Key point summary

- Review and analysis of retrospective, patient based data can lead to changes in clinical practice, with a consequent improvement in the quality of care
- The technical ability to obtain such data and analyse them is an important component, but will not be productive without the full involvement of clinical staff
- Care needs to be taken to ensure appropriate linkages are made between clinical peer review and management mechanisms to ensure the full benefit to the organisation
- The stage at which audit information becomes management information depends on the degree of trust and cooperation between doctors and management
- "Improvement depends on learning from information about performance"⁴

informal. The larger hospitals, on the other hand, have experienced considerable difficulty in communicating this vital information, with its implications for the contracting process.

Whatever the size of the hospital, the clinical director must regard quality of service within the directorate as one of his or her prime responsibilities. Support from consultant colleagues with management duties in the directorate should be sought because they are in an ideal position to ensure that quality issues are progressed. Furthermore, these doctors have credibility with the medical staff to act as leads for clinical audit and can carry issues through to the management groups.

In a larger or less relaxed hospital some thought needs to be given to ensuring that the changes in clinical practice which lead to better care for individual patients are also considered in aggregate, and their overall contribution to the specialty and the hospital should be considered. Information for clinical audit and information for general management are inter-related and cannot be meaningfully considered in isolation.

1 Audit Commission. *A short cut to better services: day surgery in England and Wales*. London: HMSO, 1990.

2 Coulter A, Klassen A, Mackenzie IZ, McPherson K. Diagnostic dilatation and curettage: is it used appropriately? *BMJ* 1993;306:236-9.

3 Scherkenback WW. *The Deming route to quality and productivity*. Washington, DC: George Washington University, CEE Press, 1991.

4 Berwick D. The double edge of knowledge. *J Am Med Health* 1991;266:841-2.

Rethinking Consultants

Where medical science and human behaviour meet

Jonathan Rees

This is the third article in a series on the changing role of hospital consultants

Although we may be wrong about the details, we should try to imagine what the future holds for hospital consultants. The days of the independent consultant in the same post for 30 years are over, and there will be a change from "the" consultant to a few tiers of senior staff. Patients will increasingly demand to see specialists, so more specialists will be needed. As patients and their advocates become better informed the traditional rationing of clinical care to patients in Britain, such as restricting access to specialists, cannot continue. There is a current trend for evidence based health care, but the idea that each element of medical practice can be dictated by systematic evidence based research will prove to be naïve—such research informs practice rather than dictates it. Science will continue to act as the guide to medical practice but specialists will not be turned into a set of logical operators running programs designed by health planners.

Humans tend to have two misconceptions about the future: firstly, that if we know the present we can predict what is going to happen and, secondly, that we understand the present. For any activity dependent on new knowledge, as medicine is on science, the future is uncertain simply because new knowledge always changes the rules of the game. But even if we could dream this problem away our guesses of the future will be in error because we continue to delude ourselves, outside the laboratory at least, that we understand the present: William Blake said that "every honest man is a prophet." Nevertheless, millions of years of biological engineering have forced us down the path of linking the past with the present and the future, wiring us to anticipate and prepare for what has not happened—the triumph of play over mere reflex.

So, however wrong we may be about the details of what the future holds for hospital consultants—

Calman, outreach clinics, and such like—it would be a mistake not to try to imagine. What therefore is on the horizon?

The driving force of change will remain new biomedical knowledge and our adaptation to this information. Adaptation includes, firstly, the distribution and dissemination of this knowledge to both those who supply and those who demand services and, secondly, sorting out how this knowledge is controlled, regulated, and ultimately dispensed. And the fault line will continue to be drawn ever more sharply between the value system that gave us modern pharmacology and the polymerase chain reaction and that of those who roam our hospital corridors happy to continue using Machiavelli's *The Prince* as their set text.

