ment is the 'quality benefit year cost'. For young patients with curable malignancies it is easier to calculate and lower (e.g. £500/year for a patient with metastatic teratoma receiving chemotherapy). For palliative therapy cost is more difficult to determine and is higher. For adjuvant therapy, which may not benefit all patients, it is also higher (e.g. £4,000/year for a patient with breast cancer and £1,700/year for a patient with colorectal cancer). In all cases where treatment benefit is not clear, attempts should be made to enter patients into clinical trials.

Clinicians should work with health economists to undertake the difficult task of cost-effectiveness analysis. Such analysis should provide a framework for standard practice, but the individual needs of the patient should not be compromised by purely financial constraints, and cost-effectiveness should not become a euphemism for cost-cutting.

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# IMPROVING CLINICAL QUALITY IN THE HEALTH SERVICE

AN OUTCOMES SYMPOSIUM HELD IN THE COLLEGE ON 29 APRIL 1993

The quality of medical care can be assessed by looking at the results or, in audit terminology, outcomes. The College together with Lothian Health, the health services organisation for the Lothians, organised a symposium on the outcomes of medical care in April 1993. The programme was devised by Dr Sheena Parker of Lothian Health and the meeting was organised by Dr J. Petrie and Christina Pottinger of the Education, Audit and Research Department, RCPE. Funding was provided by the Clinical Resource Audit Group (CRAG) of the Scottish Home & Health Department and Glaxo Pharmaceuticals (UK) Ltd. Around 100 participants attended during a day characterised by lively questioning and debate.

## EXECUTIVE SUMMARY

Clinical outcomes are measured changes in the health status of individuals or groups which can be largely attributed to interventions by the Health Service. Measurements of the effectiveness of clinical care need to be *valid and simple*, so that they can be achieved as part of routine practice, and *repeatable* so that changes in health status can be measured over a period of time. Clinical outcomes can only be compared between service providers if the facilities for care, the patient population and staff skills are broadly equivalent.

The lead should be taken by CRAG and the Scottish Royal Colleges in developing national clinical guidelines incorporating outcome measures which can be shown to change clinical practice and be capable of audit. The Colleges should work with purchasing authorities and the profession to develop guidelines centred on patients and aimed at achieving the best outcomes in the context of the NHS in Scotland. The guidelines should ensure that:

Local protocols are developed from national guidelines that can improve the outcome of care for patients and the training of clinical staff.

Purchasing authorities work together with the profession in their areas to develop clinical outcome measures useful to both clinical staff and purchasers in monitoring the effectiveness of clinical care.

Recognising that patients' views on the quality of care are potentially valuable and should be taken fully into account both by purchasing authorities and clinicians.

Information arising out of medical audit should be shared with the public and with the purchasing authorities which have a role as patient advocates.

The development of shared care between the primary and secondary sectors is evaluated in terms of the impact on clinical outcome as well as on cost.

More use is made of available data to compare clinical outcomes and encourage the development of information networks between the providers of care to minimise differences in outcome.

## *Session I*

WHY ARE WE HERE?

*Dr J. D. Cash (Vice President)* in opening the Symposium emphasised the College's responsibility for ensuring high quality medical care for the public. This responsibility it discharged through its training and education programmes. *Dr L. Burley (Lothian Health)* described outcomes as measures of the impact of medical care on the health status of individuals. The development of methods of measurement of sensible clinical outcomes had risen to the top of the agenda for two reasons. The first was the desire of doctors to improve continuously the quality of their care and to use medical audit to effect clinical change, and the second was the wish of those paying for medical care to get the best health value from the available budgets. Both providers and purchasers are interested in the variability of outcomes. Lothian Health is committed to improving the health status of its local population and needs to learn the clinical effectiveness of a £400 million budget. Doctors interested in improving the quality of care and purchasers looking for good health value need to work together.

## *Session II*

WHERE ARE WE NOW AND WHERE DO WE WISH TO GO?

*Use of routine audit data*

*Mr D. R. Harper (consultant surgeon, Falkirk)* reviewed the recent history of medical audit. He suggested that audit may have changed the practice and process of medical care but it was uncertain whether the outcomes had been improved.

