. Case notes were obtained in 12 of 18 cases. For comparison, data on donations of heart-lungs, hearts and lungs were obtained from statistics prepared by the UK Transplant Support Service Authority from the National Transplant Database maintained on behalf of the UK transplant community.[2]

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TABLE I

Patients referred for consideration of transplantation

Diagnosis	*No.*
Cystic Fibrosis	8
Alpha 1 antitrypsin deficiency	3
Asthma/chronic obstructive airways disease	2
Fibrosing alveolitis	1
Bronchiectasis	1
Emphysema	1

TABLE II

Outcome of patients referred for transplantation

Outcome	*No.*
Transplantation	4
Accepted and died on waiting list	9
Accepted and waiting transplantation	2
Assessed but rejected	1
Died prior to assessment	2

RESULTS

From a population of 1.6 million, 18 patients were referred of whom 14 were accepted. The aetiological groups are shown in table 1, and the outcome of the referral in table 2. Heart-lung transplantation was performed in four patients and two patients had been accepted for transplantation but had not been called by the end of the study period. Nine patients who had been assessed and accepted had died on the waiting list prior to transplantation, two died prior to assessment and one was rejected on age criteria. The referral rate for Northern Ireland was 1.5 and the transplant rate 0.5 patients/million population/year. Corresponding data for UK mainland regions with and without local transplant centres are shown in table 3. The average age of our patient group was 35 years (13-56 years), although three of the four patients transplanted were under the age of 15 years. The four patients transplanted had cystic fibrosis and underwent heart-lung transplantation.

TABLE III

Referral and transplantation rates from four regions.
(patients/million/year)

	Northern Ireland	*Liverpool*	*Tyne & Wear*	*Northern Region*
Referral rate	2.4	4.4	7.5	6.3
Transplant rate	0.5	1.4	2.3	2.3

Data from Northern Ireland and Liverpool taken from 1986-1990.
Data from Tyne & Wear and the Northern Region taken from 1989-1991.

Organ donation from Northern Ireland during the same period was similar to the UK as a whole assuming a population of 60 million (table 4).

TABLE IV

Thoracic donations from Northern Ireland and the UK 1986-1990.
(patients/million/year)

	Heart	Heart/Lung	Lung	Total
Northern Ireland	0.8	0.5	0.4	1.7
UK	1.2	0.3	0.1	1.6

DISCUSSION

Heart-lung transplantation has lagged behind that of solid organ transplantation but became established in the early 1980s[3, 4] and has evolved over the last decade to include the development of single lung-transplantation for pulmonary fibrosis[5] and obstructive lung disease and the introduction of double lung transplantation.[6] Extrapolating from the number of respiratory deaths in patients aged 10-49 years it has been suggested that 3 patients/million/year may be suitable for heart-lung transplantation.[7] This may be a conservative estimate and referral rates from some regions in the United Kingdom are in fact higher (Table 3). Tyne and Wear and the Northern Region are served locally by the Newcastle centre and have a higher referral and transplant rate than both Liverpool and Northern Ireland, neither of which have a local transplant centre. After assessment, UK patients wait an average of nine months and 25% die on the waiting list;[8] in Northern Ireland 40% died whilst waiting during the period of the study.

It seems likely that a locally based service would improve the opportunities of Northern Ireland patients to be referred and transplanted. Northern Ireland has a long established renal transplantation centre: in the early 1980s, transplant rates were higher than in Great Britain; [9] at the beginning of this study the number of living renal graft recipients was proportionately much higher than the UK as a whole.[10] Much of the expertise for pulmonary transplantation is already available locally but the number of cases from Northern Ireland alone would not justify the establishment of a separate unit. An alternative would be a single centre for Ireland serving a population of 4.5 million. The development of more transplant centres might well decrease the activity levels of existing centres, unless the supply of donor organs were increased. Recent reviews on the subject highlight the significant numbers of unused potential organ donors. Hibberd et al identified a potential increase in organ donations from New South Wales from 13 to 45 patients/million/year.[11] They cited the reluctance of physicians to identify and resuscitate potential organ donors together with reluctance of relatives to give permission for use of organs as potential area of improvement.

What then can be done to improve the opportunities of patients from Northern Ireland (and other areas geographically remote from a transplant centre)? The outcome of referral during the period of this study has not been encouraging to the referring clinicians. Given the poor chance of success it may be imprudent to simply encourage further referral. Health authorities are in a position to contract for a specific number of procedures but the resources allocated vary

considerably from region to region. We believe that selection should be based on clinical issues and not on area of residence. In the short term the effect of geographic isolation could be reduced by strengthening the links of such areas with the transplant centres. A centre could have a local representative to provide information and advice to referring physicians. Visits from the centres would reduce the effect of isolation, perceived or otherwise.

We have demonstrated a low referral and transplant rate in a region with no local transplant facilities. We feel there is a need for a better system to facilitate the fair rationing of this scarce resource.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 46 – 50, April 1995.

General practitioner and hospital letters

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Accepted 8 March 1995

SUMMARY

Communication by letter was assessed between hospital consultants and general practitioners for outpatients and inpatients referred to the Ards Hospital during the month of January 1993. The information was assessed to be poor in several sections of 104 outpatient referral letters, and of 89 inpatient referral letters despite a high use of the standard referral letter form. Consultant physicians' or senior house officers' letters to general practitioners achieved higher scores in 72 outpatient letters, and 152 inpatient discharge summaries. The use of headings was approved by 80% of general practitioners and probably accounted for the highest scores for the headed discharge summaries. Further support and education in the use of headed letters is to be encouraged.

INTRODUCTION

Good communication between general practitioners and hospital consultants is vital for efficient and effective care of patients. Usually this will take place by letter, for both outpatients and inpatients. Failure to impart all relevant information may result in delays. At worst patient care will suffer. We present the results of a prospective audit of letter communication for both outpatients and inpatients from the medical unit at Ards Hospital.

METHODS

All referral letters from general practitioners or their deputies for new patients seen at the medical and cardiology outpatient clinics at Ards and Bangor hospital during the month of January 1993 were assessed using a standard form. Most of these assessments were carried out by the consultant concerned. A questionnaire was sent with all consultant and senior house officer letters to general practitioners, who were asked to assess the hospital letter.

Most letters referring inpatients were for emergency admissions. All referral letters for these admissions during the month of January 1993 were assessed using the standard form, again usually by the consultant concerned. All hospital discharge summaries sent out during the same month (but not necessarily referring to the same patients) were accompanied by a questionnaire for assessment by the general practitioner.

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The staff of the audit department at Ards hospital ensured completion of forms. A second or third questionnaire was sent to the general practitioner if there was no reply. Data were analysed using the Statistical Package for Social Services (SPSS).

RESULTS

There were 104 general practitioner letters to outpatients assessed during the study. Of these 99 were from the patient's own general practitioner, with two each from other general practitioners or locums, and one from a general practice trainee. All but two utilised the Eastern Health and Social Services Board standard referral letter. The letter was analysed in five sections: demographic data, presenting complaints and history, past history, drug history and other (mainly social) history. The content in these sections was assessed as good, average or poor. (Table I). Demographic data was the most complete, scored as good in 68 and average in 34. Past history and drug history were scored as poor in 40 and 38 letters respectively, and 28 had a poor score for other (social) histories. (Information was missing for demographic assessment in one case, and other history in four cases).

TABLE 1

General practitioner outpatient letters assessed by the hospital physician (104 letters).

Assessment	*Demographic Data*	*Present History*	*Past History*	*Drug History*	*Other*
Poor	1	13	40	38	28
Average	34	33	22	10	42
Good	68	58	42	56	30

Eighty-two letters were sent from hospital doctors to the general practitioners regarding outpatients within the study period. This was fewer than the number received due to the limits of the study period. Replies to the questionnaire were received from 72 (88%) of the general practitioners. The hospital letter was also analysed in five sections: clarity of diagnosis, clarity of treatment advised, drugs suggested, whether information given to the patient was clear, and whether future plans and review arrangements were clear. These sections were assessed as good, average or poor (some were categorised as unclear or inapplicable). (Table 2). The information was considered good in 59-64 letters in four categories, but the information given to patients was good in only 43 cases and may have been poor in the 13 letters assessed as "none/not applicable" as well as in three other letters.

Eighty-nine inpatient referral letters were considered, which concerned patients referred initially to the accident and emergency department, as well as direct referrals. Of these 61 were from the patient's own general practitioner, 15 from locum or deputising doctors, 11 from other general practitioners, one from a trainee and one was unknown. The EHSSB standard letter was used in only 63 cases. Assessment was as for the outpatient letters (Table 3). Demographic

TABLE 2

Consultant outpatient letters assessed by the general practitioner (72 letters).

Assessment	*Diagnosis*	*Treatment Clear*	*Drugs*	*Patient Information*	*Plans/ Review*
None/ not applicable	1	4	6	13	3
Poor	2	2	2	3	1
Average	10	7	4	13	4
Good	59	59	60	43	64

data, presenting history and drug history were the best documented sections, but were scored good in only 37, 41 and 39 cases respectively. Past history and other (social) history were good in only 21 and 15 cases, and in four no useful information at all was given.

Hospital discharge summaries for 178 admissions were sent out to general practitioners during the study period. These included patients admitted without any referral letter, who were mainly self-referrals to the accident and emergency department. Some late discharge summaries were also sent. Thus the number is considerably larger than the 89 patients admitted with a referral letter. Replies were received from the general practitioner in 152 cases (85%) (Table 4.) Information was assessed as good for clarity of diagnosis in 140 cases, for clarity of treatment in 135 cases, for drug treatment in 132 cases and for review or other plans in 126 cases. The information given to patients was the least well documented section, assessed as good in only 85 of cases with 37 having nothing recorded.

TABLE 3

General practitioner inpatient referral letters assessed by the hospital physician (89 letters).

Assessment	*Demographic Data*	*Present History*	*Past History*	*Drug History*	*Other*
None	4	4	4	4	4
Poor	10	11	32	29	25
Average	38	33	32	17	45
Good	37	41	21	39	15

The discharge summaries had been structured under headings (previous discharge summaries, route of admission, presentation, investigations, treatment, complications, prognosis/discussion, drugs and plans/review), with a slightly different set of headings for cardiac discharges (ECG and cardiac enzyme sections added). These headings were assessed as useful in 122 (80%)

replies from the general practitioners, and only eight felt they were not helpful, although 22 gave no reply to this question. Only 13 general practitioners preferred an unstructured free paragraph style, 121(79%) preferring the headed summaries.

TABLE 4

Consultant inpatient discharge summaries assessed by the general practitioner (152 letters).

Assessment	*Diagnosis*	*Treatment Clear*	*Drugs*	*Patient Information*	*Plans/ Review*
None not applicable	5	6	10	37	15
Poor	3	2	1	4	1
Average	4	9	9	26	10
Good	140	135	132	85	126

DISCUSSION

Good communication of information allows for good patient care. In the case of outpatients, information from the general practitioners was poor in several sections, especially past history, drug history and social history. This was in spite of very high use of the standard letter form provided by the Health Board which has headings designed to reduce important omissions. For medical patients in particular full information is necessary to allow an accurate diagnosis and treatment plan. Outpatient letters from consultant clinics achieved good scores from the general practitioners in most sections, except in respect of information given to patients.

Most inpatient admissions were emergencies. This was reflected in poorer information in some sections of the referral letters, especially past history, drug history and social history. A poor drug history may lead to patients not continuing necessary or vital drugs, or to adverse drug interactions. These poor scores were noted despite high use of the standard letter form. Hospital discharge summaries were assessed by the general practitioners as good in most sections, except in the documentation of information given to patients. Hospital summaries in which headings were used fully were found to give the most complete information. Most outpatient letters from hospital doctors had a list of main diseases at the beginning of the letter which was acknowledged to be helpful.

Newton, Eccles and Hutchinson have shown that general practitioners and hospital consultants reached a high degree of consensus about the contents of referral letters.[1] Where items were thought to be always or usually required, a heading would help to ensure their inclusion. Lloyd and Barnett [2] suggested the use of problem lists in outpatient letters, and this idea has been extended to the use of structured letters.[3] We recommend further study in the use of structured letters for communication between hospital and general practice. The results of this study have been distributed to the general practitioners involved but no improvements have been noted in the quality of subsequent referral letters. The

use of a few headings, such as those defined in this study, may encourage better data communication. Word processing, or typed referral letters allowing free text under suitable set headings should be encouraged.

ACKNOWLEDGEMENT

We acknowledge the help of the audit department, UNDAH Trust, and of the general practitioners who returned questionnaires for the study.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 51 - 57, April 1995.

Paediatric consultation patterns in general practice and the accident and emergency department

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Accepted 28 February 1995

SUMMARY

The age, sex, source of referral and diagnosis of children brought to a paediatric accident and emergency department by their parents were compared to those consulting their general practitioner. A simultaneous, prospective review of these consultations was carried out over a six-week period in an inner-city paediatric teaching hospital and a group practice in a socially deprived urban area.

730 children less than 13 years of age who presented for a new consultation were seen. 629 (86%) presented initially to the general practitioner, who dealt with all but 25 (4.0%) without onward referral to the accident and emergency department. 127 consultations took place at the accident and emergency department, of which 104 (82%) were parental referrals. There was no sex difference in children seen by the general practitioner. There was a decreasing trend with increasing age in the proportion of children who consulted the general practitioner, perhaps due to the higher frequency of injury in the older children. Over three quarters (77%) of injured children were brought directly to the accident and emergency department, compared with only 4% of children without injuries ($p<0.0001$). Of 22 children with injuries who presented to the general practitioner, only 4 (18%) required onward referral.

General practitioners met the great majority of the paediatric workload generated by the practice. Audit between primary and secondary care gives a more reliable picture than data from only one source. Injured children are more likely to be taken to the accident and emergency department. Further study of the severity of injury in children is required to determine if there is potential to reduce parental referrals to accident and emergency departments.

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INTRODUCTION

Considerable attention has been given in the medical literature to the patterns of hospital referral by general practitioners. This has largely related to inter-doctor variation in rates.[1-3] The "gatekeeper" function of general practice has been studied, but attention has focused more on those who have been referred to hospital, with little attention being paid to those dealt with purely in primary care. Criticism has been levelled at general practitioners who have not been available when needed or have tended to refer too many, or too few, patients to hospital.[4-8]

It became clear during practice audit of referral patterns, that, although the general practitioners were seeing large numbers of children, there was also a considerable volume of parental referral to the local paediatric accident and emergency department. It therefore seemed appropriate to study both types of paediatric consultation simultaneously. The aim of this study was to determine whether or not those children whose parents sought medical attention from the accident and emergency department differed in any respect from those seen first by the general practitioner.

METHODS

The study practice has three principals and one trainee and is based in a purpose built health centre. It is situated on the outskirts of West Belfast, in an area which has been affected by civil unrest, and in addition has social problems related to high rates of unemployment and single parent families. Because of such factors it attracts low deprivation payments on the modified Jarman Index.[9] Practice list size during the study was approximately 6,000, 42% of patients being under 13 years of age compared with 24% of the Northern Ireland population as a whole.[10]

The accident and emergency department of the Royal Belfast Hospital for Sick Children is situated three miles from the health centre in an inner city area which is similarly deprived. It has 25,000 new attendances annually, 14% of which result in hospital admission; all emergency admissions are made through this department. During the study period there were no relevant attendances at accident and emergency departments in other hospitals.

Prospective data collection by the trainee took place over the period 1 June to 15 July 1991 inclusive. All *new* primary health care attendances or visits, and all new accident and emergency department attendances involving children under 13 years of age were studied. Review consultations were not included. Details of the patient's age, sex, source of referral, diagnosis and disposal were recorded. The accident and emergency department employs a simple but novel diagnostic coding system (370 codes), which was adopted for use by the general practitioners for the purpose of this study.

Data were stored on Epi Info version 5 [11] and analysed using the χ^2 test, Fisher's exact probability test and the χ^2 test for trend. Stratification was employed to adjust for potential confounding. All tests were conducted at the 5% level of significance. Confidence limits for proportions were also calculated.

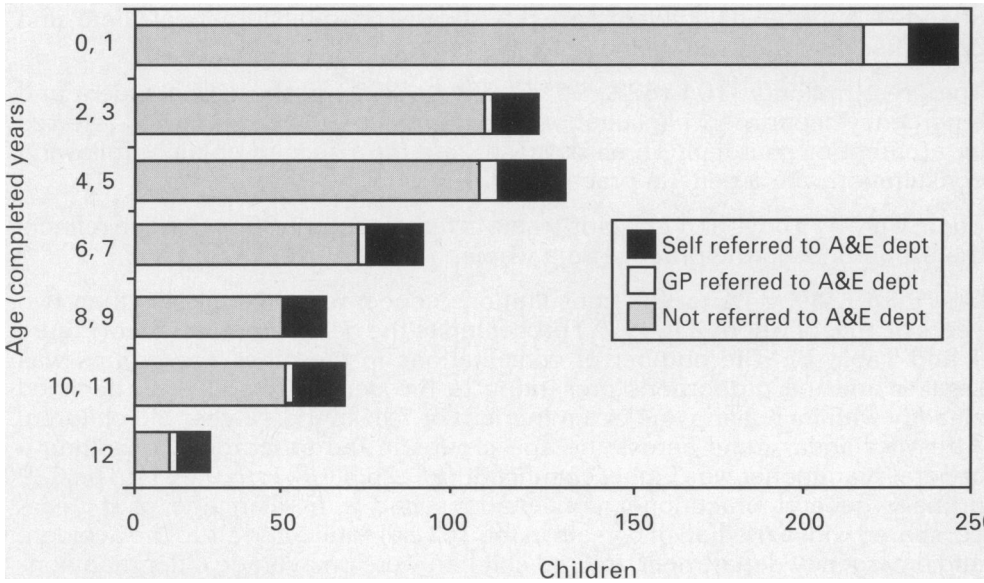

Figure 1 Initial consultation and referral patterns at general practice and the accident and emergency department, by age group in 730 children.

General practitioner consultations

	Yes		*No*	
Age (completed years)	*Not referred to A&E*	*Referred to A&E*	*Self referred to A&E*	*Total*
0, 1	216	15	18	249
2, 3	107	1	12	120
4, 5	106	4	19	129
6, 7	68	2	17	87
8, 9	45	0	13	58
10, 11	47	2	15	64
12	15	1	7	23
TOTAL	604	25	101	730

TABLE 1 *(data for Figure 1)*

RESULTS:

There were 730 children eligible for the study, giving rise to 756 consultations (629 in general practice, 127 in the accident and emergency department). The majority, 629 patients, (86%, 95%CI 84% to 89%) were seen first by a general practitioner. From these consultations, 25 patients (4.0%, 95%CI 2.4% to 5.5%) were referred to the accident and emergency department, all but two of whom

attended. A further 31 children were referred to a hospital outpatient clinic, and no further reference will be made to this group.