Challenges to consultants' knowledge and power

The days of the independent hospital consultant appointed in his or her mid-30s to hold the same post for 30 years are numbered. This should be a matter for celebration. The irony is that as this becomes so obvious people are frantically trying to put the clock back 30 years by reinventing the lone peripatetic specialist: it won't work.

When I was a medical student at the hospital where I now work hospital consultants used to have reserved car parking spaces, their name and title neatly printed on the wall. A few years later at this same teaching hospital I was discreetly taken aside at the end of a ward round and reminded that juniors should not argue with or question the consultants. I quote these anecdotes because they are two sides of the same coin, and there has since been a run on the currency. Once the confidence goes—once consultants are no longer unchallengeable—whatever went before will be seen as having been overvalued.

Knowledge, and the increasing dissemination of

University Department
of Dermatology,
University of Newcastle
upon Tyne, Newcastle
upon Tyne NE1 4LP
Jonathan Rees, professor of
dermatology

BMJ 1995;310:850-3

General practitioners' role as gatekeepers may change as patients demand direct access to specialists

knowledge, and with this the inevitable dissemination of power, has opened up and will continue to open up our hospitals to critical scrutiny. Patients, patients' groups, and patients' advocates (of the legal kind or otherwise) will talk up the standards expected. The response to this, as in any other culture driven by technology, will be the continued increase in specialism that we have already seen over the past 50 years. This does not, however, mean that doctors will become mere technicians, easily replaced by paramedics, who carry out only a couple of clinical activities.

The paradox of specialism?

A comparison with what is happening in the natural sciences is instructive. More than at any other time it is now possible to think about any problem in biology using a common set of concepts—namely, those of cell and molecular biology. All those old disciplines—physiology, pharmacology, pathology—now share a common language. Yet as each practising scientist requires an ever broader grasp of all of biology, as biology is more and more one discipline, there has been an explosion in the number of subdisciplines and specialists. Clinical medicine will be no different.

The inexorable growth of specialism will continue, but it will not take the form of the reduction of clinical practice to vein strippers, chest openers, and chest closers in some parody of an industrial production line. Instead it will demand both technical skill and an ever greater awareness of the culture of medicine: humans, after all, are neotenuous both biologically and culturally—just look at the changes in undergraduate education.

The division of labour, or spawning of specialisms, will extend beyond immediate clinical practice to clinical management, teaching, and research. Already as NHS funds are reallocated under the umbrella of research and development many consultants are realising that they can earn more for their trusts through research and teaching than by providing direct patient services. Nevertheless, the growth of scientific knowledge and the resulting increase in our ability to alter the natural course of disease, and a dominant ideology that ever reduces and compartmentalises hospital activities into teaching, training, and so on, are not the sole engines of change.

The demands of patients

Consumerism and the subtle and not so subtle changes that accompany patients having to pay more for their medical care will also force changes in

practice. To some extent these changes will work against doctors in that higher expectations lead to more complaints. But doctors will also increasingly seek to harness public aspirations for their own benefit. The recent skirmishes on rationing are instructive.

Doctors in the United Kingdom have a history of limiting access to specialised care. Whenever they or their immediate families are ill, however, they probably expect the system to work very differently. Much of our clinical behaviour would not pass the Windsor test: imagine that every patient you treat is a member of the royal family. Would you then still make the same decisions, allot them the same time in outpatients, and so on?

Whatever the merits of our former system of implicit rationing, it cannot continue. Patients and their advocates will be better informed, and the current attempts to redefine political decisions as medical decisions will fail. For doctors caught in this impossible bind the increasing pressures from managers to ration health care will lead to the older professional values reasserting themselves. Once again the advice given to each patient will be paramount; this advice will ignore any attempts at rationing or "gatekeeping," and physicians may once again seek to act as the patient's champion rather than as bureaucratic agents of the state. Similarly, the present restraint with which professional colleagues are criticised and their lapses in care condemned will be seen increasingly as an abuse of privilege and as unprofessional: professional integrity must be defined by its open relation to knowledge. The level of clinical skills and standards, and public expectations, will continue to be talked up. Aspects of specialist provision and work patterns in the United Kingdom will come to resemble more closely the practice in other parts of Europe.