CRAG had been asked to define outcomes of clinical care that could be built into the contract process in 1993/94. They had begun by looking at available data. For example the percentage of hip fractures discharged home from hospital is about 60% but it varies considerably between health boards and units. Studies of 30 day mortality of operations conducted within the UK and Scotland show considerable variation between health districts and between individual units. These data cannot be taken at face value and require interpretation. Outcomes cannot be compared unless the case mix, skills and facilities are also broadly equivalent as some of the differences in outcomes could be explained by differences in these factors. These outcomes are mainly of interest to purchasers and they are too broad for audit by individual clinicians.

Clinicians are interested now in developing guidelines and profiles of care to achieve the best medical outcomes. There concern may not be sufficient; what, for example, are patients interested in? They are interested in survival and improvement in health status but pain, loss of function and the implications of illness and outcome may also be important for the individual or family.

*Grampian Health Outcome Study*

*Dr D. Ruta (Lecturer in Public Health, Aberdeen)* described the work of the Grampian Health Outcome Study (GHOST) which has been running since 1991 and has aimed to compare different approaches to measuring health. They used the SF36 Health Status questionnaire developed in the USA which had been tested and validated over the past 15 years and, secondly, specific questionnaires



developed for four common conditions: back pain, menorrhagia, varicose veins and peptic ulcer. The two measures were compared for their validity, reliability and responsiveness over time and used to develop a package for routine use. The results clearly demonstrated that they were valid and reliable markers of health status and were complementary. They had clinical validity since they demonstrated clear differences between healthy controls and those suffering from these conditions and they also distinguished degrees of severity in the patients that general practitioners referred to hospital. Both measures were sensitive over time to changes in health in response to medical intervention.

GHOST II is a feasibility study over one year in a gastroenterology department. About 500 patients will be asked to fill in the SF36 and a disease specific questionnaire on ulcerative colitis. These results will be combined with objective clinical data such as from sigmoidoscopy. The analysis of the data can provide information both about individual patients (e.g. the worst 10%) and groups to determine the effect upon health status of different interventions.

This method of continuous measurement is used in Boston; patients fill out a questionnaire while they wait in the clinic, the questionnaire is marked by an optical reader and the results are available for the patient and the doctor during the subsequent consultation. Dr Ruta said that a larger pilot study over a range of clinical services within a Health Board, including contributions from GP fund holders, is needed now. Information about effectiveness of health care obtained in this way could be more useful, and was cheaper and faster to produce than through a series of controlled trials.

GUIDELINES

*Dr J. Collier (St George's Hospital, London)* described the use of guidelines for common medical emergencies the production of which he has organised since 1979. The 'Grey Book' is now in its 18th edition, covers over 40 common medical conditions and is made available to about 1,000 medical staff and final year students. The guidelines are written by individual clinicians and refined through a process of review every 6 months rather than by consensus. Regular review was essential to maintain the validity and credibility of guidelines which varied much in their content from very short to extremely detailed. They were also designed for local use and many of them could be applied only in St George's. Details of a study of the success in distribution of the guidelines and their use is printed elsewhere in this issue (p. 118). The guidelines are now being incorporated into medical audit, for example those on the appropriate use of endoscopy after upper gastrointestinal haemorrhage and on the diagnosis and management of pulmonary embolism. The effect of the guidelines on treatment and outcomes is yet to be evaluated.

UK CLEARING HOUSE

*Mr P. Dixon (UK Clearing House for Information on Assessment of Health Outcomes, Leeds)* described some of the major activities of the Clearing House. These included a service for information and advice on outcome measurement, a resource centre of outcome assessment materials and a centre for networking and information exchange.

The Clearing House database of outcome projects is compiled from managers, health authorities, NHS trusts, postgraduate deans of medical schools, GP fund holders and others who are likely to be involved in, or have knowledge of, outcomes work. In an analysis of the first 420 entries only 2 per cent were using the methodology of formal trials and a further 10 per cent included some mechanism to control for the influence of non-NHS and other potentially confounding factors.