The great majority, 104 (82%, 95%CI 75% to 89%) of the 127 accident and emergency department consultations resulted from children being self-referred by a parent or guardian. Three of these were for a second opinion, following consultation with a general practitioner.

There were 375 boys and 355 girls (male to female ratio 1.06 : 1), which reflects the proportions in the practice as a whole.

One third (249, 34%) of the consultations concerned children less than two years of age, of whom 231 (93%) presented to the general practitioner (Figure 1 and Table 1). The number of consultations in the other age groups was smaller and the proportions presenting to the general practitioner declined steadily with increasing age to a minimum of 70% in the 12 year old children. A test for linear trend across the age groups in the proportion consulting a general practitioner was highly significant (χ^2= 26.4, df=1; P<0.001). The 629 primary general practitioner consultations had a median age of 3 years compared with a median of 6 years in the 101 parental referrals to the accident and emergency department. Injured children were on average older than non-injured children (median ages 6 and 3 years, respectively). Stratification by diagnosis (injured/non-injured) of the test for linear trend across age groups (χ^2= 0.20, df=1; P<0.66) indicated that most of the trend with age observed in the proportions consulting a general practitioner could be explained by the larger proportions of injuries occurring in the older age groups. The general practitioner was significantly more likely (χ^2= 6.07, df=1; P=0.014) to refer a child aged less than two years to the accident and emergency department (15 out of 231, 6.5%) than one aged two years to twelve years (10 out of 398, or 2.5%).

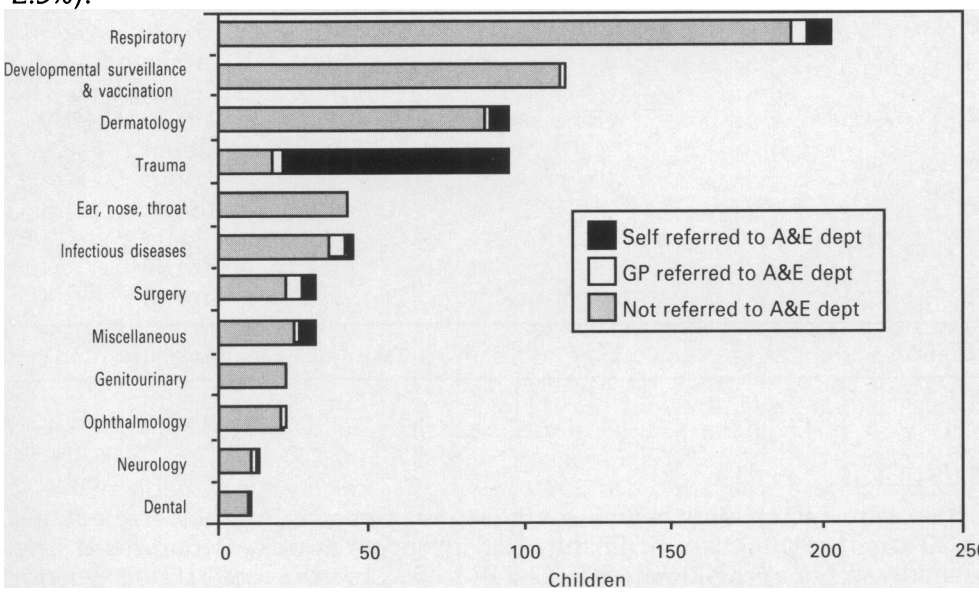

Figure 2 Initial consultation and referral patterns at general practice and the accident and emergency department, by diagnosis in 730 children.

General practitioner consultations

	Yes		*No*	
Age (completed years)	*Not referred to A&E*	*Referred to A&E*	*Self referred to A&E*	*Total*
Respiratory	193	5	8	208
Developmental surveillance, vaccination	113	2	0	115
Dermatology	91	1	5	98
Trauma	18	4	74	96
Ear, nose, throat	42	0	0	42
Infectious diseases	38	4	2	44
Surgery	24	4	5	33
Miscellaneous	27	1	5	33
Genitourinary	21	0	0	21
Ophthalmology	18	2	0	20
Neurology	9	2	1	12
Dental	10	0	1	11
TOTAL	604	25	101	730

TABLE 2 *(data for Figure 2)*

The most common reason for attending the general practitioner was respiratory illness, especially upper respiratory tract infections which accounted for 198 (31%) of the 629 consultations (Figure 2, Table 2). A total of 115 children (18%) attended the general practitioner for developmental surveillance or vaccination, two of whom were referred to the accident and emergency department. The next most common reason was a skin disorder (15%). In contrast, the most common reason for attending the accident and emergency department was injury, which accounted for 60% (78 out of 127) of all consultations. Of the 96 consultations following injury, 74 (77%) presented directly to the accident and emergency department, compared with 27 (4%) of 634 in non-injured children ($\chi^2 = 370.9$, df=1; $P<0.0001$). Although the coding system used in this study did not permit grading the severity of trauma, it was evident that many of the injuries presenting first to the accident and emergency department were of a minor nature. Seven of the eight children who sustained a fracture attended the accident and emergency department directly.

There were 492 general practitioner consultations with medical or surgical disorders (excluding those for developmental surveillance/vaccination); 19 (4%) of these led to accident and emergency referral. By comparison, of the 22 injured children who consulted a general practitioner four (18%) were referred to the hospital. Thus a significantly larger proportion of injured children seen by the general practitioner were referred to the accident and emergency department than those with a medical or surgical disorder (Fisher's exact test P=0.013).

DISCUSSION

In order to gain a fuller understanding of clinical activity at the interface between primary and secondary health care, it is essential to collect prospective information simultaneously from both. There are considerable difficulties in drawing valid conclusions based upon data from one source, including cross boundary referral, inaccuracy in identifying the referring doctor, and the difficulty in obtaining information on private referrals.[12]

To have conducted this study solely from the accident and emergency department would have resulted in the conclusion that 82% of those who attended did so without having consulted their general practitioner. This would have overlooked the fact that during the study period such patients constituted only 14% of the total practice paediatric workload. It might not have been appreciated that of the 730 patients 83% were managed solely by the general practitioner, nor would it have been possible to compare the age or diagnosis-related patterns of attendance at primary and secondary care. Such comparisons are extremely helpful as they could form the basis of schemes to improve service delivery, particularly in primary care.

There has been much discussion about the choice of numerator and denominator for the production and interpretation of general practitioner referral rates.[13] Little attention has been paid, however, to the choice of a suitable denominator for self or parent referral rates to accident and emergency departments. Adjustment for the composition of the population from which accident and emergency attenders are drawn is important in view of the numbers of children in certain practices, such as the one under study. This is also relevant as 60% of the study consultations followed injury, although the equivalent figure for injuries in the overall workload of this accident and emergency department is only 35%.

As far as this study is concerned, parental referral to the accident and emergency department was high following injury (77%), which has also been found in a recent study where the figure was 85%.[14] On the other hand, 82% of those who attended the general practice with trauma did not require hospital referral. Caution must be exercised in the interpretation of this figure for two reasons; firstly the numbers involved are small, and secondly there appeared to be an element of parental selection according to the severity of the injury as seven out of eight children with fractures were brought directly to the accident and emergency department. It would have been desirable to have graded all of the minor trauma cases to determine whether this apparent selection applied to all trauma cases.

The topic of self, or parental, referral to hospital is a sensitive and complex issue. As over 75-80% of the attendances at this accident and emergency department are parental referrals, further study is required, which should involve other practices over a longer period of time.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 58 - 63, April 1995.

Patterns of admission and discharge in an acute geriatric medical ward

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Accepted 6 March 1995

SUMMARY

Patients admitted to a 30 bedded acute geriatric medical ward in 1993 were followed up to discharge. The admission rate on weekend days was half that for weekdays. Six percent of ward discharges occurred at weekends, over half being due to death. Respiratory, cardiovascular and central nervous systems disorders were the commonest reasons for admission (56%) and death (73%). Greater emphasis should be placed on discharging patients at weekends.

INTRODUCTION

In recent years geriatricians have become much more involved in the immediate care of acutely ill elderly people.[1, 2] A recent survey of general medical admissions found that approximately 25% of cases were aged 75 years or more.[3] While geriatric medical units cannot cope with all acute medical illness in elderly people, they deal with a significant proportion.[1, 4] In 1991 we opened a 30 bedded acute medical ward for elderly people (aged ≥ 65 years) on a teaching hospital site. Patients are accepted directly from the general practitioner (during normal working hours) and the accident and emergency department (at all hours), excluding those with a suspected acute myocardial infarct or a gastro-intestinal bleed. Admission and discharge patterns to the acute geriatric medical ward were studied.

METHODS

Data was collected retrospectively on admissions to the acute geriatric medical ward from the 1st January to the 31st December 1993, with follow up to discharge. Age, sex, abbreviated mental test score (for survivors only),[5] length of stay, main diagnosis causing admission, outcome of the admission and cause of death were recorded. Main diagnoses were classified into systems. If no underlying cause was found the diagnoses of falls and poor mobility were classified under the locomotor system. If the presentation was confusion and no precipitating cause was found, it was classified under psychiatric.

To compare the age structure of general medical admissions with acute geriatric medical admissions the number, age and bed-days used by patients aged ≥ 45 years in general medical wards in the Ulster Hospital was obtained for April to October 1993.

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The data were analysed using Chi-squared, unpaired t-tests, regression and ANOVA.

RESULTS

There were 666 admissions to the acute geriatric medical ward in 1993: 81.2% of admissions were from home, 13.2% were from private nursing homes and 5.6% were from residential homes. Five patients remained for continuing care, 661 were discharged. Seventy percent of patients were female. The average age was 80.7 years for males (95% confidence intervals [CI] 79.8 to 81.6) and 81.5 years for females (95% CI 80.9 to 82.1, NS). The average length of stay was 18.3 days (95% CI 16.5 to 20.1). There was no significant association between the length of stay and the abbreviated mental test score. In the general medical wards between one quarter and one third of patients were aged 75 years and over (Table 1).

TABLE 1

Comparison of general medical bed usage in the Ulster Hospital (April to October 1993) and acute geriatric medical bed usage (January to December 1993) in different age groups.

Age band (years)	*General medical wards*		*Acute geriatric medical ward*	
	*% of admissions**	*% of bed-days**	*% of admissions**	*% of bed-days**
45-64	33.8	31.0	0.3	0.2
65-74	34.4	35.7	16.0	19.5
75-84	24.2	25.5	53.8	55.6
≥ 85	7.6	7.8	30.0	24.7

* Of total for patients aged ≥ 45 years

Day of admission, day of discharge

The mean admission rate was 0.99 patients per weekend-day compared with 2.16 patients per weekday. The mean discharge rate was 0.38 patients per weekend day compared with 2.39 patients per weekday. Twenty two of the 40 weekend discharges were due to death (Figure 1).

Lengths of stay and outcome

The highest mortality rate (32%) was seen in patients admitted with stroke disease, who also had the longest average length of stay (43.1 days, 95% CI 31.2 to 55 $P < 0.01$, ANOVA). Twenty percent of patients with a main diagnosis of lower respiratory tract infection died. One hundred and seventy one admissions (25.7%) were due to disorders of the respiratory system, followed in order of magnitude by cardiovascular (15.2%) and central nervous system (14.9%) disorders. Falls with no underlying cause accounted for 3.3% of admissions. Patients with diagnoses classed under central nervous system disorder had significantly longer lengths of stay (Table 2, Table 3, Figure 2).

Fig. 1 Day of admission and discharge in patients admitted to an acute geriatric medical unit in 1993.

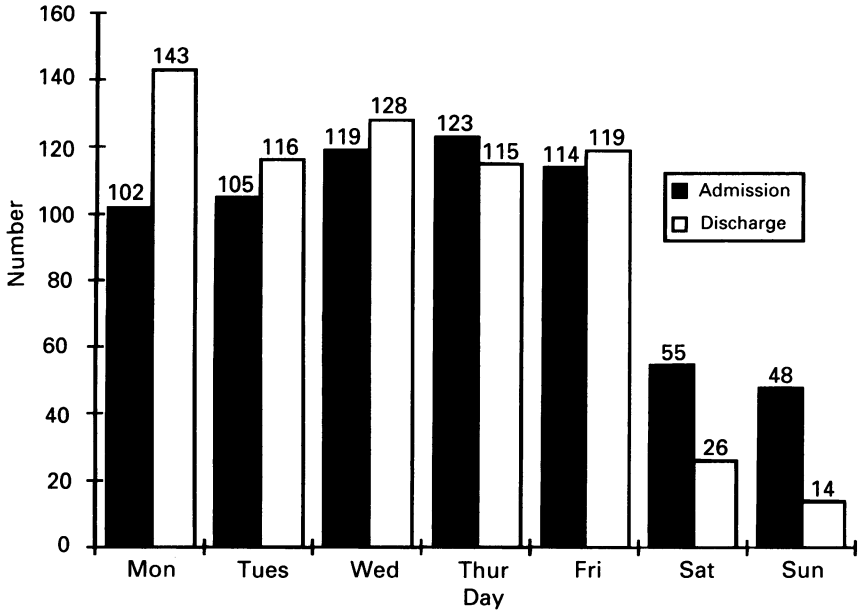
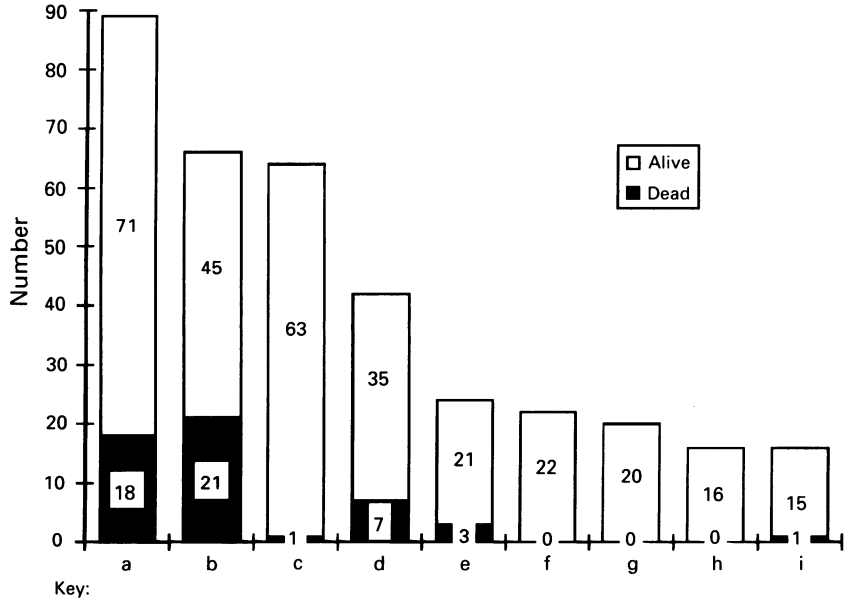


Fig. 2 Outcome (died versus survived) in the seven commonest causes for admission to an acute geriatric medical ward in 1993 (n=359, 54% of total admissions).



Key:
a = chest infection, b = stroke, c = chronic obstructive airways disease,
d = congestive heart failure, e = left ventricular failure, f = falls, g = iron deficiency anaemia,
h = transient ischaemic attack, i = dementia.

TABLE 2

Outcome (died versus survived) of all 1993 admissions (n=666) to an acute geriatric medical ward based on the main cause for admission classified under systems. *

System	*Died*	*Survived*	*Mean length of stay (days)*	*95% confidence intervals*
Respiratory system	25	146	14.5	12.7 to 16.3
Cardiovascular system	15	84	14.6	12.3 to 17.0
Central nervous system	22	77	36.7	28.1 to 45.4
Gastrointestinal system	4	71	17.0	13.3 to 20.6
Locomotor system	2	68	17.3	13.9 to 20.7
Miscellaneous	9	52	13.9	11.1 to 16.7
Genitourinary system	3	21	13.1	7.1 to 19.1
Psychiatric	1	18	19.9	12.0 to 27.9
Metabolic	2	11	12.1	6.5 to 17.6
Vascular	0	12	11.1	6.9 to 15.2
Dermatological	0	9	11.9	7.1 to 16.6
Haematological	2	6	10.6	4.2 to 17.0
Endocrine	0	1	14.0	– –
TOTAL	85	576		

* Excluding the 5 patients who required continuing care in hospital.

TABLE 3

Respiratory (n=171), cardiovascular (n=101) and central nervous (n=99) system diagnoses for admissions (total=666) to the acute geriatric medical ward.

Respiratory system		*Cardiovascular system*		*Central nervous system*	
Chest infection	89	Congestive heart failure	42	Stroke disease	66
Chronic obstructive airways disease	64	Left ventricular failure	24	Transient ischaemic attack	16
Carcinoma lung	8	Myocardial infarct	9	Epilepsy	6
Malignant mesothelioma	4	Cor-pulmonale	7	Primary brain tumour	3
Asthma	3	Angina pectoris	7	Vertebrobasilar insufficiency	2
Respiratory failure	2	Postural hypotension	4	Parkinson's disease	2
Empyema	1	Supraventricular tachycardia	4	Gait dyspraxia	1
		Subacute bacterial endocarditis	1	Guillain Barré syndrome	1
		Cardiomyopathy	1	Subdural haematoma	1
		Complete heart block	1	Benign essential tremor	1
		Mitral and aortic valve disease	1		
Total number	171		101		99

DISCUSSION

The mean length of stay for patients in the present study of 18.3 days compares favourably with 24.1 days and 18.5 days reported from the Belfast City Hospital for elderly patients in acute geriatric and general medical wards, respectively.[4] While the majority of patients were discharged directly from the acute ward, some, who required extended rehabilitation or nursing home placement, were transferred to rehabilitation beds in the unit. Of the 666 patients, 62% were discharged within 14 days and 88% within 31 days. Respiratory tract disorders were the prime cause of admissions (25%), reflecting the acute nature of the ward. While the present study did not show a significant association between length of stay and the abbreviated mental test score it is known that the medical cause for admission is the main determining factor for length of stay of elderly people.[6] In the present study patients with central nervous system disorders had the longest length of stay, nearly twice that of patients classified under 'psychiatric'. Only 5 of the 666 admissions required continuing care in hospital, the policy being to discharge people home or to other institutional care unless they required continuing, regular medical or nursing intervention. Some patients require continuing care for social, psychological and family reasons. Once patients have been assessed as requiring care management they have to wait in hospital until placement, bed provision should allow for this.