Implications for patterns of practice

There will be a greater demand for specialists, larger and possibly more hospitals, increased subspecialism, more internal referrals between specialists, but also a change from "the" consultant to a few tiers of senior staff. These tiers may be hierarchical or, by analogy with flat management styles, comprise different specialists working in parallel. Teaching, training, and the development of clinical practice will all become increasingly formalised and will take up more and more of consultants' time.

Individual doctors will see fewer patients, and therefore more specialists will be needed. Although British doctors have a quaint belief that patients do not know the difference between their skin and their heart, some specialists will inevitably overflow outside hospital into private office practice. Patients will demand direct access to specialists. Patients with a rash will want to see a dermatologist, either in the hospital or in office practice. After all when they have toothache they visit the dentist not their general practitioner. Indeed, the move by fundholders to establish consultant clinics in their practices may encourage this demand and lead to a situation where primary care generalists will coexist and compete with European-style office specialists.

Limitations of medicine by numbers

Most of the above may seem rather old hat. It also ignores current dogmas about cost control and managed health care and the other tricks by which governments try to delude the public that their health care policy is rational and equitable. However, the view of what constitutes medical knowledge is set for a shake up.

It is fashionable to imagine that most of medicine can somehow be reduced to a set of axioms, checklists, and

algorithms: medicine by numbers. And in this analogy we can include not just the medical "facts" but somehow all the humans as well—the specialists are just commodities after all. In this model, medicine—people and all—is just a sort of giant Victorian clockwork mechanism, but with flow diagrams instead of levers. But just as those old textbook telephone exchange analogies attempting to illuminate brain function now seem rather passé, so with this model. And here lies the problem that I referred to in the introduction.

We are extraordinarily bad at explaining or usefully modelling all the social activities that we call medicine. This applies not just to new knowledge itself but also to all that soft biological engineering that underpins human behaviour and allows the dissemination and characterisation of this new knowledge. For example, at a clinical meeting (and I caricature the arguments) a young physician commenting on the case of an elderly woman admitted with a haematemesis questioned why she had been allowed to linger in a hospital bed for over a week after admission. Surely she should have been "turned around" ("shifting units") in 36-48 hours with instructions to phone (or even email) when she had further problems? What published evidence was there to justify this consumption of scarce resources? A short discussion followed but ended when a senior consultant gruffly replied that he wasn't impressed by much of the published evidence but was quite happy to testify in court that it would have been downright negligent to let the woman go home earlier.

Why do I recall the story? Is it wrong to try to conserve scarce resources? No, of course not. Is it wrong to rely on empirical evidence (how often do people rebleed, and when, and so on)? No, of course not. Yet this vignette reveals the problems we face. Any humane medicine is underpinned by two ethical values. Firstly, there is the value that we attach to the belief that other people matter and that the meaning of any disease is personal and unique for them; a physician's skill is to understand and act on this. Secondly, there is the value that says you cannot possibly advise, or even respect, others unless you are in possession of the facts. And the ethic here is to know and be able to examine dispassionately the results of any intervention.

So just as knowledge of when the patient is likely to rebleed is essential, so also is the knowledge that there is no calculus that allows you to calculate explicitly the product of these two ethical values. A further reason

for recalling this clinical story is to remind us what sorts of error—confidence limits—we have to place on our empirical knowledge.

Dictating medical activity according to algorithms and systematic reviews does violence to the way medicine is practised. The present fad for evidence based health care (as though Pasteur, Florey, or Watson and Crick did not rely on evidence) shows a similar poverty of vision. Yes, variation may be reduced, and often that will be a good thing. Yet ultimately the idea that each element of medical practice will be dictated by systematic evidence based research will be found to be as naïve as the hopes of logical positivism that we can explain all of the universe, including ourselves, from Euclidean geometry.