Most outcome measurement takes place in routine settings as part of the standard provision of care. It is often impractical to disturb this process by introducing controls. Moreover, the settings may be so complicated that, regardless of any controls, it is hard to see how the effects due to different factors can be separated out. Care in the community for the chronically ill is a case in point. Patients may be prescribed several types of medication for several conditions and may be receiving other health care and social services. Their state of health is sensitive to a variety of environmental and socio-economic factors and it is hard to see how all these can be allowed for when trying to measure the impact of one aspect of care, such as physiotherapy. Outcome measurement is generally a slow continuous process, but the need for this information to support purchasing in the restructured NHS is urgent. Purchasers are wanting information on outcomes now, to use in deciding what are the effective interventions which they should purchase and to set standards in contracts. Major dilemmas exist knowing what methods and measures to recommend. Controlled trials are inapplicable to many routine service settings. Advice on less rigorous and more flexible methods such as 'before' and 'after' measurements, comparisons with control groups, and the types of entry and process data needed to improve the interpretation of information is required. A start has been made by using the database to identify groups of workers with similar methodological problems and see if distinct strategies can be developed for each. Of reported projects 10 per cent had designs which included elements of trials methodology. Many of these were 'before and after' comparisons of the effectiveness of two different ways of caring for the same conditions or patient group; for example two different approaches to palliative care for stroke services or for cholecystectomy. Key methodological issues for this group are (1) How far should the designs of these projects be developed in order to have a better chance of inferring attribution? (2) Is it possible to organise the collection of information in such a way that the final data sets are sufficiently balanced to permit use of analysis of techniques or related statistical methods? (3) How to make individual parts of a design as rigorous as possible? The largest group of projects were exercised in auditing, monitoring and measuring the effectiveness of new or established services. They rarely incorporated any comparisons or controls and their methods were constrained by the settings. They studied single services, sometimes to evaluate the impact of new structures and made no attempts to measure factors such as severity, comorbidy, and socio-economic characteristics of patients. Some were therefore little more than retrospective measurements of health from which no valid conclusions on outcomes could be drawn. These projects were undertaken widely across the NHS and posed methodological problems that needed a range of solutions.

More precise aims were needed. In particular, projects should concentrate on aspects of a service that can be realistically evaluated and where there is the greatest likelihood of implementing any recommended changes. Modest results should follow the development of more precise process measurement and making greater use of existing data. In some cases, process measures many be reasonable alternatives to outcomes. In others it may be best to concentrate on the development of treatment protocols. These approaches draw attention to both the intended intermediate and final outcomes of an intervention and may suggest ways in which these can be measured. The UK Clearing House will be concentrating on developing better methods of outcome assessment for different classes of activity and on ways of promoting their use.



There is always going to be a place for properly conducted trials of effectiveness and for meta analyses. Purchasers, as well as clinicians, are eager to use information on the effectiveness of interventions, particular for routine and high volume surgery. A Department of Health and Clearing House survey of secondary sector purchasers found that more than 80 per cent of them had already referred to the Effective Health Care Bulletins in making decisions on commissioning and were keen to have more information of this type. However, for the foreseeable future, information on effectiveness may be limited and most outcome work based in settings not conducive to controlled trials. It is therefore important to develop good methodologies for these less controllable activities. Effective outcome measurement needs supporting by measurement of a range of other factors, particularly severity and case-mix. Much more needs to be done to develop these forms of supplementary measurement, just as much more could be done to analyse existing data more profitably.

## ECONOMIC ANALYSIS

The economic perspective on outcome measures was provided by *Mr J. A. Cairns (HERU, University of Aberdeen)*. Economic analysis can provide insight and a structure for comparing outcomes but it is unlikely to provide quick answers. Although it is widely assumed that an improvement in the quality of clinical care is always good, economists may question this. If improvements in clinical quality can be achieved without using additional resources or giving up something else of value, that is an excellent outcome (an improvement through technical efficiency). If improvements in care can be achieved only by using more resources or by diverting resources from other activities then choices have to be made. Here an economist can help to decide whether the increased costs outweigh the benefits of improvement in care. In these circumstances such an improvement is not necessarily a good feature.