There was no evidence to suggest that illness and admission to hospital were dependent on the day of the week. The present study showed that the discharge of elderly patients was mainly planned for weekdays when transport home and availability of domiciliary services ensured safer discharge. The fall in the admission rate at weekends may be linked to the failure to discharge patients at weekends. This in turn could have resulted in general medical wards having to cope with patients who should otherwise have been admitted to the acute geriatric medical ward. Between April and October 1992 and 1993 there was a 62% increase in those aged ≥ 75 years admitted to the general medical wards, confounding any fears that workloads in general medicine would be compromised by geriatricians becoming more involved in acute care.

Although the day of discharge has not been noted in other studies of acute medical admissions of elderly people [1, 4] it is likely that a similar pattern of admission and discharge occurs in many geriatric medical units. In the current climate of efficient use of resources the inappropriate admission of elderly patients as general medical outliers at weekends demands an increase in planned discharges from acute geriatric medical wards at weekends. This will mean that transport to home must be available if required and local health and social services must provide adequate domiciliary care and support services at weekends. Consultants should actively encourage weekend discharges provided home-care and transport to home is safe. To enable shorter stays the possibility of therapists and consultants continuing normal weekday patient-management at weekends should be considered. At present only nursing staff provide a full seven day service.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 64 - 71, April 1995.

Menorrhagia management options

L Doherty, A Harper, M Russell

Accepted 13 March 1995

SUMMARY

A prospective study of the management of menorrhagia in new patients presenting to gynaecological outpatients was undertaken at four centres in Northern Ireland and two in Great Britain. 325 patients were enrolled, the majority of whom (87%) had severe menorrhagia. Patients in all six centres were similar in relation to age, marital status, parity, use of contraception and severity of symptoms. 62% of the patients were managed medically, improved and were discharged. The rates of surgical intervention, in particular in women aged less than 40, appeared higher in the Northern Ireland hospitals than Great Britain. There is a need to review and audit current practices in the management of menorrhagia.

INTRODUCTION

Menstrual disorders are common, accounting for almost 3% of all outpatient referrals and over 20% of referrals to gynaecology outpatients clinics.[1] Menorrhagia, which accounts for a high proportion of gynaecology referrals, causes distress and restriction of daily activities and also leads to high levels of both medical and surgical intervention. In spite of these high levels of surgical intervention few women are found to have any pathological uterine condition, particularly in women aged less than 40.[2]

It is well recognised that the health and social services in Northern Ireland are funded at a higher level than Great Britain,[3] in particular Northern Ireland's per capita expenditure on acute services has been much greater than that for England and Wales.[3,4] There is also variation in the rate at which various types of medical and surgical activity are carried out in different regions in the United Kingdom.[3] One such area is in the treatment of menstrual disorders. Two procedures often associated with the management of menorrhagia, uterine dilatation and curettage (D&C) and hysterectomy, have received much attention both in the media and in the medical literature.[5,6,7] D&C involves a general anaesthetic and often an overnight stay, although the Audit Commission estimates that up to 86% could be performed as day cases.[8] In addition the efficacy of D&C as a diagnostic tool has been questioned.[6]

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In Great Britain D&C rates remained stable during the period 1977-1989 (at around 70/100,000 women per year) while in the United States there was a dramatic decrease during the same period, from 88.7 per 10,000 women in 1977 to 10.8 per 10,000 women in 1989.[6] Accurate data is not available for Northern Ireland for the same time period but D&C rates for Northern Ireland for 1991/92 and 1992/93 are still higher than those quoted for other regions in the United Kingdom for 1989/90. The Northern Ireland rate was 134/10,000 women per year (1991/1992) and 123/10,000 women per year for 1992/1993. In 1989/1990 the rate in England and Wales was: 71.1/10,000 women per year the Scottish rates 65.2/10,000 women per year and the Oxford region rate: 56.6/10,000 women per year).[6,9] (These rates refer to non-pregnancy associated procedures). During both periods in Northern Ireland more than half the D&C's (1991/92-52%, 1992/93 52.4%) were performed in women less than 40 years old [9] whereas in the Oxford region in 1989-90 only 39% of D&C's were carried out in women aged less than 40.[6]

Hysterectomy rates vary up to sixfold between countries[10] and there are also regional differences within countries.[5] Data for Northern Ireland for 1991/92 and 1992/93 show a hysterectomy rate of 33 per 10,000 women per year compared with the UK figure of 30.4 per 10,000 women per year.[9]

This study was carried out to collect information about the clinical presentation, investigation and management of women presenting to hospital gynaecological outpatients with symptoms of excessive menstrual bleeding and to analyse the differences in the management of menorrhagia between different centres.

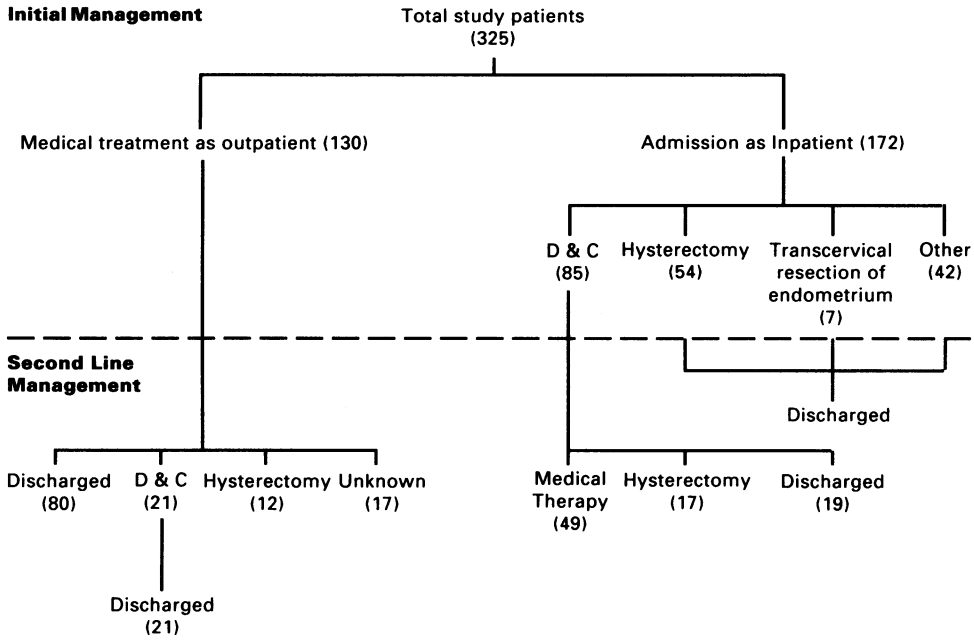

Figure 1 Management of 325 patients with menorrhagia. (some patients had more than one treatment).

METHODS

The two year multicentre prospective study was carried out between January 1991 and December 1992. There were four centres in Northern Ireland, one in Scotland and one in England.

The subjects were all new patients presenting to gynaecological outpatients with symptoms of menorrhagia. They were initially identified by screening the referral letters and enrolled in the study once they had given verbal consent. A three stage colour coded, doctor administered questionnaire was used for initial presentation, hospital admission and review. The questionnaire was designed to obtain basic demographic data, the symptoms of menorrhagia, the nature and results of investigations, proposed management, investigation and treatment in hospital, the outcome of treatment, and patient satisfaction with their treatment. Data was analysed on SPSS/PC.

RESULTS

A total of 325 women were enrolled in the study, 245 in Northern Ireland, 80 in Great Britain. A profile of the patients was carried out in relation to age, marital status, parity, use of contraception and severity of symptoms. The mean age of patients was 38 years (range 15-54) and 48% of women were aged less than 40. Eighty-two percent were married and 86 percent were parous. Forty-three percent were using some form of contraception and 19% had been sterilised. Criteria were devised to describe the patients as having mild, moderate or severe menorrhagia (Table 1). On this basis the majority of patients (87%) were assessed as having severe menorrhagia There was no significant difference in any of these patient characteristics between the 6 centres.

TABLE 1

Criteria used to assess the severity of symptoms in women presenting with menorrhagia.

Criteria	*Mild*	*Moderate*	*Severe*
Total of duration of period (days)	0-5	6-9	10+
Days of heavy bleeding	0-2	3-4	>5
Interval between periods	>24	<24	<21
Other	Use tampons only		Clots, flooding, restricted daily activities. Use of heavy or >2 pads.

Overall 70% of patients were seen by a senior doctor (consultant/senior registrar or gynaecologist) but there was a wide variation between centres (range 10%-91%). Of the 325 patients 282 (87%) had a vaginal examination performed and 82 of these were described as abnormal. Twenty-four patients had outpatient endometrial biopsy performed, and 97 had vaginal ultrasound revealing an abnormal uterus in 31 patients.

The first line management of each patient was decided at the initial consultation; 130 (40%) of the 325 patients were initially managed medically as outpatients (Table 2) and of these 80 (62%) improved and were discharged; 33 (25%) subsequently had a surgical procedure and the outcome is unknown in 17 (13%) (Figure).

TABLE 2

Medical management of patients with menorrhagia.

Treatment	*No*
Hormones	61
Prostaglandin inhibitor	22
Antifibrinolytic inhibitor	21
Hormones and prostaglandin inhibitor	14
Hormones and antifibrinolytic inhibitor	8
Prostaglandin inhibitor and antifibrinolytic inhibitor	4

172 patients (53%) were initially admitted to hospital for investigation and treatment; 85 of these had a D&C performed, 54 underwent hysterectomy, seven had a transcervical resection of endometrium and the remainder (42) had a variety of other procedures carried out (Table 3).

TABLE 3

Inpatient management of patients with menorrhagia.

Procedure	*No*
D&C only	89
Hysterectomy only	66
D&C and hysterectomy	17
Oophorectomy	22
Transervical resection of endometrium	7
Blood transfusion	14
Removal of intrauterine contraceptive device	4
Sterilisation	2

Overall 205 out of the 325 patients (63%) were admitted to hospital at some stage for investigation and management of their symptoms. Of these 106 had a D&C performed (74% as a day procedure). Forty of these D&C patients were discharged with no further treatment, 17 subsequently had a hysterectomy and 49 were subsequently treated medically.

Eighty-three of these 205 patients admitted to hospital had a hysterectomy performed, 54 (65%) having had no prior treatment. This operation was undertaken for severe symptoms in 76 (92%) of cases. The post-operative complication rate was 25%, the most common complication being a wound infection. Pathological findings were normal for the 24 endometrial biopsies, and all of the 106 D&C's. For the 83 hysterectomies 31 were normal, 31 showed one or more fibroids, 14 adenomysosis, 6 had endometriosis and there was one case of squamous metaplasia.

The preliminary analysis having shown a high rate of surgical intervention (62%), we compared rates of D&C and hysterectomy in the individual centres. Due to the small numbers involved in some centres the results for the four Northern Ireland centres were pooled and compared with the combined results from the two Great Britain centres. This suggested that the four centres in Northern Ireland performed proportionally more D&Cs than the two Great Britain centres ($\chi^2 = 0.33$, $p>0.5$), and that more Northern Ireland women aged less than 40 years had a D&C performed ($\chi^2 = 1.72$, $p = 0.19$), although neither of these differences achieved statistical significance. More patients in Northern Ireland had a hysterectomy performed than in the centres in Great Britain ($\chi^2 = 5.65$, $p<0.05$).

TABLE 4

Comparison of Northern Ireland (4 centres) and Great Britain (2 centres).

	Northern Ireland	*Great Britain*	*Total*
Interventions			
D&C	82 (33%)	24 (30%)	106
Hysterectomy	70 (29%)	13 (16%)	83
Total	152 (62%)	37 (46%)	189
Age at D&C			
<40 yr	47 (57%)	10 (42%)	
>40 yr	35 (43%)	14 (50%)	
Total	82	24	106
Age at Hysterectomy			
<40 yr	30 (44%)	4 (31%)	
>40 yr	40 (56%)	9 (60%)	
Total	70	13	83

DISCUSSION

The majority of women in this study were referred with symptoms of severe menorrhagia but little information was available on whether they had been adequately treated by their general practitioners prior to being seen at the gynaecological outpatients. One study of referrals to a gynaecology outpatients revealed that as many as 43% of women referred had mentioned their symptoms less than one month before the referral and half of these did not appear to have symptoms indicating urgent referral, yet their general practitioners had not tried a course of medication.[1]

Almost two thirds of women in this study had a surgical intervention for management of their symptoms – one third of the women having a D&C and more than a quarter having a hysterectomy. No uterine pathology was detected in any of the women having a D&C, or in more than a third of women having hysterectomy. Given that almost two thirds of patients treated medically in the study had a successful outcome it is possible that some of these surgical procedures could have been avoided. It is clear that some gynaecologists believe that it is appropriate to carry out D&C despite the evidence that it is diagnostically inaccurate, therapeutically ineffective and also risks trauma, especially in women who have not had children.[11]

TABLE 5

Age specific D&C rates in Northern Ireland 1992/1993 and Oxford region 1989/1990.

	Age Group (Years) D&C rate/10,000 women	
Age group (Years)	*Northern Ireland* [9]	*Oxford* [6]
<20	13.5	2.5
20–	86.8	33.4
25–	149.4	53.4
30–	196.6	83.2
35–	228.6	103.9
40–	235.7	123.5
45–	246.0	139.5
50–	191	133.1
55–	86.2	75.7
60–	45.1	40.0
>=65	33.1	23.8

(Source: DHSS (NI) PAS Database[9] and Coulter et al[6])

Almost half the women referred were aged less than 40 years. Most women in this age group presenting with dysfunctional bleeding show no gross pelvic disease; in these women endometrial adenocarcinoma is rare, and premalignant adenomatous hyperplasia is also extremely uncommon.[11] The Royal College of

Gynaecologists has recently produced guidelines on the use of D&C in women of this age group,[12] which indicate that there are very few indications for the use of D&C in a woman under the age of 40 and alternative diagnostic methods should be used if indicated, such as outpatient hysteroscopy or endometrial sampling. Transcervical resection of the endometrium is perhaps an acceptable alternative to hysterectomy, but at present there is a lack of long-term follow up.[13]

This study shows higher rates of surgical intervention for the management of menorrhagia in women in Northern Ireland than in Great Britain, despite there being no difference in patient characteristics. Although the differences in D&C rates between Northern Ireland and Great Britain were not statistically significant the high rate of D&C in younger women in Northern Ireland is inappropriate. The results from this study would be in keeping with the high age specific D&C rates for young women in Northern Ireland. Age specific D&C rates are higher in all age groups in Northern Ireland compared with those from the Oxford region (Table 5).

The use of D&C and hysterectomy should be subject to clinical audit in hospitals in Northern Ireland and guidelines developed in conjunction with general practitioners for the management of patients with menorrhagia.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the work of the doctors in each of the following centres in the collection of data for the study:

Royal Victoria Hospital, Belfast BT12 6BA, Northern Ireland.

Lagan Valley Hospital, Lisburn, Co. Antrim BT28 1JP, Northern Ireland.

Craigavon Area Hospital, Craigavon, Co. Armagh BT63 5QQ, Northern Ireland.

Mid-Ulster Hospital, Magherafelt, Co. Londonderry BT45 5AX, Northern Ireland.

St John's Hospital at Howden, Livingstone, West Lothian EH54 6PP, Scotland.

North Tees General Hospital, Hardwick, Stockton-On-Tees, Cleveland TS19 8PE, England.

We also acknowledge the assistance of Ms S McErlain; Senior Research Officer, Eastern Health and Social Services Board, in the analysis of data from the study.

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Annual Oration: Royal Victoria Hospital

Membership by examination

S D Roberts

Accepted 6 October 1994

This is the 167th annual oration. However well one may have prepared, there remains an uneasy feeling, generated from not one, but 166 previous orations, and by the highly discriminating audience present, which contains former as well as future orators.

For an individual, it would certainly encourage humility to measure one's self up against the majesty of the whole of creation. Most find it more practical to relate to groups of about this size. By so reducing the scale of the reference group it is easier to find a place somewhere in it. We can begin to recognise ourselves in comparisons with others, and are in turn recognised by others for what we are. It is comfortable to operate within our peer groups socially and sociably, avoiding conflicts. When disconnected we feel isolated and uneasy. "Belonging" is advantageous.

To some of these groups we do simply belong – to our family, to our race. We are incorporated without any element of choice. Others we chose to join. When we do decide to "join in" we have to agree to accept the principles and the objectives of the other members, and to allow their attitudes eventually to shape our own. "You can tell a man by the company he keeps"; "You can always tell an old Instonian, but you can't tell him much".

After taking my place within my family and amongst my generation of the human race, I embraced Christianity, though I don't actually remember being given a choice of religions. Nor do I remember being asked which primary school – public elementary school as it was then – I would prefer. The first thing I actually remember wanting to join and joining was the Cub Scouts. I also remember much later wanting to join the Staff of the Royal Victoria Hospital. So much so that we sat up all night in the East Wing to enlist as Housemen.

There are similarities between joining the Medical Staff of the Royal Victoria Hospital and joining the 57th Belfast Cub Pack. There is an examination: a medical degree in the case of the RVH and an interview; and the ability to tie a few knots and light a fire with one match in the case of the Cubs. In each case there also had to be an intention and a desire not only to join, but to participate. By becoming involved we received from each in exchange character-building experiences.

Advantages, perceived or real, gained from membership are not often given for free. There is no gain without pain. The pain may be felt only in the wallet, and putting the entry fee up can certainly be highly selective. Similarly, insecurity

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Annual Oration at the opening of the winter session at the Royal Victoria Hospital, October 1994.

S D Roberts, MD, FRCP London, FRCPI. President-Elect, the Royal College of Physicians of Ireland.

for young doctors working long hours in hospital on an uncertain training ladder can become very discouraging. That some other organizations can and do demand absolute obedience, secrecy and life-long fidelity, may just have to be accepted by those wishing to join. Membership can even exact a promise to lay down one's life, for one's country or cause. Thus the consequences of membership may be so extreme as to become the very means by which the members select themselves.