Karl Popper tells the apocryphal story of the man who posthumously donated all his notebooks full of all the facts and observations he had made throughout his ordinary humdrum life to the Royal Society—after all it's all about facts isn't it? No it isn't, and the same goes for medical practice.

Information based service can't be run like a production line

The whole of the research and development budget for the next 100 years won't be enough to dictate medical practice. Empirical evidence is used to underpin the strategies that make up everyday practice. Trials inform practice, not dictate it. The same holds, only even more so, for how we model and attempt to change clinical behaviour.

Hospitals work because of a culture of commitment to the respective disciplines. If all the consultants in internal medicine are going to be clerking patients and running drips through on eight hourly shifts then you end up not with consultants but with interns, and they will behave like them. A new tier of senior consultants will have to be invented. Either the culture of individual commitment will be expressed through all the activities that make hospitals social institutions—teaching, research, training, administration, royal college work, and so on—or you will end up trying to run an information based service as though it was a car production line.

There is a topical example that makes sad reading: audit. Suddenly a whole century of medical practice was going to be modelled by phrases about as meaningful as "progress is a good thing." How can one disagree with the sentiment that we should examine medical practice? But we cannot build a culture from such empty rhetoric. Despite all the quasilegalistic enforcement audit remains dull and a subject of private ridicule: a wasted opportunity.

Structure and theory of medical practice

So why do I go on at such length about the structure and theory of medical practice? What has this to do with future consultants and specialists? Simply, that the widespread model of medicine in which all the component parts of clinical practice are logically dictated from empirical (systematic) evidence is about as convincing as psychoanalysis was useful as a model for neuroscience.

The pace of change in biomedical science will outstrip our ability to describe and explain clinical behaviour. Science will continue to act as the guide to practice, but the attempt to turn specialists into a set of logical operators running programs designed by health planners will fail simply because it does not describe reality. And increased pressure to dictate clinical behaviour as though all the patients are statistical means, where each clinical decision is seen as a trade off

What characterises specialists is their ability at the margin of knowledge

between scarce units of resource, will paradoxically lead to a reaffirmation that the professional's duty is to the individual patient.

The specialist's role at the margin of knowledge

What characterises specialists is, to borrow an economic concept, their ability at the margin of knowledge. This cannot be replaced by semitrained nurses or physician assistants or by championing generalists as economic gatekeepers.

The scenario that I have sketched may not happen. Most empirical evidence suggests that it would be an expensive way to provide health care. But consumerism

and ever more information about the potential benefits of medical intervention will forge an alliance directly between physicians and patients (real rather than proxy purchasers), resulting in pressure for increased specialist care. Technical advance will drive demand, and the priests that tend the machines will increase in number, as will the number of their sects. Alternatives of course do exist.

My treatment of the ethics of a humane medicine owes much to the ideas advanced in *Science and Human Values* (Hutchinson, London 1961) and *A Sense of the Future: Essays in Natural Philosophy* (MIT Press, Cambridge, Massachusetts 1977), both by Jacob Bronowski.

Guidelines on appropriate indications for upper gastrointestinal endoscopy

A T R Axon, G D Bell, R H Jones, M A Quine, R F McCloy

Upper gastrointestinal endoscopy is a valuable diagnostic tool, but for an endoscopy service to be effective it is essential that it is not overloaded with inappropriately referred patients. A joint working party in Britain has considered the available literature on indications for endoscopy, assessed standard practice through a questionnaire, and audited randomly selected cases using an independent panel of experts and an American database system. They used these data to produce guidelines on the appropriate and inappropriate indications for referral for endoscopy, although they emphasise that under certain circumstances there may be reasons to deviate from the advice given. The need for endoscopy is most difficult to judge in patients with dyspepsia, and this aspect is discussed in detail. Early endoscopy will often prove more cost effective than delaying until the indications are clearer.

is appropriate should be referred. A joint committee of the Royal College of Physicians of London, Royal College of Surgeons of England, Royal College of Anaesthetists, Association of Surgeons, the British Society of Gastroenterology, and the Thoracic Society of Great Britain has been auditing gastrointestinal endoscopy in England. On the recommendations of that committee a working party was set up to determine the appropriate indications for endoscopy. This report details the findings of the working party.