Economic evaluation can contribute to the choice of quality of care and outcome. It can help to frame the relevant questions and provide methods to assess the costs and benefits associated with the changes in practice. Economists focus on the additional benefits yielded by one course of action compared to another and the 'opportunity' cost of that benefit. This opportunity cost is the most valued feature which has to be given up when resources are switched. For example, when considering what resources to commit to medical audit, the relevant opportunity costs become those other things on which this budget might have been spent. There is always an open question about how far the net should be cast when considering what opportunities are lost. It is uncertain about whether these lost opportunities should be examined within the same sector

of health care or over the whole service. Economists can also provide useful insight into the incentives and disincentives for changing the quality of clinical care and outcomes. In the private sector, the major incentive of providing companies is usually increased profits or a larger market share. But what incentives are there to clinical quality in an NHS Trust or a Health Board? What incentives (or disincentives) may confront an individual clinician?

Economists have not been as concerned with quality as with quantity and price which are more easily measured and manipulated. Clinical practices ideally should be judged by improvements in health status and not by the quality and the quantity of actions that achieve a particular outcome. Outcomes should measure the effectiveness of different means of improving quality of care and should associated with improvements in health. However, the attribution of health care interventions to improvement in health is difficult. Improvements in health status that do not take into account the views of patients or do not describe outcomes that are meaningful to patients are unlikely to be worthwhile. Surrogate measures of outcome such as a biochemical index are less useful than measure of a patient's quality of life.

Purchasers have to be able to decide how much they wish to invest in an improvement in quality. Information on both the costs and the benefits will be difficult to obtain. We do not understand the relationships between improvement in quality of care and valued outcomes and until a systematic economic assessment is done this will be impossible. The expected benefits in terms of morbidity or mortality, improved quality of life and reduced resources are hard to predict. Economists may help by putting a value on shorter length of stay in hospital or earlier return to the labour force but more intangible effects are difficult to cost and the true saving of resources from shorter length of stay are not easy to identify. Economic evaluation can help to decide how far quality of care should be improved or to make a choice between health outcomes.

## *Session III*

### PERSPECTIVES FROM INSIDE AND OUT

#### *Patients*

*The Rev. T. A. McGregor (Chaplain to the Royal Infirmary, Edinburgh)* highlighted the perspective of patients respecting health outcomes. Health services exist to help the sick, the dying and the vulnerable. These look for competence, compassion and committed care.

Patients expect their care to be provided with good communication and, where feasible, with charisma so that good relationships are fostered between carers and patients. Patients expect that services should give prompt access to care. Patients also expect the correct diagnosis and there were many anxious women in the West of Scotland awaiting the outcome of review of their cervical smears. They expected effective treatment and trusted carers to provide that. They wanted information but in a sensitive manner that respected their wishes, and they wanted to know if there were options for treatment and what these might mean for themselves. Patients are looking for a partnership in decision making and trust that their carers are up to accepted standards of competence. Patients have a right to expect privacy, dignity and respect. For a 74 year old



woman to be moved from one ward to another in the middle of the night was not consistent with these ideals. Many patients, and their carers, were worried about premature discharge from hospital and an examination of readmission rates would help to establish the facts and allay unnecessary fears. Confidentiality was important to many patients and was frequently breached as staff call instructions from one end of a ward to the other. Patients hoped for a congenial, therapeutic environment that was responsive to their varied and changing needs.

To misquote Socrates 'An unexamined professional life was not worth having'. Medical audit was welcome as a tool for improvement but privileged access only to doctors was questionable. Most doctors knew whom they would like to treat a member of their own family and whom they would not. Why should patients not have the same informed choice about where and from whom to receive care? It was not a simple matter to gather the data and the differences in crude outcomes needed careful interpretation. Most of the published outcome measures are of medical interest but how many would be valued by the patient? We need to develop patient sensitive measures as well and address issues like quality of life rather than 2-year survival. It is a challenge to the caring professions to present outcome analysis honestly and helpfully. It will be difficult but making data available will earn the public's respect.