The selection procedures for those who aspire to membership are congruous with the ethics and objectives of the group to be joined. Entry by donation was used by Lloyd George and perhaps others to recruit to the Peerage those who had sufficient money rather than those with merely sufficient blue blood. Though rather sordid it was certainly not unfair, and probably did accurately reflect the ethics and objectives of both parties involved in the transactions. In contrast, discrimination purely on the grounds of prejudice (such as sexual prejudice or racial prejudice) is clearly unfair and greatly devalues both sides.

When membership carries with it professional advantages, access must either completely open to all who would wish to join, or else, if there is a selection procedure, that must be scrupulously fair. Discrimination is a word now distorted to imply "unfair discrimination". But, as long as the standard required is explicitly defined, then a rigorous discriminatory mechanism which is reproducible, is perfectly correct. When the accolade of a professional association brings with it not only the immediate joy of achievement but also security of employment and pecuniary advantage, there is clearly a responsibility on those who set the standards for membership and then administer the selection procedures, to scrutinise those systems very carefully. To examine the examinations in fact.

The Royal Colleges have a long tradition of accepting responsibility for setting standards in medicine. My thesis is that examination to those standards is the proper pre-requisite for all seeking admission to their membership. Trials by ordeal, conquest by trial of arms, hazards of strength and skill would all be highly selective but they do tend to be rather wasteful of potential talent. Examinations must not waste potential talent either.

THE COLLEGE OF PHYSICIANS

Man is a social animal. Physicians, like other men and women, cluster, for example as Colleges of Physicians, into which some aspire to enter as Members. The Colleges of Physicians emerged within the large urban communities of the 16th and 17th centuries, in Dublin as in London and Edinburgh. The function of these Colleges was to regulate the practice of the art of science of Physic.

The traditional structures in Ireland for the care of the sick, through hereditary clan physicians, having been disbanded, medical practice in the City had fallen into a deplorable state. Dublin in the first half of the 17th Century contained under 9,000 inhabitants, (not quite twice the number of staff on the RGH site), but "There appeared to be more persons in Dublin at that time practising medicine than any other art, yet very few of them had the six qualifications which Hipprocates required of a medical doctor".

It was to regulate this state of affairs that in 1692, from a Fraternity of Physicians already founded by John Sterne in 1654 to raise the standards of medicine in

Dublin, by Royal Charter of William and Mary, the Kings and Queens College of Physicians became the official body in Ireland for the regulation of Doctors.

There already was one medical corporation in Dublin for the Barber-Surgeons, which for a time included the Apothecaries and even the periwig makers. The Barbers, Surgeons and Apothecaries were the medical attendants of the poorer classes, whereas the University-educated Physician (who charged a higher fee) called upon the well-to-do. Although Physicians had a very clear perception of the limited abilities of Surgeons and Apothecaries, these worthy adversaries did not always concur. They continued to minister to the poorer classes, became in effect the General Practitioners of their day, and successfully resisted all attempts by the Physicians to neutralise them.

To set out the development of the Irish College merely as a series of dates deprives the observer of the fascination of seeing in a single institution, its evolution occurring in harmony with the social, political and intellectual changes of the time. At the time of its foundation sectarian prejudice and apprehension abounded, lest the Jacobites returned. The total number of Fellows of the College was effectively limited to 14, by requiring them to take oaths and to subscribe to a declaration which included the Oath of Allegiance and declarations denying the mass and trans-substantiation, and abjuring the spiritual supremacy of the Pope. In other words, as David Mitchell points out in his book, all the original 14 Fellows just had to be protestant loyalists. There was a wish to exclude others for various reasons, for example those outside a radius of 7 miles from Dublin, and of course Apothecaries, Barbers and Surgeons. (The byelaws in 1879 still stated "No Fellow of any College of Surgeons shall be admissible to the Fellowship of this College").

But in the course of a visitation to the College the Lord Chief Justice of Ireland gave a judgement reminiscent of that in "The Merchant of Venice". He agreed that the Physicians did have the power to reject, but argued that this was coupled with the obligation to admit, all persons who were qualified, the public having the right to the assistance of such persons. The judgement of determining the skill to practice physic remained entrusted to the College, but they were reminded that in the exercise of this trust they should be fair and not arbitrary, capricious, or biased. The mechanism of selection for admission soon to be evolved was that of the examination.

The very first examination held in the College in Dublin was on the 3 May 1693. The pass rate was 100%, the only candidate, Dr Edward Wheatenhall being successful. It must be remembered that at that time examinations for medical candidates consisted of debate-like defences of proposed theses against the President and Censors of the College who acted as their opponents during the disputation. A question-list of 1698 (below) shows that the examination would not have been any pushover for today's Membership candidates.

1. An nervi aliquid deferunt praeter spiritus animales.
2. An pulmones inflantur quia dilatantur.
3. An secretio bilis sit in hepate tantum.
4. An sanguis nutriat.
5. An dantur paricularia vasa deferentia urinam ad vensicam praeter ureteres.
6. An omne animal generatur ex ova.

Within 25 years the examinations began to lose their medieval characteristics. Recollect that the early university Doctor of Medicine graduated with knowledge only, being left to acquire any practical experience afterwards as best he could. Although the inhibitory influences limiting the number of Fellows were removed in 1761, the modern attitudes of the College of Physicians to medical education had to await the painfully slow emergence of medical practice from a theoretical obsession with symptoms (plus a little basic science) to the full acceptance of the need to teach clinical skills and the physical examination of patients as cornerstones of the modern practice of internal medicine.

Clinical teaching was adopted in Dublin following the system in use in Edinburgh which in turn had been based on the practice of Leiden University. In the 18th century Leiden had become the greatest clinical centre in Europe and her Edinburgh pupils raised their University to similar heights. Dublin's inspiration came directly from Edinburgh. John Cheyne, an Edinburgh graduate, came to Dublin as an army surgeon. By 1880 the examination for Membership of the College of Physicians included clinical as well as theoretical and scientific topics. The golden age of Irish medicine made Dublin a leading teaching centre, with emphasis on bedside clinical teaching and pathology. Clinical teachers who became Presidents of the College include Robert Graves, and William Stokes whose statues today adorn the College with Dominic Corrigan's.

Now for the first time the new category of Membership of the College emerges, in the provisions of the 1878 supplemental Charter. New byelaws regulate that the election of Fellows is in future to be from the Membership of the College only, and the method of selection Members is to be by examinations. The scope of the examination is described in these byelaws, which also require candidates to produce, besides a testimonial as regards their moral character and professional conduct, evidence of having attended courses of practical instruction. Examinations for Membership were scheduled to take place quarterly, the examination fee being 20 guineas and refundable.

Further details of the Membership examination at that time are given in the byelaws of the College dated September 1895. These are very similar to the examinations of the present day. Examination was to be (1) by written papers, (2) clinically, and (3) orally, the duration and content of the various parts of the examinations being remarkably similar to today's. The principle was evolved of having multiple examiners working in pairs assessing each candidate. Clinical examinations were conducted in the metropolitan hospitals in the forenoon of the day following the papers "the candidates being informed of the hospital only a short time before the hour of the Examination". Candidates who passed the examination were required to attend at the College on the Friday following, to subscribe to the Declaration in the presence of the Fellows and to sign the Roll of Members.

Until 1963 the examination remained essentially unchanged since 1895. In 1963 it consisted of two parts, the first part being a written and oral examination in general medical subjects and basic science to the standard of a good pass in Final MB. The second part allowed a choice from a range of subjects: general medicine, or mid-wifery and gynaecology, pathology, or neurology and psychiatry. A paediatric option has been available in recent years. The standard of this second part of the examination was extremely high.

Between 1964 and 1970 discussions between the Royal Colleges of Physicians within the UK regarding a common membership for the UK colleges led to an agreement that the Irish College might share the Part I examination with the UK Colleges. Irish College byelaws were accordingly changed to read "MRCPI Part I shall be a multiple choice question examination set in conjunction with the Royal Colleges of Physicians of Edinburgh, Glasgow and London". The Part II examination for the MRCPI remains a distinct entity.

To qualify for entry to the Irish Part II, candidates must pass Part I MRCPI or be exempt, because they hold a qualification equivalent to a full MRCPI. This exemption is reciprocated by the UK Colleges. The bilateral insistence on a Part II standard for exemption from Part I recognises the independence of the MRCPI and the MRCP UK qualifications. The objective of both the examinations is actually the same, that is to identify doctors who are ready to start higher training.

Byelaws govern the Membership examinations and changes to the byelaws can be cumbersome to effect. There is therefore a useful inertia moderating changes to the College examinations. After all, two hundred years had to pass before the Fellows finally discarded their exclusiveness, and made an examination for medical excellence the only test for entry to their ranks.

At one time it looked as if the whole MRCPI would be subsumed into the UK examination. In 1973 a notice of motion before the Fellows was "that it is in the best interest of Irish medicine that this College have a common Membership examination with the UK Colleges". The merger never took place. Dr Alan Grant, a previous President of the Irish College and an Ulsterman well-known to some members of this audience, opposed the merger on the grounds that "a distinct Irish College would do much to raise and to maintain the standards of medicine in the country". When subsequent figures showed falling numbers taking the Membership examination at the Scottish Colleges contrasting with a threefold increase in the take-up of the Membership in Dublin, the argument collapsed. At a College meeting the original motion was withdrawn and thus "the great controversy ended without a vote, but with a clear majority for the conservative position". And this position has remained ever since until the present day.

PERFORMANCE IN THE MEMBERSHIP EXAMINATIONS

Information on all the current examinations is published in the Examination Regulations, and previous papers are available. Counselling of candidates is encouraged and unsuccessful candidates receive a full account of their performance and sometimes advice from the Director of Examinations. There is no longer any mystery. Permission to present this data on the MRCPI examinations has been freely given by the College, with the full co-operation of the Examinations Office, to whom I am most grateful.

Though some of you will be familiar with the MRCP examinations having sat and I hope passed, others will need some explanation. Part I of the Membership aims to test a physician's factual knowledge. Obviously this examination has to accommodate expansion in medical knowledge and new questions should alert postgraduates to developing areas of medical interest. Yet the standard must remain constant. Because applications from larger and larger numbers of

candidates also posed logistical problems, especially for the organisers of the clinical section of the examination, an MCQ was devised to filter out only those with a good chance of success in Part II. That it has been successful in this objective is shown (Fig 1) by the close correlation between success in Part I and subsequent success in Part II.

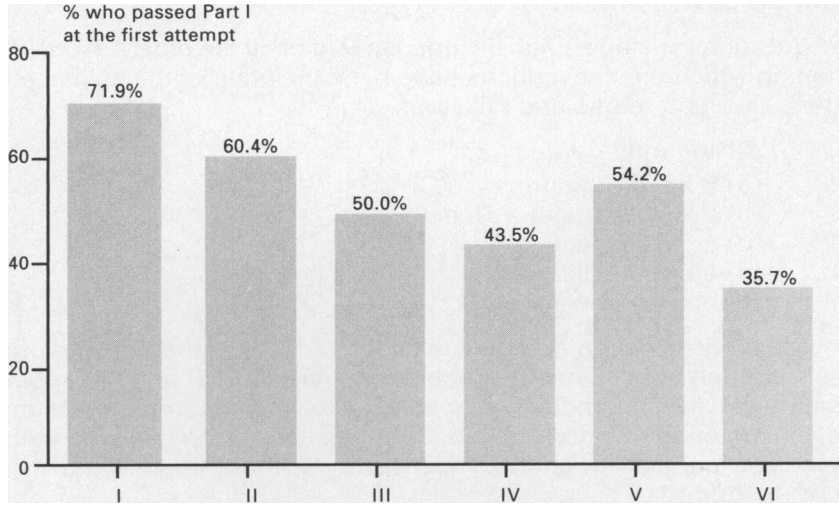

Fig 2 There is a significant (X^2 = 18.9, p = 0.002) correlation between performance in Part I MRCPI and performance of the same candidates in Part II. 375 candidates are grouped according to the number of attempts taken to pass Part II, and for each group the percentage who passed Part I at their first attempt has been calculated.

Properly crafted, an MCQ paper is a reliable test of factual knowledge. There are several types. The MCQ Part I paper asks the candidate to mark for each of five responses to a stem question, whether the answer is true or false. There is a 'don't know' option which scores nil. A minus mark given for an incorrect response appears to inhibit the temptation to guess, which is perhaps an attitude that should be discouraged in doctors. Great care is taken by a Board of Examiners to check that all facts are currently correct. Completed papers are automatically scanned and the candidate's answers are used to calculate not only his performance but also the discriminatory power of each single question.

There are certain problems with MCQ papers. It is possible for a candidate to improve his marks simply by practising MCQ technique. Knowing when to 'play hunches' and timing improve with familiarity. Learning the conventions of the wording employed is also important. Thus a 'characteristic' feature means it is virtually diagnostic, but a 'recognised' feature will be found in the small print. Medicine is a biological science, so 'always' and 'never' anticipate false answers; as 'may' and 'can be' signal a true. The following are illustrative of 'bad' questions:

A King is invariably
(a) Rich
(b) Wise and Good
(c) The Head of State

(d) The Husband of a Queen
(e) Usually found in a Castle

In this question 'invariably', which is the same as 'always', tells us that all the answers are false. Also 'Rich' is too vague, (b) asks a double question, and (e) does not read with the stem. By the way, by convention, 'usually' means more than 50% (of the time in this case).

Each of the questions arising should be independent of all the others. Consider this question, in which the conventions have been included of the absence of capital letters, question marks and full stops.

A King may be
(a) a head of State
(b) the husband of a Queen
(c) a chess piece
(d) all of the above
(e) none of the above

This is a mischievous question designed to 'catch out' rather than to 'find out'. 'May' signals strongly that all answers should be true. But (d) and (e) appear to be mutually exclusive. A candidate may quickly mark (d) as correct, assume (e) is false, and go on to the next question. But, because a King may be at the same time exiled, unmarried, and not necessarily a chess piece the correct answer to (e) is 'true'.

Question setting, like answering, takes time and trouble. To be present at a meeting of the MCQ Board of Examiners is of course an honour and a privilege but also an experience. Each question is reviewed by one designated examiner in front of a whole panel of experts in a way reminiscent of the medieval debate-like defence about which we heard earlier. Their combined sharp minds trim most of the fat off both the question and its appraiser. Besides knowledge, attention to minutiae, and exactitude in language, Part I Board members require an extra talent, which I can only describe as an 'acrostic' mentality.

A computer programme allows the final mark gained to be credited as a pass if it is equal to or greater than the numerical mark which will allow through 35% of those candidates who sat that paper in the UK.

Although Part I of the Irish examination is shared with the UK Colleges, Part II has always been slightly different. Its size and pace are different and it is completed in one week from the time of the first paper until the results are posted at the College the following Friday evening. Like other Part II examinations it includes written, oral and clinical sections, but unlike the UK examinations those who proceed to the clinical section – usually about two thirds – do so on the basis of their combined written and oral marks.

There is criticism of all Part II of the Membership examinations because they are 'elitist', elitism not being currently fashionable in Europe. The pass rate today for the complete exam remains at about 10% overall (compounding the 30% pass rates of both parts of a two part examination). This was the rate years ago when the Colleges were less ashamedly elitist. That the standard has been constant is shown if a homogenous group – the Irish candidates – is studied over the period of ten years between 1983 and 1993 (Fig 2) there being no evidence

of increasing success. In the special case of non-Irish candidates these now perform significantly better than they did 10 years ago, and account for the slightly better performance of the group as a whole over this period. By the way, there is no significant seasonal variation.

The low pass rates are responsible for a number of misconceptions amongst which is that the cases presented and the questions set are unreasonably exotic. But, though the curriculum is nowhere precisely defined, the content of the examination, because it is generated from the combined experiences of the

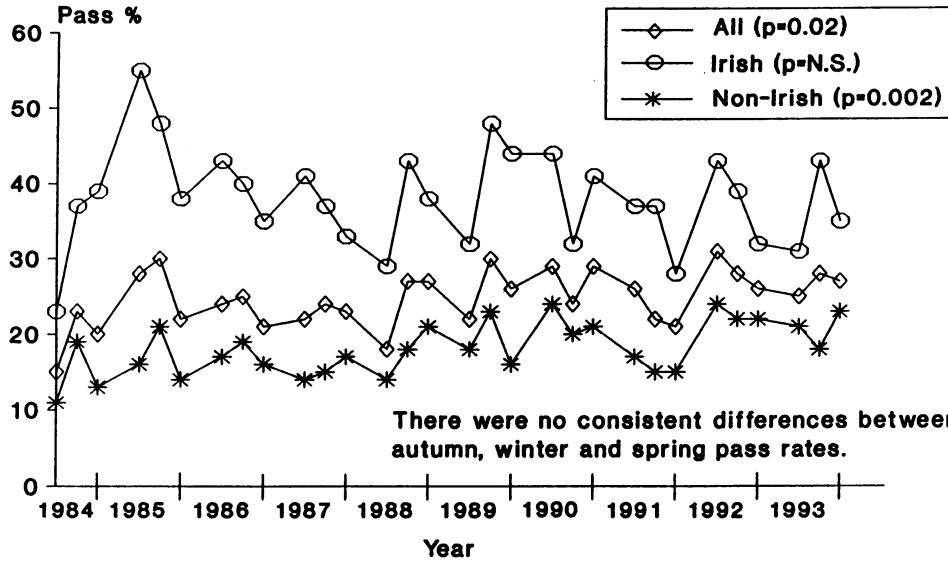

Fig 2 The pass rates (%) for 30 consecutive exams for All candidates, Irish and Non-Irish groups. The rising pass rate between 1984 and 1993 is entirely due to the improving performance of the Non-Irish group.

Panel of Examiners, must reflect the distribution and abilities of specialists as would be found in any general hospital. It is therefore easy to predict and confirm that, for example, cardiological problems will be commonly encountered. (Table).

TABLE

Topics of data interpretation questions MRCPI

	%	
Diseases of heart and cardiovascular system	23	50%
Gastroenterology and hepatology	12	
Renal and electrolyte problems	11	
Clinical pharmacology and toxicology	4	
Endocrinology and metabolism	12	30%
Haematology and coagulation	10	
Respiratory medicine	8	
Neurology	9	20%
Infectious diseases	7	
Others (psychiatry, rheumatology, dermatology, multiple systems)	4	

Another misconception is that the fate of the candidate has been determined by the venomous intervention of one psychopathic examiner. Data is available on the performance of examiners in the oral section, where the encounter is one to one, and is capable of analysis. (Fig 3).