Methods

The working party did a systematic manual search and a Medline search of literature published on the appropriateness and inappropriateness of and indications for endoscopy since 1981. The epidemiology of upper gastrointestinal disease in the United Kingdom was specifically considered because the prevalence and types of dyspeptic disease differ widely throughout the world. In this report dyspepsia is defined as upper abdominal or retrosternal pain, discomfort, heart burn, nausea, vomiting, or other symptom considered to originate from the proximal alimentary tract.¹ Heart burn is defined as an intermittent burning pain felt in the retrosternal area often but not always associated with a feeling of gastro-oesophageal regurgitation and typically relieved by taking antacids.

We also assessed current practice in Britain in two ways. We sent 1297 questionnaires to a random selection of doctors comprising 350 general physicians, 400 surgeons, 477 gastroenterologists, and 70 general practitioners.⁸ Questions were asked in the form of a brief clinical scenario to which the doctors had to reply whether or not they would usually refer for endoscopy.

An audit panel of seven judges (physicians and surgeons with an interest in gastroenterology) assessed 390 cases randomly selected by the audit coordinator from four endoscopy units throughout East Anglia (three in district general hospitals and one in a teaching hospital). The cases represented one month's work for these units. The cases were also assessed independently for appropriateness by using an American database last revised in January 1989.⁹ The methods and results of the questionnaire and assessment have been published⁸ and form the basis of this report.

Appropriateness was defined as follows.¹⁰ For a procedure to be appropriate its expected benefit should be greater than its expected negative consequences by

Introduction

Most patients referred for endoscopy complain of symptoms that come under the general heading of dyspepsia.¹⁻⁵ Gastrointestinal symptoms are responsible for about 10% of the work of general practitioners,⁶ with upper abdominal symptoms (principally dyspepsia) accounting for about half. The severity and frequency of symptoms alone does not predict the likelihood of consultation, however; concerns about the meaning of symptoms, particularly in terms of malignancy and heart disease, play an important part in determining whether a patient consults. This is reflected in the finding that dyspeptic patients with negative findings on endoscopy have greatly reduced consultation and prescribing rates after the procedure.⁷

The diseases most commonly sought by endoscopy are reflux oesophagitis (and its complications), oesophageal varices, oesophageal cancer, gastric ulcer, gastric cancer, duodenal ulcer, and coeliac disease. The main purpose of the investigation is to identify the cause of symptoms in order to start suitable treatment. A secondary reason is to exclude organic upper gastrointestinal disease so that further investigations can be undertaken to identify the cause of symptoms or alternatively the patient and clinician can be reassured that no serious disease is present.

For endoscopy services to be used to their best advantage only those patients for whom the procedure

Centre for Digestive
Diseases, General
Infirmary, Leeds LS1 3EX
A T R Axon, consultant
physician

Ipswich Hospital NHS
Trust, Ipswich IP4 5PD
G D Bell, consultant
gastroenterologist

Department of General
Practice, United Medical
and Dental Schools of
Guy's and St Thomas's
Hospitals, London
SE11 6SP
R H Jones, Wolfson professor

Royal College of Surgeons,
London WC2A 3PN
M A Quine, research fellow

University Department of
Surgery, Manchester Royal
Infirmary, Manchester
M13 9WL
R F McCloy, senior lecturer

Correspondence to:
Dr Axon.

BMJ 1995;310:853-6