The current market philosophy in health care worried patients. Would the cheapest prices reflect the worst hospitals? Priorities for scarce resources create ethical dilemmas as care for one group is an opportunity lost for others. Patients should be able to influence services at three levels, (1) by individual interaction with doctors; patients and the public should praise good medical care as well as provide helpful criticism, (2) local health councils should be more closely involved both in the purchasing of health care and providing feedback to GPs and to hospitals, and (3) patients and the public should get involved in the political process.

The current obsession with providing strong management in the health service needs to be carefully examined. Can it prove its worth? Or is it merely a tool of the government in order to provide a cheaper product? The public should question whether the estimated £0.5 billion spent in England and Wales on information technology represents good value for money. Many of his colleagues in the NHS were agnostic in their approach to the NHS reforms. More thoughtful consumer involvement at these different levels should help to shape the NHS for the future.

#### *Purchasers*

*Dr H. Burns (Greater Glasgow Health Board)* indicated two tasks for purchasers; they should take responsibility for health gain in the population, and they should be the patient's advocates. Pursuing these objectives may result in conflict with clinicians who have spent their professional lives delivering standard models of care. Solving this conflict will not be easy but the difficulties can be overcome.

Purchasers should have explicit objectives to ensure that they deliver health gain effectively. These objectives should be guided by national priorities, public preferences and local needs assessment. They should cast their nets wide in evolving new models of care and partnerships with non-NHS agencies may produce health benefit. For example, cost effective health gain may be achieved by working with car restraint manufacturers to provide free safety seats for

children. Purchasers should be imaginative in the way that they use their power. When considering how to reduce mortality from stroke, we should examine not just the acute hospital sector and the care provided by it, but we should also consider health promotion and primary care aspects. How many patients with stroke or suspected transient ischaemic attacks are taking simple antiplatelet agents like aspirin? Do general practitioners know who these 'at-risk' patients are? It might be more appropriate to monitor the process of care for these patients rather than the outcome. By concentrating on the process we draw the attention of general practitioners to the importance of primary prevention.

The outcomes available from some types of care are clearly difficult to judge. One might anticipate that providing effective services for disturbed children would be of enormous benefit to the community in subsequent years. Outcome measures for child and adolescent psychiatry and psychology are extremely difficult to determine. In Glasgow, a period of inpatient care in the Child Psychiatry Unit costs more than £20,000 per episode. It might be argued that sending the child on a world cruise would produce more psychological benefit. Child and adolescent psychiatrists should turn their minds to evaluating their work (audit) in order to convince purchasers to support this form of therapy. Beneficial outcomes are difficult to determine in other areas. The physical health of low birth weight babies may be influenced by maternal smoking, and neonatal infections by the proportion of mothers who breast feed. Setting up controlled studies to examine these hypotheses would take many years so purchasers have to take decisions on the basis of probability of benefit. This means ensuring that the correct processes are in place to increase the chance of beneficial outcomes.

Perhaps the more difficult decisions for purchasers lie in the area of patient advocacy. Those working in the Health Service all have firm ideas who the good clinicians are. If anyone in a medical family needs specialist care they know whom they would wish to see the sick member. We should do not less for our patients. Where clinicians have unacceptably high complication rates, this may be tackled through the purchasing process. Our approach in Glasgow to patient advocacy centres on our belief that patient concerns about medical treatment relate to three questions: 'Will I be okay?', 'Will it hurt?' and 'Will I get the correct treatment?' Clearly, the first concern is for their prognosis and to meet this we are assessing how well providers inform patients as to their illness and the treatment they will receive.