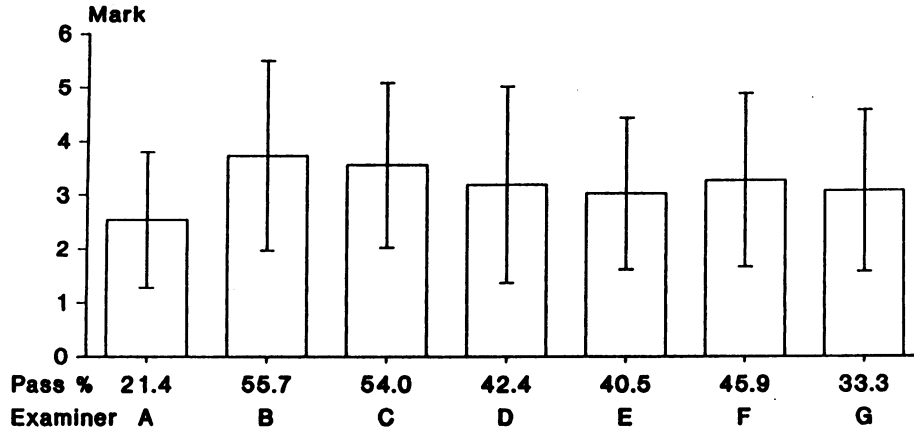

Fig 3 The mean mark and standard deviations for each of seven examiners marking in consecutive MRCPI oral examinations. X^2 for heterogenicity (x^2 = 32.1) shows significant variability among examiners ($p<0.001$). The % of candidates who gained a pass mark or higher is given for each examiner. There was no significant trend of the mean score or range of marks awarded by any examiner to change with length of examining experience.

It is evident that the performance of different examiners differs. This is in spite of the MRCPI oral examination being structured, requiring all examiners to use the same ECGs and x-rays. Variability may occur if examiners look for something more than knowledge. Doctors who succeed must be able to think rapidly and clearly under stress. One approach has been to make examiners aware of their own performance compared to others, in the hope that perhaps this may develop conformity, rather like medical audit is supposed to. But examiners we studied did not appear to change their marking much over time. A better safe-guard for the candidate lies in the fact that no single examiner has been given the power to fail or to pass any individual. In the MRCPI, each candidate will have been assessed by a minimum of ten different examiners from a group which always includes two external, one from the Scottish Colleges and one from London. Further, a Court of Examiners meets each evening regulated by the Director, and the conformity of all the results of all the candidates is scrutinised.

Also marks may be exchanged between the main sections of the examination, so that any candidate, provided always that he has passed the clinical, can make up for shortcomings. The whole examination is rather dominated by the clinical section where high marks can have a powerful influence. But is this the most reliable section? The case material against which the candidates are tested is difficult to control. The importance of the physical examination of patients seems to be an anachronism and yet, would you be prepared to accept the advice of a doctor who couldn't take a history or use a stethoscope or feel the tumour in your abdomen? No such doctor will pass the long and the short cases of the clinical.

There is always concern about those who travel from outside these shores to test themselves against our national perceptions of desirable standards. Can we justify imposing our preconceptions upon their very different needs? The evidence is that the standards required by us of candidates from wherever they originate is indeed of value to them. Candidates come from the middle east, Africa, the Indian sub-continent and the far east as well as some from Europe. And holders of the MRCPI practice medicine successfully in all corners of the globe. That non-Irish candidates perform less well in the MRCPI compared to candidates of Irish origin does not reflect in any way on the mechanisms of the examinations. It is evident that the individuals within the Irish and the non-Irish groups are significantly different. One example is the large difference in the time interval between medical registration and application to sit Part II (Fig 4). Some similar data is available concerning candidates in paediatrics. As it was suggested that their performance in Part I may also have been prejudiced by the proportion of questions drawn from adult medicine, paediatricans have now been offered a special option.

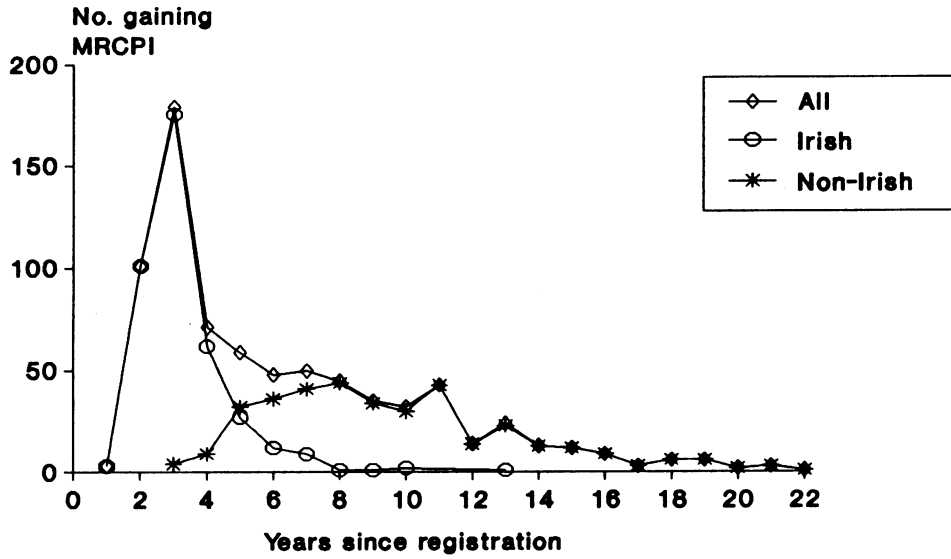

Fig 4 Years between medical registration and success in MRCPI for all candidates, and for Irish and Non-Irish groups. A comparison of mean year shows a highly significant difference ($p<0.0001$) between the groups. Note that the absolute numbers of All and Irish candidates have been scaled down x5.

Adequate preparation is important, and those who lack practical experience are exposed badly in the orals and clinicals. It is very difficult to deceive six examiners who all know the 'tricks of the trade'. Candidates who pass certainly are suitable for specialist training but data is not available to answer 'is anyone excluded by the examination who would have benefited from higher training?' I have no information regarding those who either don't complete all their attempts or who finally fail after six. Some probably do well enough for it is certainly possible to reach the pinnacles of the profession without ever having passed or indeed without ever having sat and failed the MRCP.

In fact most candidates do pass within three years of registration, a figure that could be used to define a reasonable length for core training in medicine. At each attempt a candidate has a reasonable chance of success and for the Irish, that chance of success actually increases with more and more attempts. (Fig 5).

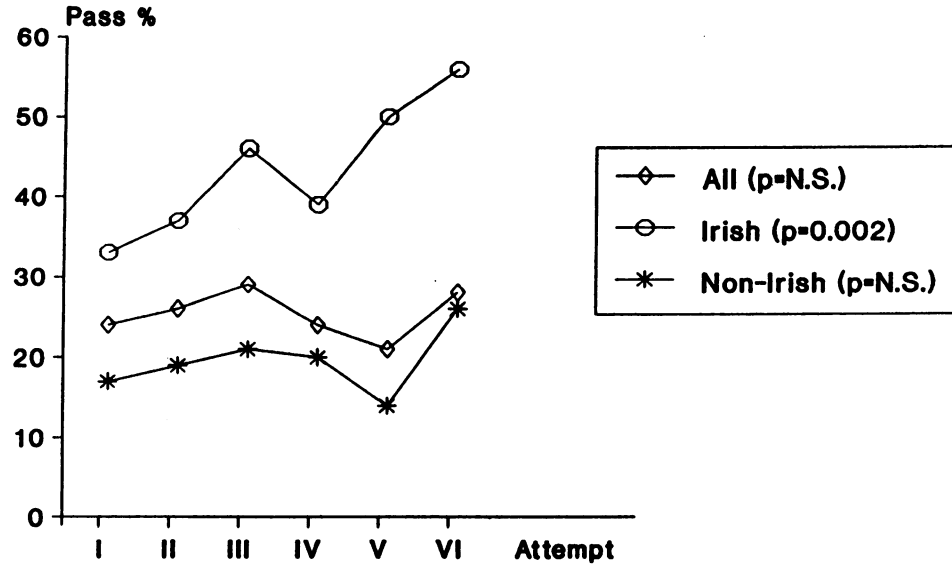

Fig 5 There was no significant difference in the pass rates in Part II for any attempt between first and sixth, save in the case of the Irish. The graphs show % pass rates. X^2 for trend shows significantly better performance by Irish candidates in later attempts.

Candidates who do not prepare properly risk running out of attempts. There is currently an absolute maximum of six attempts allowed at the second part. It has also been a principle that a fixed limit of time should be set between success in Part I and completion of all attempts at Part II. In my own time as Director of Examinations this interval widened until by 1992 it had been extended from five years to seven years. A further amendment allows that additional attempts are possible under special circumstances even after seven years. Thus, though the standard of the examinations has not changed, accessibility to them continues to improve. One of the problems with any examination is that it can only attest to the candidate's ability on the day. But if the examination is a gold standard to be achieved, and if candidates at the 6th attempt have at least as good a chance of reaching it as at the first five, should unlimited access not be considered?

THE FUTURE

What people do with the College's Membership certificate is their own business. Most hang it on the wall. It can be made a milestone in the process of continuing medical education. It has become a gate through which a young doctor has to pass on his way from one level of training to another. The illogicality of an examination, taken towards the end of a period of training in approved posts,

which passes only 10% of the candidates, will have to be justified. Would continuous assessments or some even lower level of achievement such as certification of attendance, be acceptable? Paediatricians have been given a special option, why not other specialties? This was offered in the past by the Edinburgh College, membership of which was available in special subjects. A higher level of membership examination could possibly function as an exit visa from specialist training. Each medical specialty now has its own specialist body, but there is no evidence so far that interactions between these organisations and the Royal Colleges are moving towards developing exit type examinations in medicine. Certification in internal medicine and its specialties seems more likely to develop as a sort of apprenticeship.

More women doctors are seeking to progress as specialists and their particular needs will have to be accommodated. Like general education, medical education will, and should continue at different levels of intensity throughout the whole of medical life. The Colleges have accepted a responsibility for CME and are well placed to deliver if required, judgements on specialist's standards and training.

Fortunately for us all these Colleges have remained totally independent voices speaking only for medicine (surgery, obstetrics, anaesthetics and so on). Their comments are based on professional considerations only. As learned professional associations they are deeply concerned about medicine and health, but in a way that all practising doctors should be. Their opinions and advice may be ignored or usurped by the latest quango, but they are available, and without charge. They represent the views of people who have dedicated themselves to achieve the highest standards of medical practice, people who have sworn an oath to maintain those standards and to maintain Hippocratic principals.

Colleges are not political but they have had to be concerned about the Nation's health, which is now regarded as the domain of the politician. Public statements are issued regularly by the Royal Colleges on health matters. Their recent expressions of very deep concern about the manipulation of a National Health Service on the basis of incomplete data are genuine. When the Colleges question the equality of access to health care for minority racial groups, for the elderly and for the poor, these questions have arisen from their statutory responsibility to maintain standards. They speak from the principles of Hippocrates rather than from a political point of view or Keynesian philosophy. Purchasers and providers may be real enough in economic terms, but the benefit of their insertion into the practice of medicine is still speculative, and can hardly be justified yet, certainly not on the basis of three or four years experience. Their potential to damage medical training and research gives rise to genuine anxiety. As scientists we would have preferred data to dogma. Set against three or four hundred years of the College's responsibility for delivering on medical standards in response to the community's expressed wishes, the 'Purchaser and Provider philosophy' will have to face the challenge of the test of time. But where will the politician be then, to answer? Time is short but the art is long and be assured that medicine as medicine is likely to survive. I would be of the opinion that it is more relevant to the survival of medical excellence that the Colleges should thrive rather than any particular politician or political dogma.

'The College' by the way, is the corporate body of its Fellows and not in fact the building. As Fellows are only capable of election if they are already Members,

and Membership being exclusively or virtually exclusively gained by examination, it is clearly important for the future of 'The College' that high quality examinations are retained as an effective mechanism by which the brightest and best are selected. The Irish College has conducted such examinations for some three hundred years. Though the fees gained may have been an important element in preserving the fabric and financial independence of the organisation, much more important is the fact that the examinations are the means of selecting those most able to be future Fellows of their College. Their vitality and excellence are critical if medical philanthropy is to curb a decision-making machinery at times remote. The voice of a Royal College can command attention just so long as it is an independent voice speaking for medical excellence.

In conclusion may I remind you that the opinions expressed this morning are exclusively my own and unlike "the evil that men do that lives after them", are "best interred with my bones".

THANKS

RCPI — The College Officers; The Examination Office; The Librarian.

RVH — Miss O'Prey, Dr Ian Bruce, Department of Medical Illustration.

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Historical Note:

From Stoneyford, County Antrim to Coleraine, Australia: Samuel Connor, MD

Laurence M Geary

Accepted 7 March 1995

Samuel Connor was born on 17 June 1861, the fourth son of John Connor, a Presbyterian, and prosperous tenant-farmer, from Stoneyford, County Antrim. The latter's brother was a medical practitioner in Newry, County Down and it was he who persuaded his nephew and namesake to adopt medicine as a career. The article is divided into an autobiographical account of Connor's minority, written on 3 May 1882, on board the 'Superb', an emigrant vessel, bound for Melbourne, Australia, and a brief description of Connor's career in the Victorian country town of Coleraine. The former provides a glimpse of the life of the strong farming class in Ulster, as well as an interesting perspective on medical student life and career prospects in Ireland in the last quarter of the nineteenth century, while the latter suggests the possibilities of contemporary practice in the Australian colony of Victoria.[1]

"In looking back over the years of my childhood and youth I can remember events that happened when I was four years old. I have a distinct recollection of my first years at school when I was first introduced to my ABC's. My schoolmaster, Mr Atkinson, was a small, delicate, middle-aged, man, with a short temper and a partiality for flogging on the slightest occasion. We could tell of a morning by looking at the master's face what sort of a day we were going to have. Our lot would have been much more miserable had it not been for his wife, the schoolmistress. She was as unlike her husband as she well could be. She was over the medium height, fat, fair and forty, had a good temper and was kind to the pupils under her charge. She often acted the part of mediator between the angry master and the unfortunate pupil, so if a blessing descends on the peacemakers, blessed is she ! Mr and Mrs Atkinson were assisted in their charge by their daughter, Ella, who acted as monitress (now married to a Joseph Connor and assisting her husband to teach in Stoneyford National School, where her father used to teach)."

"As soon as I was able to make myself useful I was accustomed to assist my father on the farm, outside school hours. I remember the death of my elder brother, John, in his eighth year, I being then six years old (1867). The cause of his death I don't know."

"During the summer and autumn months, when my father was buying or selling off his stock, I was in the habit of attending fairs with him. If he were buying I drove the cattle home and if selling I drove them to the fair and kept them there

Department of the History of Medicine, Royal College of Surgeons in Ireland, The Mercer Library, Mercer Street Lower, Dublin 2, Ireland.

till sold. If the drove was large of course I had help but as a rule I was alone. Practice makes perfect and in time I acquired the reputation of being a firm, able drover. Many a sixpence I have received from my grandfather (Mr McClure) and uncle George Connor for helping with their cattle. But they are both gone long since to that bourne from whence no traveller returns. 'Requescat in Pace'. The principal fairs which I attended were Belfast, Lisburn, Hillsborough, Dromore, Crumlin, Antrim and Oldstone."

"Although this life was very pleasant and I enjoyed perfect health, it had its drawbacks, for example, all kinds of weather had to be faced, sometimes early starts in the morning, and after trudging over dirty roads, standing for hours on stony pavements, possibly in the rain, was not so pleasant. I have a vivid recollection of receiving on one occasion a number of lashes from a horsewhip for deserting my charge in a fair. It happened thus. We had drove of about twenty cows in Hillsborough fair, a couple of servants and myself keeping them in position, I asked my father's permission to leave for a little while to get something to eat (I had a splendid appetite in those days). In my absence the cattle became troublesome and my father had to lend a hand himself. I was surprised on going back to receive the whip around my shoulders and to hear the expression, "take that for going away without leave". Father had forgotten in the excitement that I had asked and obtained leave."

"In the course of time I grew tired of my life at home and asked my father to send me to a good school, my younger brother, George, taking my place in assisting father. On May 1st 1875, I left Stoneyford to attend the Royal Academical Institution, Belfast, the largest and best school in the town. I stopped here for eighteen months, going home as a rule once a week or once a fortnight and enjoying it very much. I was very lazy and spent more of my time over cricket, football, lacrosse etc. than my books. The result was that I left the academy without taking a single prize or making my mark in any way. During this time I suffered two very heavy losses. In March 1876 my grandmother died at a ripe old age and on 25th June of same year my dear mother died after a week's illness (pleurisy the doctors said was the cause). Not long after this when in Newry, my uncle, Dr Samuel Connor, Sr, advised me to go to college at once and prepare for the medical profession. In a weak moment I consented and accordingly left the R. A. Inst. for Queen's College in the same term (Nov. 1st 1876)."

"At that time I was unable to pass the matriculation or entrance examination of the college, as I had no intention of leaving school so soon and had made no preparation for it. So I entered college as a non-matriculated student, a step which I regretted very much afterwards for two reasons, first non-matriculated students cannot compete for prizes and second I was postponing work to a time when I had sufficient to do without it."

"I had the good fortune to meet at college George Thompson, a medical student, to whom I was introduced by our mutual friend, Mr David Cunningham, of whom more anon. During this first winter session, George and I chummed together, that is to say we occupied the same lodgings, read the same books and were constant companions. We attended at college the following lectures, anatomy, physiology, zoology, French and chemistry. In April 1877, after my first session was over my uncle Sam (who has a large drug shop in Newry)

advised that I should go for a year to his shop, to learn the appearance, composition etc. of the different drugs. I went on the 16th of April and stopped till the following March. While in Newry I had to do the most menial work of the shop, measuring oils, paints, manures etc. and acquiring about as much knowledge of drugs as I would have learned in a month at college. In the early part of my stay in Newry, I spent a couple of evenings in the week reading Greek and Latin with the Rev. Mr Adair, preparing for the matriculation examination, but after a short time I grew tired of him and stopped attending his class."

"Then I joined an elocution class conducted by Mr W. Pyper of Belfast which was held once a week and when the class was brought to a close I appeared for the first time on any stage, in a short comedy. On that occasion, I remember being very uncomfortable and was told afterwards that I presented anything but a courageous front, my face changing from white to red and from red to white during the performance. While in Newry I was a member of the Presbyterian Young Men's Christian Association and on one occasion made a short speech in a debate, but I am sorry to say it was not brilliant. I was only home once during the eleven months spent in Newry and that was on the day of my grandfather's funeral (Summer 1877). Although I was treated very kindly by my uncle's family and all Newry friends I was very glad to escape from the place and return to Belfast again, where I renewed my medical studies. My outlook at that time was very gloomy. I had forgotten the greater part of what I had learned in the first session and had two examinations to pass before the next winter session commenced, the matriculation and first university examination. Now any one of these was enough to prepare for in the six months at my disposal, but I made up my mind to try them both and have them over me. So I took a couple of summer lectures at the college (botany and experimental physics), at the same time reading one hour each day with a grinder, Rev. W. O'Neil."

"Time passed quickly, the examinations were drawing nigh and I very imperfectly prepared. The first university examination came first (Sept. 1878). It was held in Exhibition Palace, Dublin and lasted about a week. Imagine my delight one morning to receive at my lodging in Belfast a telegram to the effect that I had passed. Now I sat down to read for the matriculation examination which was to follow in about a fortnight (October) at Queen's College, Belfast. I was fortunate also in passing it."

"I was now a matriculated student of the college, entering on my second year and at length on an equal footing with men of my year. I attended the following lectures, anatomy, physiology and materia medica at the college and commenced to walk the wards of the Belfast Royal Hospital. It was at the beginning of this session that I got introduced to Augustine Henry, MA, a distinguished student of Queen's College Galway, who had come to Belfast to study medicine and read for the best prize our college could give, the Dunville Studentship, value £145, which he afterwards gained. I enjoyed the pleasure of Mr Henry's society during the greater part of that winter as we lodged together (my old chum, George Thompson, did not stop in lodgings that year but lived with Mr D. Cunningham), Mr Henry was the best read man I met in my whole college course and was of great assistance to me in explaining any difficult point that cropped up. At the end of the session (April 1879) I obtained a couple of prizes, that is fourth place in anatomy and physiology, fifth place in materia medica. In the summer session (May to July 1879) I attended one class at the

college, practical chemistry, and the Royal Hospital at the same time, reading steadily for the second university examination, which came off in the following September. I took a prize in practical chemistry at the end of the course and then retired to the country for a little, to stay with brother William who was very ill. He died on August 30th 1879, aged 25 years, after an illness of about 5 years (phthisis). As the time for the examination came round, Mr Henry and I repaired to Dublin to have a final cram before it came off. Mr Henry got first class honours but I was well satisfied with simple pass. Another stumbling block was removed from my path and I came home rejoicing."

"On November 1st 1879 I returned to Belfast and commenced my third year. This session I stopped again with Mr Henry but in different lodgings, and attended lectures on anatomy, physiology and surgery, also the Royal Hospital. I did not read so hard as formerly because I had no examination for a considerable time. As the fourth and final examination is the most difficult of the series, more time is given for preparation and no one, however clever, is allowed to enter for it before the end of fourth winter session, thus giving two years between the last two examinations."

"At the end of this session (April 1881) I obtained a prize in surgery. In summer session of 1881, I attended two classes, midwifery and medical jurisprudence, in both of which I secured a prize. When the college was closed I took a trip to London to see my brother Joseph, and the first city in the world. When there I got impressed with the immensity of the city, saw a number of its sights, such as museums, art galleries, exhibition palaces, theatres etc. I went to the House of Commons and sat up all night, from 11 pm on 26th inst. till 7 am on 27th August, listening to an Irish debate. After stopping a week in London I turned my face once more towards the home of my fathers and first gem of the sea, Auld Erin. In the month of October following I paid a short visit to my college friend, George Thompson at Croagh, County Tyrone."

"On November 1st 1880 I commenced my fourth and last year at Queen's College, attended lectures on practice of medicine and demonstrations of anatomy. I also attended the Royal Hospital and the Belfast Hospital for Sick Children. This winter I stopped with George Thompson (Mr Henry being in London) and read steadily through the whole session as the final examination was drawing near. At the end of this session (April 1881), I obtained first prize in the class of practice of medicine and immediately after went to Newry to help my uncle Sam for a fortnight, as his principal assistant was ill. Returning again to Belfast, George Thompson and I agreed to spend the summer months in Holywood, a seaside place, four miles from Belfast, going by train every morning to town to attend hospitals. Here I spent some of the pleasantest days I ever had in my life. We spent at least three hours a day taking a dip in the briny and strolling about through beautiful lanes enjoying the beauties of nature. During the rest of the day we read hard. The only event which occurred to sadden my stay here was the death of my dear and only sister, Eliza, which took place on May 27th 1881 after a long illness (phthisis), aged about sixteen years. Getting tired at length of this peaceful existence in Holywood, George and I removed our abode to dear dirty Dublin on August 1st. From this till the examination came off (Sept. and Oct.) we attended Dr Stoker's class and met every day a large number of students preparing for the same ordeal as ourselves. The terrible examination at length commenced. Then followed three

weeks of great mental strain and anxiety, such as I never wish to experience again. However our trouble was not for nought. George Thompson and I both satisfied the examiners, eleven in all, and obtained the degree of MD or Doctor of Medicine, becoming involved in the twinkling of an eye from the chrysalis state of studentship into the full-blown butterfly yclept 'Doctor'. George received in addition the diplomas of MCh (Master of Surgery) and LM (Licentiate in Midwifery). I got MD and LM only. Dr Thompson and I came back with flying colours. Here we parted for a time, he going home to Croagh, I to Stoneyford. A few days after reaching home I had occasion to go to Queen's College, Belfast, to return some books which I had borrowed from the library, when I saw in the Hall a notice from one of the professors (Dr Reid) offering a fully qualified man the post of assistant to a friend of his in the country. I called upon Dr Reid and obtained a letter of introduction to his friend, Dr McBride of Gilford, County Down. I went, was accepted and at once commenced duty in Gilford. Dr McBride had a very large practice, so there was plenty of work for me to do."

"I liked Gilford fairly well. My expenses were few and I experienced for the first time the pleasure of receiving money earned by my own industry. The doctor's family consisted of one son (a medical man and an invalid), an only daughter, a distant relative, Miss Mitchell and four servants, my favourite being Miss Mitchell, a very clever little girl of twelve years. On March 3rd 1882, I went to Croagh to pay Dr Thompson a short visit. While there I received a letter from brother Joseph, offering me the post of surgeon to 'Superb', bound from London to Melbourne and sailing on the 10th inst. I telegraphed, accepting the offer, and returned to Gilford to tell Dr McBride and pack up my property. On March 7th, I left Gilford, after a sojourn of four months, reached home about mid-day, stopped a few hours and then set out for London via Belfast, Fleetwood and Birmingham. I stopped one night in Birmingham in Queen's Hotel, saw brother Joseph who is now living in that town and who came to London and Gravesend to see me off."

Connor did not disclose publicly his reasons for migrating to Australia. Members of his family had already settled there, among them his uncle, Joseph H. Connor, who represented Geelong in the Legislative Assembly of Victoria. He may have accepted the position of ship's surgeon to gain professional experience. He may simply have wished to travel. Whatever his motivation and intention, Connor was destined to spend the remainder of his working life in the antipodes. The 'Superb' docked in Melbourne on Sunday 11 June 1882, after being at sea for ninety-three days, and Samuel lodged with his uncle's family in Geelong. On the day he celebrated his twenty-first birthday, less than a week after his arrival in the colony, Connor heard that Dr Foster of Colac wanted an assistant, at a salary of £150 per annum. He was offered and accepted the position but, on the advice of his friend, Dr Warren of Richmond, refused to sign an undertaking that he would not practice within a twenty-five mile radius of Colac for a period of ten years following the completion of his contract. Instead, he applied for a junior hospital position in Sydney and also met a representative of the people of Coleraine, in the Western District of Victoria, who were in urgent need of a doctor and who were prepared to provide him with certain financial guarantees. Connor was more attracted to Sydney and decided to go there to canvas personally. He called on Presbyterian ministers, medical practitioners and businessmen but, after about ten days, realised that it was useless to

proceed any further, 'as so many people had their fingers in the pie'. Instead he returned to Victoria and accepted the Coleraine offer on being informed that it was still open.[1]

Thirty-eight residents of the town and neighbourhood guaranteed Connor an income of £400 if he practised there for twelve months. If he left before that time he was subject to a penalty of £50. If he wished to leave after the contracted period he was obliged to give one month's written notice. Connor was to adopt the 'usual scale' of fees and to keep proper accounts, which were to be audited after six months and on termination of the agreement.[2]

With the exception of an eleven months' sojourn in Geelong, Connor practised in Coleraine for the remainder of his life. Paid and honorary appointments rapidly came his way. He became a Medical Officer of Health, public vaccinator and analyst. He was gazetted surgeon to the militia, acted as surgeon to the Oddfellows' Lodge and to the Sons of Temperance and was elected honorary surgeon to Hamilton Hospital. Such a career pattern was fairly typical of the majority of Australian country doctors, hospital appointments in particular being enormously significant in establishing a successful practice. Connor's earnings over his first ten years of practice consistently outstripped the guarantee he had been given when he came to Coleraine. For the eight years 1885-1892 his average annual earnings were £723, and for the five years 1888-1892 they averaged £826. Ludwig Bruck, the Melbourne-based medical publisher and bookseller, estimated that in the early 1890s about ninety per cent of Australasian medical practitioners earned between £350 and £1200 a year, with the remainder grossing a maximum of £6000, and that the average for all doctors was probably between £700 and £800. Bruck argued that such an income was not inordinate and was necessary to compensate for higher rents and wages in the colonies and for the loss of social and other advantages that were readily enjoyed 'in the more civilised regions of Europe and America'.[3] In monetary terms, therefore, Connor's practice was an 'average' one. However, he was probably better circumstanced than most country doctors, as legacies from Ireland and returns on investments augmented his professional earnings substantially. Connor filled a number of social positions in his adopted town and this again reflected the generally high esteem in which doctors were held in nineteenth century Australia. He was a justice of the peace and was closely involved with the Presbyterian Church and Sunday school, as well as presiding over several educational, social and welfare organisations. He died in Coleraine in September 1927.[4]

This article is largely based on the private papers of Samuel Connor which are in the possession of Merran Samuel, Armdale, Victoria, Australia. I would like to thank her for allowing me to examine and use her grandfather's papers.

ACKNOWLEDGEMENTS

I would like to acknowledge my indebtedness to the Wellcome Trust, whose generous financial support made possible the research on which this article is based.

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FURTHER NOTES ON DOCTORS MENTIONED

(kindly supplied by Professor R S J Clarke, Honorary Archivist, Royal Victoria Hospital, Belfast)

1. *Dr Samuel Connor* – general practitioner, of 39 Hill Street, Newry, Co. Down; LM Belfast Lying-in Hospital 1857; LRCS (Edinburgh) and LM 1858; LAH (Dublin) 1867.
2. *Dr George Matthew Thompson* – general practitioner, was evidently from Croagh (near Castlederg), Co. Tyrone, but became MOH for Bellaghy, Co. Londonderry where he was by 1882; MD, MCh, LM (RUI) 1881; Certificate of the Medico – Psychological Association 1887; DPH (Cambridge) 1889.
3. *Dr Augustine Henry* – Born near Portglenone, Co. Antrim, in1857. There is no reference to an Augustine Henry in the Medical Registers of the 19th century. This is because he left Belfast in 1878 and went to China as a doctor in the Imperial Maritime Customs, under Sir Robert Hart of Portadown. He became very interested in botany and corresponded extensively with the Royal Botanic Gardens, Kew. This led to his international acknowledgement as a plant collector. After the Boxer rising in 1900 he returned to Europe and made a second reputation with the classic book "The Trees of Great Britain and Ireland". He helped to found the school of forestry at Cambridge and later became Professor of Forestry in Dublin.
4. *Professor Seaton Reid* – (1811-1896); LRCS (Edinburgh) 1832; MD (Edinburgh) 1833; Consulting Physician at the Belfast General Hospital 1850 – 95; Professor of Materia Medica, QUB, 1857-90.
5. *Dr Henry McBride* – general practitioner, of Gilford, Co. Down. MCh (Glasgow) 1840.
6. *Sir William Thornley Stoker* – (1845-1912), of 16 Harcourt Street and 8 Ely Place, Dublin, Consulting Surgeon at the Richmond Hospital, Dublin; Professor of Anatomy, RCSI, 1876-89 and President, RCSI, 1894-96. He was a brother of Bram Stoker, author of *'Dracula'* and is immortalised in Gogarty's *'As I Was Going Down Sackville Street'*.

The Ulster Medical Journal, Volume 64, No. 1, pp. 92 - 94, April 1995.

Case Report:

Crohn's disease of the labia minora

A McKinney, J A Wallace, J M Alderdice

Accepted 24 January 1995

Cutaneous involvement of the vulva is a rare complication of Crohn's disease. It most commonly presents as erythema and oedema leading to ulcer formation.[1] However, between 1966 and 1993 only 25 cases have been reported in the English literature. We describe a further case of Crohn's disease with involvement of the vulva presenting with enlargement of the labia minora and recurrent ulceration of the mons pubis.

CASE REPORT: A 34 year old woman was referred to the gynaecological outpatient clinic with repeated episodes of painful blistering of the skin over the mons pubis, and a six week history of bilateral, progressive swelling of the labia minora. In 1981 she had developed inflammatory bowel disease which was diagnosed as Crohn's disease in 1987. Subsequently, she developed anal strictures and proctitis. In 1991 the terminal ileum, caecum and proximal ascending colon were resected because of the condition.

In 1991 she developed, for the first time, a genital rash diagnosed as hidradenitis suppurativa of the mons pubis. She was prescribed metronidazole 400 mg three times daily and cefuroxime 500 mg twice daily with success. In 1993 vesicular lesions again developed on the mons pubis. On examination both labia minora were found to be hypertrophied with lesions resembling large condylomata arising from their free edges. On the right these measured approximately 2 x 1 cm and on the left 4 x 1.5 cm. The labia majora were unaffected, and anal skin tags were also noted, but otherwise pelvic examination was normal. The vesicular lesions were initially considered to be herpetic and, were treated with acyclovir 200 mg five times daily for five days without response. Four weeks later, under general anaesthetic, biopsies were taken from the mons pubis and the hypertrophied left labium minus was excised. Histopathological examination of the skin lesions showed a non specific inflammatory response. The hypertrophied labium minus contained numerous granulomata composed mostly of multinucleated giant cells and lymphocytes with scanty epitheloid cells. The granulomata were discrete and showed no central necrosis. (Figure) These findings are in keeping with a diagnosis of Crohn's disease of the labia minora. It was not possible absolutely to confirm the presence of Crohn's disease of the mons pubis, and these lesions subsequently resolved without treatment.

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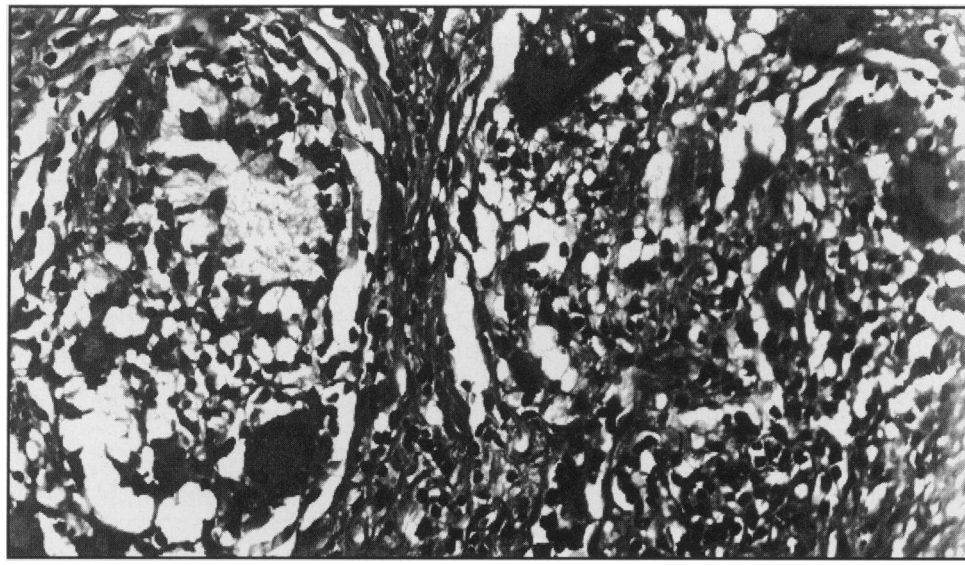

Fig. Two discrete giant cell granulomata. Haematoxylin and Eosin.

DISCUSSION

Two other cases of Crohn's disease of the vulva have been reported from Northern Ireland.[2] Dermatological manifestations of this condition are, by contrast, relatively common with a reported incidence of 22-44%.[3,4] They are more common with colonic involvement,[5] and include cutaneous ulceration, skin abscesses, erythema nodosum and pyoderma gangrenosum.[6] Crohn's disease of the genital region may occur either in continuity with, or in isolation from the gastrointestinal system. Of the two previously reported cases from Northern Ireland, one presented with vulval ulcerations whilst the other presented with extensive granulomatous involvement of the vulva and buttocks.[2]

This case was initially misdiagnosed and treated as hidradenitis suppurativa. It is likely that the associated blistering and ulceration of the mons pubis were in fact due to Crohn's disease. However, it was only when the labial biopsies were examined histologically that the diagnosis became clear. The macroscopic differential diagnoses of vulval Crohn's disease include condylomata acuminata or lata,[7] and sarcoidosis.[8] Microscopically, granulomatous inflammation may be due to tuberculosis, lymphogranuloma venerum, sarcoidosis and fungal or pyogenic organisms.

In considering the diagnosis of vulval lesions, especially with concurrent inflammatory bowel disease, gynaecologists should be aware of the possibility of extraintestinal manifestations of Crohn's disease. In this case, the diagnosis was facilitated by the long history of the disease, ano-rectal involvement, and the histological finding of multiple non-caseating granulomata. Extraintestinal manifestations may precede the onset of intestinal disease by as much as 18 years.[9]

We acknowledge the help of Dr Neil McClure, Department of Obstetrics and Gynaecology, the Queen's University of Belfast, in the preparation of this manuscript.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 95 - 97, April 1995.