Secondly, patients are concerned about pain, discomfort and loss of dignity and we are monitoring these outcomes by asking patients about their experience of hospital care. A recent study carried out in an adult unit demonstrated that 40 per cent of patients with acute abdominal pain received no analgesia after diagnosis. The 60 per cent that were given pain relief had to wait for it until between 40 minutes and two hours after diagnosis. This is unacceptable. Similarly, in a paediatric unit there was evidence that a significant proportion of staff felt that children experienced less pain than adults and many felt that post-operative pain was inevitable and could not be eradicated. Staff need training to improve their delivery of basic services. Studies in the USA have suggested that up to 4 per cent if in-patients experience significant harm as a result of poorly delivered treatment. 25 per cent of these patients are left with serious disability. The American experience has been that clinical risk management programmes, which examine complications in operating theatres and other accidents suffered by patients, will reduce the magnitude of this problem.



Finally, patients are concerned about poor clinical performance. One area where routine medical audit generates information that leads to tension between purchasers and clinicians has been that of an individual clinician's results. An audit of surgeons operating on colorectal cancer in Glasgow during the 1970s demonstrated large differences in mortality rates and the rates of complications such as wound infection, post-operative peritonitis and wound dehisence. Most surgeons delivered satisfactory results but some were clearly better and a few were significantly worse than their peers. The variation in five-year survival, once all other case mix factors were allowed for, was highly significant and dependent on which surgeon carried out the primary procedure. Survival in rare cancers such as teratoma of the testes and malignant melanoma also varies according to the treatment received.

These analyses should be used to influence the purchasing of health care. This is relatively easy when one is dealing with a rare disease; re-directing five of six patients a year to a single centre is relatively non-threatening. When dealing with hundreds of patients treated for more common conditions that degree of flexibility may not be possible. A more useful approach would be to examine how the best clinicians achieved their results and the worst clinicians should be given an opportunity of learning from the best. The role of the Royal Colleges in developing guidelines and monitoring their application cannot be understated. Purchasers must win the co-operation of the medical profession in order to help them deal effectively with variation in outcome. The profession must, however, show itself willing to become involved in these hard decisions. Adam Smith said that 'When two members of any profession get together, the result is a conspiracy against the public'. If medicine is to avoid this accusation, Colleges must show themselves willing to work with purchasers in their role as patients' advocates.

*Pharmacoeconomics*

*Mr N. E. J. Wells (Glaxo Pharmaceuticals UK Limited)* illustrated that the net real growth in NHS expenditure over the past 10 years has been relatively small. Everyone is aware of the current resource constraints. The pharmaceutical industry is taking the issue of outcomes of treatment and economic analysis in making choices about treatment very seriously. There is a constant pressure on expenditure driven by the need to treat increasing numbers of patients over the age of 75 years, by the advances in technology which usually lead to more expensive treatments and can also increase the number of patients for whom it becomes possible to provide effective treatment, and by a general increase in expectation for improved health from the public. It is difficult to quantify whether enough is being spent on health care. The phenomenon of waiting lists and indications of health needs that are not being met does suggest that the smaller proportion of gross national product spent on health care in this country, compared to many other western nations, means that we have to make choices about cost effective health care.

The growth in cost of the NHS is illustrated well by the growth in the costs of prescribing. In 1991 this was more than £4 billion, 80 per cent of which was spent in general practice. The number of prescriptions and the number per head of population has risen. For example for patients >65 years an average of 13

prescriptions in 1980 had risen to 18 by 1990. Data from the General Household Survey has shown that more patients with acute and chronic illness now consult their general practitioner. In recent years there has been a deliberate attempt to shift costs from the secondary to the primary sector. The results of clinical research often push costs up; for example the rising use of beta blockers in the 1980s was partly in response to the trials suggesting their advantage to patients who had suffered a myocardial infarction. Improvements in understanding of disease processes and of the ways to control them also lead to increases in prescribing. But has the growth in spending produced better outcomes? Wells conducted a study in the mid 1980s in which he tried to examine whether prescribing in primary health care had had any impact on the costs of providing secondary care. The data indicated that the availability of medicines from the 1950s to the 1980s was associated with improvements in care in general practice which contributed to a saving of about two billion pounds through reductions in occupied bed days in hospitals.