Case Report

Crohn's ileitis and salpingo-oophoritis

D C Allen, C H Calvert

Accepted 24 January 1995

Genitourinary Crohn's disease may precede or follow intestinal involvement and can mimic clinically and pathologically various conditions of the abdominal pelvis.[1] Involvement of the fallopian tube and ovary is relatively rare.[2] We report such a case and discuss various ways in which Crohn's disease manifests itself in the female genitourinary tract.

CASE REPORT

A 58 year old woman presented with lower abdominal pain and diarrhoea leading to a right hemicolectomy for Crohn's disease. She remained asymptomatic for 23 years until recurrence of disease necessitated resection of 17 cm of ileum. Five years later she developed multiple short Crohn's strictures with fistulae and abscesses into the pelvis. Two areas of ileum measuring 10 cm and 29 cm were excised. One year later she re-presented with lower abdominal pain and subacute obstruction. Treatment with several courses of steroids and then azathioprine was unsuccessful and subsequent investigation showed a short area of Crohn's ileitis with two strictures. Stricturoplasty was performed and a further segment of ileum adherent to an inflammatory mass surrounding the right ovary was excised. Post-operatively she is well.

Pathological examination showed a 5 cm length of ileum, strictured at its centre and with histological evidence of deep fissuring ulceration, transmural chronic active inflammation and non-caseating epithelioid and giant cell granulomas typical of Crohn's disease. Milder but similar inflammatory changes were also present at the ileal resection limits. The tubo-ovarian mass weighed 48 grams and measured 5 x 5 x 3 cm (Figure 1). Its cut surface was pale with irregular areas of necrosis. Histology showed florid necrotising, suppurative and non-suppurative granulomatous salpingo-oophoritis. The ovarian cortex and medulla had multiple acute abscesses and occasional fragments of vegetable material due to fistulation from the adherent bowel. Between these areas and also in the adjacent fallopian tube were many granulomas identical to those seen in Crohn's ileitis (Figure 2). Stains for actinomyces, fungus and tubercle were negative and there was no malignancy. A chest radiograph was normal.

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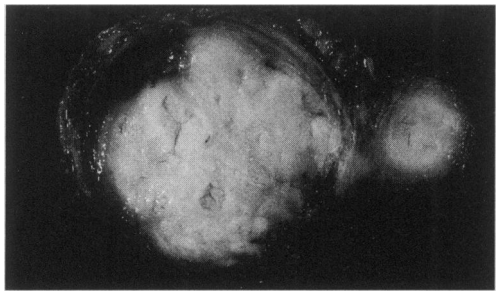

Fig. 1 Right tubo-ovarian mass due to involvement by Crohn's disease.

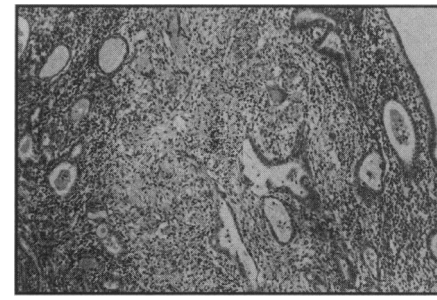

Fig. 2 Crohn's salpingitis. The mucosa is inflamed and contains non-caseating epithelioid and giant cell granulomas.

DISCUSSION

Crohn's disease may show a wide range of intestinal and extra-intestinal manifestations with the latter either preceding, arising concurrently or following gut involvement. In a series of 103 women with Crohn's disease Donaldson[1] noted complications such as abscesses, fistulae, fissures, ulcers and infections involving not only internal pelvic organs but also the vulvovagina, perineum, labia, rectovaginal septum, rectum and anus; sometimes these occurred several months before bowel disease was evident but more frequently within one year of bowel resection. The propensity for ulceration, fistula and abscess formation lends itself to Crohn's disease masquerading clinically as a number of pelvic abnormalities such as appendicitis, pelvic and tubo-ovarian abscess, endometriosis or even malignancy.[1, 2] Donaldson described twelve patients with internal fistulae, five of which were between the affected bowel segment and bladder, vagina, uterus and pelvic adnexae. He also found a significant degree of subfertility and slight increase in spontaneous abortion. Four other publications have detailed pelvic adnexal Crohn's disease.[3-6] All were females in the twenty to thirty year age group who presented with lower abdominal pain for periods of up to one year. In three cases[3-5] the main operative findings were those of Crohn's ileitis and appendicitis involving the right ovary and fallopian tube. As in our case, Honoré [5] noted fistula formation with necrotising, suppurative and granulomatous salpingo-oophoritis. Goldberg[6] described presenting complaints of haematuria at menstruation, faecaluria and pneumaturia as well as abdominal pain caused by sigmoid Crohn's colitis, a left colo-oophorovesicular fistula and salpingitis.

Surgical management was aimed, as far as was feasible, at resection of diseased bowel segments, fistulae and adherent adnexae. In one case [4] there was subsequent colonic, ileal and gingival disease five years post-operatively.

Right adnexal involvement is commoner due to adjacent terminal ileitis and presents with appendicitis-like symptoms. Also, the underlying abnormality can be primary appendiceal disease [3] which is usually an isolated finding but may pre-empt more extensive gut involvement.[7] Left adnexal Crohn's disease was noted due to proximity of a diseased sigmoid segment,[6] and presenting features can mimic diverticular disease or malignancy both on clinical examination and at laparotomy. Even in the pathology laboratory discrimination between an inflammatory and malignant stricture on gross inspection can at

times be difficult and histology is required. Other causes of granulomatous visceral inflammation have to be excluded microscopically (tuberculosis, actinomycosis or fungal infection) and clinically (culture, chest X-ray, tuberculin test). Our case shows the unusual combination of both non-caseating granulomas and suppurative granulomatous inflammation in the right ovary; the former is due to direct involvement by Crohn's disease and the latter fistulisation from the adherent bowel with spillage of some intestinal vegetable debris.[5] Clinicians should be aware of Crohn's disease involving the external and internal genitalia mimicking other inflammatory or neoplastic conditions.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 98 – 100, April 1995.

Case Report

Bilateral subdural collections invisible on a CT brain scan

P K Ellis, M Reilly, K E Bell

Accepted 28 February 1995

We describe a patient who presented with headaches and vomiting. A computerised tomogram (CT) of brain failed to demonstrate bilateral subdural collections subsequently shown on magnetic resonance imaging (MRI). This case illustrates that an essentially normal CT scan does not always exclude significant intracranial pathology.

CASE REPORT

A 44 year old female presented with a four month history of headaches and vomiting. No abnormality was detected on neurological examination and routine investigations were normal. A CT scan of brain was performed before and after intravenous contrast. No focal abnormality was demonstrated but there was poor visualisation of the third ventricle and basal cisterns (fig 1). In particular the left ambient cistern was completely obscured a sign suggestive of supratentorial pathology. In view of these findings the possibility of a low grade infiltrating lesion such as a glioma within the basal ganglia was considered, and the patient was referred for magnetic resonance imaging. Axial T2-weighted MRI scans demonstrated the presence of significant chronic bilateral subdural collections which were invisible on the axial CT scan (fig 2a & b). Sagittal T1-weighted images showed tonsillar herniation below the level of the foramen

Fig. 1 Axial CT scan showing compression of the third ventricle and obliteration of the left ambient cistern. Arrowhead shows position of right ambient cistern which is also compressed.

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magnum without evidence of compression of the brainstem or fourth ventricle. The patient was transferred to the neurosurgical unit where bilateral burr-hole evacuation of about 30 ml of straw coloured fluid was performed with immediate relief of symptoms. The headache recurred after several days and a foramen magnum decompression was then carried out with good result.

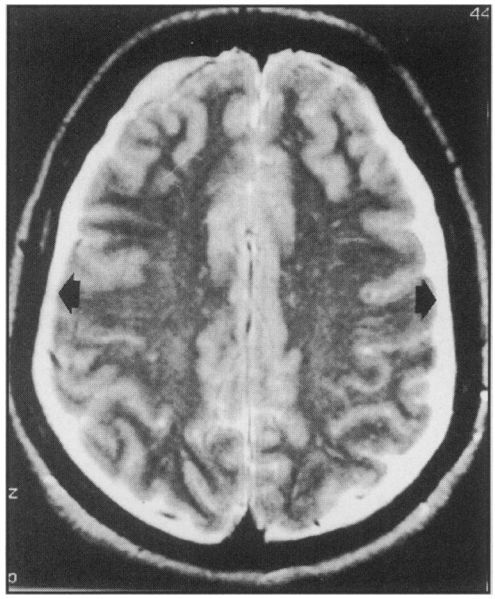

Fig. 2(a) T2-weighted axial MR scan showing bilateral hyperintensity in the subdural spaces suggesting subdural collections (arrowheads).

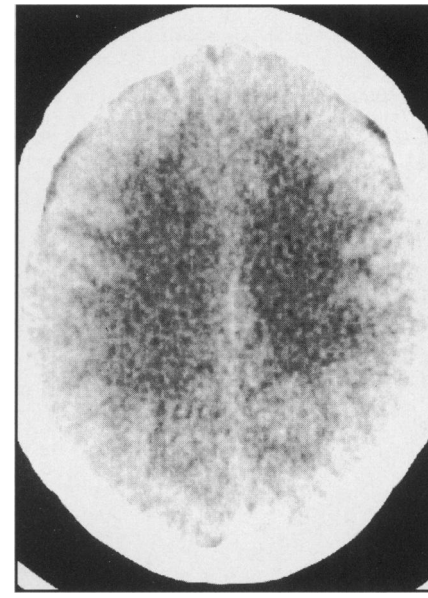

Fig. 2(b) Axial CT scan (level equivalent to Figure 2(a)) showing no visible abnormality.

DISCUSSION

A subdural fluid collection invisible on CT scan has been described previously.[1] Orrison et al[2] recently reported in a series of 107 patients the increased sensitivity of magnetic resonance in comparison to CT in the detection of subdural haematomas, extradural haematomas and contusions. In a series of 21 boxers reported by Jordan and Zimmerman,[3] on which both CT and MRI scans were performed, one subdural haematoma detected on magnetic resonance imaging, was not visualised on CT.

The appearance on the T2-weighted MRI scan of a hyperintense signal in the subdural space is consistent with a chronic fluid collection. Similar appearances can be seen with an acute haematoma in the presence of severe anaemia or if there is significant mixture with cerebrospinal fluid.[4] The long history in our patient suggested that a chronic collection was more likely.

This case is an example of significant intracranial pathology which was invisible on CT scan. If there is strong clinical suspicion but an inconclusive CT scan, it would appear prudent to proceed with MRI.

We thank Dr A L T Blair and Mr W J Gray who referred this case.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 101 – 104, April 1995.

Case Report

The radiological investigation of neurosarcoidosis

P K Ellis, K E Bell

Accepted 21 February 1995

Sarcoidosis is a disseminated disease of uncertain aetiology which causes neurological symptoms in 5% of cases, but more than 10% are found to have neurological involvement at autopsy. The diagnosis of neurosarcoidosis may be difficult if there are no extracerebral manifestations of the disease, particularly in view of the non-specific nature of many of the investigations and Magnetic resonance imaging has made an important advance. We report three recent cases.

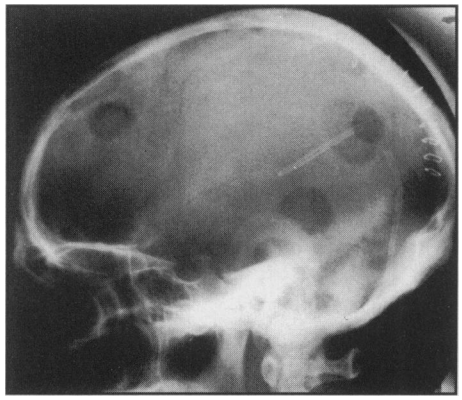

Fig. 1A – Lateral Skull X-Ray
Multiple lytic deposits in the skull vault. Note the presence of a ventricuar shunt.

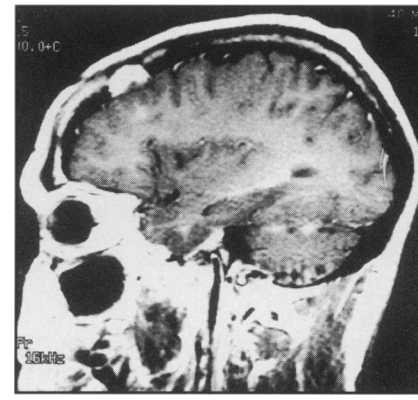

Figure 1B – Sagittal T1-weighted MR image with gadolinium enhancement
Enhancing nodule of soft tissue extending from the meninges into the left frontal bone.

CASE 1

A 40 year old man presented with a short history of headaches and drowsiness. Apart from bilateral papilloedema examination was normal. Routine haematological investigations were normal. Computerised tomography (CT) (not shown) revealed hydrocephalus involving all ventricles, and multiple lytic lesions were noted in the skull vault (Fig lA). A shunt was inserted and CT-guided biopsy of a skull lesion performed. Histological examination showed a

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granulomatous process suggestive of sarcoidosis. Magnetic resonance imaging (MRI) of the brain (Fig 1B) showed multiple focal areas of enhancing soft tissue within the diploic space on the T1-weighted images with gadolinium enhancement. There was meningeal enhancement in the inter-hemispheric fissure anterior to the third ventricle and over the superior aspect of the left temporal lobe. These appearances were consistent with the pathological diagnosis.

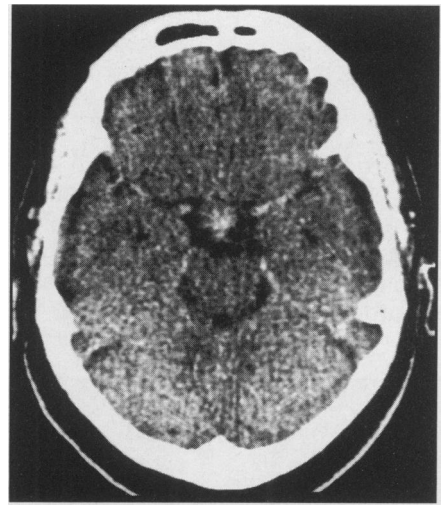

Figure 2 – Axial CT scan of brain
Nodule of enhancing soft tissue above the pituitary fossa, lying in the region of the suprasellar cistern and partially effacing the floor of the third ventricle.

CASE 2

A 53 year old man with a ten year history of sarcoidosis previously involving skin, lungs, nasal space, lacrimal glands and left frontal sinus presented with loss of body hair, pallor, fatigue, myalgia and a thirst. He had required steroid and methotrexate therapy for long periods during the course of his illness. On examination visual fields were full and no muscular weakness or neurological deficit was detected. Serum angiotensin conventing enzyme levels were normal. Hypopituitarism and hypogonadism requiring hormone replacement were found.

A CT scan with intravenous contrast enhancement showed the pituitary fossa to be normal, (Fig 2). There was a nodule of enhancing soft tissue on the pituitary stalk, extending superiorly into the suprasellar cistern and the floor of the third ventricle. No other abnormality was found.

MRI scan of the brain was then performed. T1-weighted images with gadolinium enhancement confirmed the presence of a focal, nodular soft tissue mass of high signal adjacent to the pituitary stalk and optic chiasm extending to the floor of the third ventricle. There was no leptomeningeal enhancement. Although the appearances are not entirely specific, in view of the history a diagnosis of neurosarcoidosis was made.

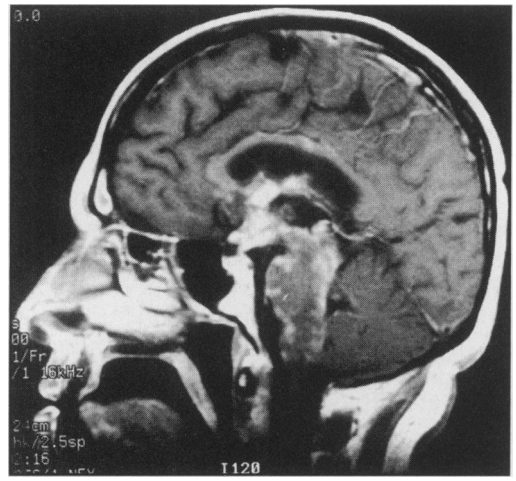

Figure 3 – Sagittal T1-weighted MR image with gadolinium enhancement
Extensive nodular meningeal enhancement from the upper cervical cord to the suprasellar cistern.

CASE 3

A 47 year old woman presented with a history of increasing weakness of her left leg, urinary frequency and incontinence. Pulmonary sarcoidosis had been diagnosed twenty years previously. On examination she had a spastic paraparesis. No other neurological abnormality was detected and haematological tests were unhelpful.

Myelography was normal. MRI scan of the brain demonstrated extensive nodular meningeal enhancement from the upper cervical cord to the suprasellar cistern on the T1-weighted images with gadolinium (Fig 3). There were multiple subependymal nodules throughout the ventricular system, including the fourth ventricle and the septum pellucidum. Soft tissue enhancement was seen in the suprasellar cistern extending around the anterior aspect of the third ventricle and into the inferior part of the right frontal lobe. On the T2-weighted images there was patchy high signal in the pons, lower mid-brain and in the periventricular white matter.

DISCUSSION

The typical presentation of neurosarcoidosis is with cranial nerve palsies, particularly facial, but others include hypopituitarism and paraparesis. Less common presentations include amnesic syndrome,[1] intractable hiccoughs,[2] seizures,[3] psychosis,[4] and acute stroke.[5] This wide range of neurological manifestations is reflected in the many neuroradiological signs.

The most commonly reported radiological finding in neurosarcoidosis is hydrocephalus, as in case I. This is usually the result of fourth ventricular outflow obstruction or of reduced resorption of cerebro-spinal fluid. Meningeal involvement is usually in the form of plaques or nodules, showing as focal or diffuse thickening with contrast enhancement. This finding is rather nonspecific

and is also seen with meningeal metastases and infection. Parenchymal disease is usually isodense or hypodense on CT, and may demonstrate contrast enhancement.[6] Magnetic resonance imaging is superior to computerised tomography, however, especially for imaging the hypothalamic region, the periventricular white matter [7] and for its increased sensitivity to meningeal disease.

Magnetic resonance imaging with gadolinium enhancement is now recognised as the most sensitive imaging investigation for neurosarcoidosis. In a series of 20 patients with neurosarcoidosis, 17 had an abnormal MRI, but only three of these were detected on unenhanced T1-weighted scans confirming the importance of using intravenous gadolinium.[7] The MRI appearances reflect the pathological process of granulomatous dural invasion with plaques, focal masses and a leptomeningitis with parenchymal infiltration along the perivascular spaces of Virchow-Robin.[8] Inflammation of the Virchow-Robin spaces can develop into granulomatous masses associated with oedema (seen optimally on T2-weighted images) due to disruption of the blood/brain barrier, this process occurs most commonly in the basal areas of the brain. The most common site of involvement is the leptomeninges, but others include hypothalamus, periventricular white matter, optic chiasm and the pituitary gland. Gadolinium alters local magnetic environments to change signal intensity in tissues where it accumulates. It does not cross the intact blood-brain barrier to any great extent and therefore a normal scan can result if insufficient disease is present or if there is primarily extracranial involvement of the cranial nerves.

The appearance of leptomeningeal enhancement on MRI can be mimicked by bacterial and fungal infections, metastatic infiltration and leukaemia but has become the imaging technique of first choice where neurosarcoidosis is clinically suspected.

ACKNOWLEDGEMENTS

The authors wish to thank Dr V H Patterson, Dr B MacLennan and Dr J A Lyttle for referral of these patients.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 105 - 107, April 1995.

Case Report

Pneumomediastinum and subcutaneous emphysema complicating staphylococcal pneumonia

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Accepted 11 November 1994

Pneumonia is one of the leading causes of death in the UK, accounting for 60,000 fatalities annually.[1] *Staphylococcus aureus* causes less than 5% of all pneumonias[2,3] but is associated with a high mortality and morbidity [2,3] even in previously healthy individuals. We report a case of a young adult who developed a pneumediastinum and marked subcutaneous emphysema as a complication of staphylococcal pneumonia. Pneumomediastinum is a relatively rare complication of staphylococcal pneumonia, especially in adults. If cardiac filling is significantly reduced urgent aspiration or surgical treatment is required.

CASE REPORT

A previously healthy 15 year old girl was admitted to Leighton Hospital with a seven day history of productive cough with purulent sputum. She also complained of increasing breathlessness and bilateral pleuritic chest pain. Sixteen hours prior to admission she developed swelling of the neck and lower face. She was cyanosed and pyrexial (39.4°C orally). Respiratory rate was 40/min, heart rate 120/minute and blood pressure 90/50 mm Hg. There was no pulsus paradoxus. Two heart sounds were present, together with systolic and diastolic crackling. There was subcutaneous crepitus from the sternal angle to the mandible. Chest expansion was generally poor, with dullness to percussion at the right base, and bronchial breathing at both bases.

White cell count was 53 x 10^9/litre (98% neutrophils) and arterial blood gases indicated profound hypoxia in keeping with type 1 respiratory failure (pH 7.40, pO_2 5.8 kPa, pCO_2 3.8 kPa). Serum urea and electrolytes were normal. Chest radiograph showed bilateral patchy consolidation at the lung bases with a small pneumomediastinum and subcutaneous emphysema (Figure).

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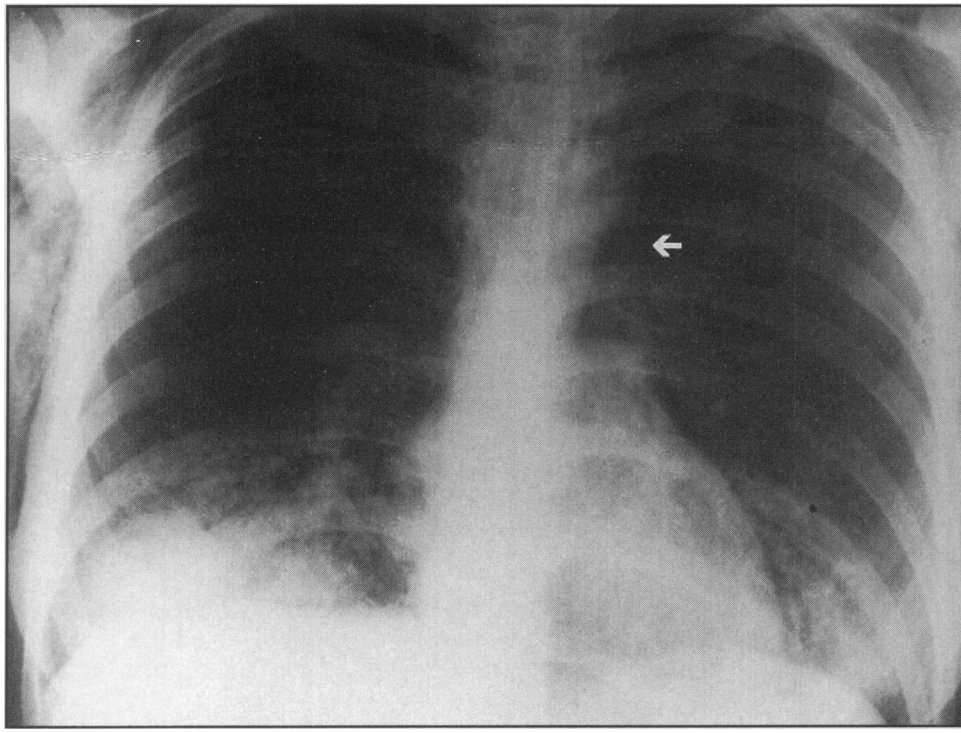

Chest radiograph on admission showing patchy shadowing at both lung bases, extensive subcutaneous emphysema, and the presence of air in the mediastinum (arrow).

After blood and sputum cultures were obtained, intravenous ampicillin and erythromycin were commenced; chest physiotherapy was combined with high concentration oxygen given by venturi mask. Within 48 hours of starting this management there was marked clinical improvement, heart rate settling to 100/min and resolution of the subcutaneous emphysema. Although the patient had not previously been treated with antibiotics the blood cultures were sterile. Microscopy of a mucopurulent sputum specimen revealed gram-positive cocci however; subsequent culture (reported 48 hours after admission by Dr H Mamattah, Consultant Microbiologist) was positive for *Staphylococcus aureus* so oral flucloxacillin was substituted for ampicillin, and erythromycin was continued. The patient subsequently made a full recovery and was discharged home ten days following admission.

DISCUSSION

Staphylococcus aureus is an unusual cause of pneumonia in adults; this agent was responsible for only four cases of pneumonia out of 303 in which an infectious agent was isolated in the British Thoracic Society (BTS) survey.[2] Factors which are associated with a poor prognosis in patients with pneumonia include a respiratory rate $\geq$ 30/min, a diastolic blood pressure $\leq$ 60 mmHg, blood urea > 7 mmol/1, and a staphylococcal aetiology. Since three of these factors were present in our patient she may have been fortunate to survive.

Pneumonia caused by *Staphylococcus aureus* is commonly thought to occur as a sequela to previously impaired respiratory defences, usually caused by influenza or a similar virus, and several authors have stressed that the prognosis with associated influenza A virus infection may be especially grave.[3, 4] In staphylococcal pneumonia there is marked tissue destruction and healing by fibrosis; subsequently antibiotics may penetrate poorly and the results of treatment may be slow (2-4 weeks of treatment may be necessary). Recognised complications of staphylococcal pneumonia include abscess formation, pneumothorax and empyema.[5] Although escape of air into the mediastinum and subcutaneous tissues or pleura by alveolar rupture is recognised in staphylococcal pneumonia, these complications tend to occur in neonates.[5]

Our patient had typical features of pneumomediastinum and subcutaneous emphysema including chest and neck pain and swelling, together with signs of the underlying pneumonia. Hamman's sign (crackling, bubbling or churning sounds occurring in time with the heartbeat[6]) is characteristic but not pathognomonic for pneumomediastinum (it may also occur in patients with a left sided pneumothorax, in which instance it may be abolished by lying the patient on the left). The diagnosis is usually confirmed by a chest radiograph showing radiolucent lines along the cardiac borders.

Pneumomediastinum in adults has been associated with other forms of suppurative lung disease including *Pneumocystis carinii* pneumonia in AIDS, substance abuse, trauma, parturition, asthma, and the neuroleptic malignant syndrome. Spontaneous cases also occur.[6] Contrary to popular belief pneumomediastinum is often benign and self-limiting,[6] and treatment is aimed at that of the underlying disorder. However, if cardiac filling is significantly restricted, the air should be aspirated or removed surgically without delay.[7] Our patient did not have any features of cardiac tamponade and thus was treated conservatively.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 108 - 110, April 1995.

Case Report

Spurious urinary calculosis in pregnancy

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Accepted 17 January 1995

Although the incidence of symptomatic urinary lithiasis in pregnancy is low, it is potentially serious in that it can cause serious renal damage, systemic sepsis or even endanger the pregnancy. Spurious calculosis in pregnancy must be a very unusual occurrence but does pose significant difficulties in diagnosis and management. A high index of clinical suspicion and analysis of calculi produced by the patient, should lead to the diagnosis.

Case report:

A 26 year old female was admitted in the 25th week of her second pregnancy with a history of severe right loin pain and vomiting. She was apyrexic and tender in the right iliac fossa. She passed a small calculus on the following day, which on analysis consisted of calcium oxalate. As the right iliac fossa pain did not subside after passage of the stone, a limited film intravenous urogram was performed and showed a normal pelvicalyceal system, mild dilatation of the right ureter, but no further stones. Because of continuing severe pain and the finding of ureteric dilatation, in the absence of infection, ureteroscopy was carried out to rule out the possibility of any remaining calculus. Though no stones were found in the ureter, a double-J-stent was inserted in anticipation of a radiolucent calculus in the kidney migrating and causing further pain. The patient's pain eased after this procedure and she was allowed home.

She had to be readmitted three days later with severe recurrent right loin pain requiring frequent analgesics. The stent in the right ureter was assumed to be the cause of the pain and was removed, without any symptomatic relief. Unrelenting pain and apparent passage of further calculi necessitated frequent administration of opiate analgesics (pethidine) the cumulative amount exceeding 3.5 gm in 10 days. She was then commenced on an epidural infusion of 0.125% bupivicaine to reduce the need for parenteral opiates, which seemed to relieve her pain and she was again allowed home. She was admitted again seven weeks later (at 36 week gestation) with similar pain. She was recommenced on the epidural infusion of 0.125% bupivicaine with good effect. Caesarean section was carried out to facilitate further evaluation of urinary problems. She continued to complain of pain during the recovery phase and passed further calculi. Repeat urography, right retrograde pyelogram, CT scan and ureteroscopy failed to reveal evidence of any calculi.

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Our exhaustive negative investigations, despite regular "passage" of stones, led us seriously to doubt as to whether these calculi genuinely originated within the urinary tract. The composition of a calculus "passed" by the patient while micturating under supervision, was found on analysis not to be consistent with that of any known urinary tract calculi. She was unable to provide a rational explanation when informed of this finding. Since then she has been under regular review but there has been no recurrence of these symptoms.

DISCUSSION

The incidence of true urinary calculosis in pregnancy varies according to different authors, but the overall incidence is approximately 1 per 1500 pregnancies. Urinary calculi may occur in both primiparous and multiparous patients, but are twice as common in the multiparous. There is a marked increase in the onset of symptoms during the second and third trimesters. Acute flank pain radiating to the lower quadrant in association with microscopic haematuria is the commonest mode of presentation. No significant difference in the side affected has been found [1]. In the urinary tract most structural lesions can be identified with a high degree of precision by imaging and/or by direct visualisation. Intravenous urography remains the cornerstone of diagnosis. It is generally accepted that radiographic studies used judiciously are not contraindicated during pregnancy. The average dose of radiation to the fetus in a single anteroposterior view of the abdomen is approximately 0.2 roentgen and therefore an intravenous pyelogram of 4 to 6 films would deliver approximately 0.8 to 1.2 roentgens of radiation to the mother and fetus which is acceptably low [2]. Exposure to radiation should be limited to a preliminary film, and 20 and 60 minute films after injection of contrast.

Ultrasonography not only has the advantage of lack of radiation but also may detect other abdominal pathology . Skill is needed to carry out this examination and difficulty may be encountered in the evaluation of the mid ureter where abnormalities may be obscured by overlying bowel gas. In the later stages of pregnancy physiological upper urinary tract dilatation may be indistinguishable from the dilatation caused by an obstructing calculus [3]. Laboratory analysis of urinary stones is particularly helpful where spurious or fake calculi are suspected. Most laboratories report that 1-2% of all calculi submitted for analysis are produced outside the human body, but we have not found any reports of this occurrence during pregnancy.

Non-steroidal anti-inflammatory agents and opiate analgesics are the drugs most commonly used to relieve ureteric colic. Non-steroidal anti-inflammatory drugs are being increasingly used as the analgesics of first choice in ureteric colic as they have been demonstrated by *in vitro* studies to abolish ureteric peristalsis, whereas opiates actually increase ureteric spasm. However, anti-inflammatory drugs are contraindicated during the later stages of pregnancy due to their effect on foetal ductus arteriosus. While the opiates are effective and reasonably safe for short term use, their prolonged administration during pregnancy is associated with an increased risk of maternal and fetal addiction. Epidural analgesia is effective in achieving relief of ureteric colic, and is a safer alternative in exceptional cases where frequent and prolonged use of opiates is indicated but needs to be avoided.

Our patient presented during the third trimester of pregnancy with genuine ureteric colic due to a urinary calculus which was passed spontaneously and consisted of calcium oxalate on analysis. The initial diagnosis led us to the liberal use of opiates to relieve persistent ureteric colic. We believe that opiate dependency then led the patient to fake the passage of calculi. Delay in the diagnosis of spurious calculosis can be explained by the initial genuine calculosis and by the restrictions imposed on diagnostic procedures during pregnancy. The case would support the need for chemical analysis of all stones passed in circumstances, such as pregnancy, where other definitive diagnostic procedures are contraindicated.

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The Ulster Medical Journal, Volume 64, No. 1, pp. 111 - 113, April 1995.

Case Report

Primitive neuroectodermal kidney tumour

M S Khan, R A Stewart, H Vazir, A O'Brien

Accepted 17 January 1995

Primary neuroectodermal tumours of the kidney are very rare. We report the sixth case of such a tumour in an adult male.

CASE REPORT:

A 39 year old man presented with frank haematuria and right loin pain. Clinical examination and serum creatinine were normal. There was no excretion from the right kidney on intravenous urography. Ultrasound and CT scan revealed the presence of a 10 cm diameter solid lesion in the upper pole of the right kidney. Two lesions, suggestive of metastasis, were noted in the right lung. Isotope bone scan was normal.

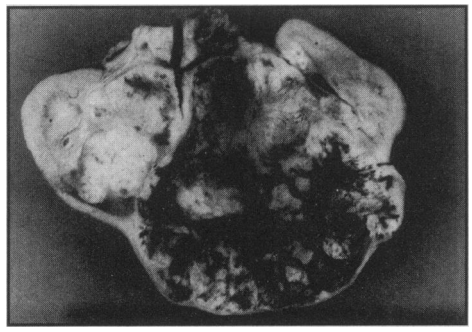

Fig. 1 Right kidney on cut section showing solid tumour with areas of haemorrhage and cystic degeneration. Renal vein is occluded with tumour.

A right radical nephrectomy was performed. The tumour was mostly solid with areas of haemorrhage and cystic degeneration (Fig 1). It had infiltrated the renal capsule and also had invaded and completely occluded the renal vein. On microscopy it was composed of islands and sheets of small pleomorphic cells most of which were ovoid with scant cytoplasm, variable nuclei but lacking prominent nucleoli. There was significant mitotic activity, and both necrosis and apotosis were seen. Vascular invasion was quite prominent. Immmunostains for vimentin were negative but immunostains for HBA-71 stain (MIC 2 gene product) was sufficiently positive on tumour cell cytoplasmic membrane to confirm the diagnosis of primary primitive neuroectodermal tumour of the kidney.

The patient has been treated with eight courses of combination systemic chemotherapy (vincristine, adriamycin and cyclophosphamide) postoperatively. Radiotherapy has been reserved for any local recurrence. Follow up computerised

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tomography showed complete resolution of the pulmonary lesions and no evidence of local recurrence twenty months after operation.

DISCUSSION

Primitive neuroectodermal tumours are a group of neoplasms which are presumed to arise from pluripotential neural crest cells; they present predominantly in childhood and young adults.[1] These tumours are known to originate in the central nervous system or peripherally in the adrenal glands and sympathetic ganglia. Besides these common sites there are sporadic reports of such tumours arising from peripheral nerves, musculoskeletal system, skin and urogenital system including kidneys.[2] Histologically they are composed of small round cells with focal Homer-Wright rosette formation, and on electron microscopy show interdigitating cytoplasmic processes, a variable number of neurosecretary granules and microtubules.[1] Immunohistochemistry plays a significant role in establishing the diagnosis by demonstrating the expression of various neurone specific markers. These include synapsin I, synaptophysin, neural cell adhesion molecules (N-CAMs), neuron-specific enolase (NSE), nestin, vimentin, neurofibrillary protein (NF), glial fibrillary acid protein (GFAP) and less commonly protein S-100.[3, 4, 5] A variety of numerical and structural abnormalities of chromosomes have been identified including a reciprocal translocation between chromosome 11 and 12 (11; 22) (q24; q12) and the presence of an isochromosome seventeen and trisomy of chromosome 1q.[6]

Peripheral primitive neuroectodermal tumours are highly aggressive neoplasms which not only have a tendency to recur locally after excision but also have a predilection to metastasize to distant sites like liver, lungs, pleura, peritoneum, bone and lymph nodes.[7] Primary neuroepithelial tumours of the kidney are rare, and only five cases of adult primitive neuroectodermal tumours of the kidney have been reported. They are more common in males. Positive immunostaining by HBA-71 distinguishes these tumours from blastemal tumours with which they can be confused histologically. There is no standard treatment regimen for such tumours. Two of the reported patients with advanced local disease at presentation died within a year in spite of multimodal treatment. One patient with disease localized to the kidney was reported alive five years after surgery and postoperative radiotherapy.[8] Our patient has had a complete response to systemic chemotherapy and is currently disease free 20 months after surgery.

ACKNOWLEDGEMENT

We would like to thank Dr I B Beckwith and colleagues, National Wilm's Study Group, California, for their contribution in establishing the diagnosis.

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ERRATUM

Intravenous Mercury: a three year follow up:

W J A Anderson: Ulster Medical Journal 1993; 63; 180-183.

It has been brought to our attention that the case referred to in this report had been diagnosed and treated in a different hospital in Northern Ireland to the one stated in the case report. Clinical biochemical advice and the management was provided by Dr Pooler Archbold.

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