Current research is focused on more short term outcomes. The cost of introducing new drugs is about £120 × 6. As well as providing data on the efficacy, safety and the quality of a new drug, companies were now providing data on the economic and social benefits likely to be gained. Indeed in Australia the authorities now insist on companies adhering to firm pharmaceutical guidelines and providing economic data to justify inclusion of a new drug in the reimbursement scheme. In assessing the costs of a new drug for the Health Service it is now important to consider not only the direct costs and the costs of using the drug (syringes, needles, nursing time etc) but also the failure costs of providing alternative treatment. Although this data is relatively easy to gather for drugs used in short term illnesses such as many infections, it is much harder to get data for drugs intended for use over the longer term. It is also recongnised that drug evaluation should be focused on a patient and be related to either symptoms, ability to work or participate in leisure activities; it is not always easy to determine these. Although the randomised control trial is widely used, it is not ideal; it may be restrictive in choice of patients and it is too short term. For some drugs it is clear that the costs incurred now may not produce benefits until much further into the future, but it is difficult to incorporate this thinking into current NHS financial systems. The pharmaceutical industry is interested in a general ability to use instruments like SF36 which they are now helping to develop together with specific questionnaires. There are still methodologies and other issues to be resolved respecting culture as well as language, clinical validity and need for widespread acceptance. Pharmacoeconomics should therefore be seen as an evolving science but one that can clearly contribute to the debate on cost and outcomes.

## *Session IV*

### WHAT ARE WE ACHIEVING NOW? PRACTICAL EXAMPLES FROM AROUND THE UNITED KINGDOM

*General practitioner*

*Dr M. Lough (Associate Adviser in Audit, University of Glasgow)* described some general practice initiatives in the west of Scotland. Setting appropriate standards



and reorienting thinking to see individuals as customers as well as patients had been the hardest tasks. GP appointment systems have been radically reviewed and simple changes in practice organisation shown to reduce waiting times for patients. Surveys of their patients disclosed gaps e.g. lack of attention to stains on the clinic carpet and failure to provide children's toys in waiting and consultation rooms.

GPs are interested in audit to solve problems that they themselves have identified. One practice, concerned about the clinical checks given to women on hormone replacement therapy, decided to use a flow chart in the notes. This led to an immediate improvement in performance that is likely to be permanent. Some practices are now using standard questionnaires to obtain feedback about what patients thought of the consultation and the premises. More ambitions projects included assessment of the needs of diabetic carers and ways of integrating the care of diabetics with the secondary sector. About 60 per cent of practices were taking part in this study which was now in its second year.

Dr Lough has a particular responsibility for helping training practices and GP trainees to develop an audit culture so that trainees are helped with an audit project and can see the value of regular audit in their own work. A training audit package uses epilepsy as an example to explore the difficulties that patients and their carers experience. Time management stands out as another issue that all doctors have to grapple with. At the interface between primary and secondary care. GPs and consultants in local hospitals were using a standard questionnaire to look at the quantity and quality of services that each provides for the other. GPs wanted improved services from the local hospital and consultants wanted improvements in referrals from GPs. The difference between the expectations of each group and the results can be presented on a chart which illustrates how far either side has to go. It provides a useful sharing of information for the benefit of patients. In conclusion, Dr Lough thought that doctors were now better at discussing errors in a confidential setting and in taking action to correct these but urged that purchasers and others should remain patient.

*Acute geriatrics*

*Dr I. Philp (Lecturer in Geriatric Medicine, Southampton University)* described the research and development programme he has been undertaking in Southampton in acute care geriatrics. Physicians in geriatrics were interested in outcomes for their patients but also demonstrated concern for the family, for aspects of quality of life and social functioning. The WHO themes of resource utilisation, patient satisfaction, risk management and outcomes helped to guide outcome measurement. For example records of adverse events, satisfactory resolution of acute illness, patient satisfaction, measurements of disability, rating of scales, activity in daily life, rates of referral to institutions or ongoing care and measures of quality of life were all available for use. One of the difficulties is that what seems a good outcome may be different for doctors and patients. In one survey both groups rated quality of life and disability highly, but patients and their carers gave higher ratings to mental health and waiting time, whereas doctors gave a higher rating to mortality. Outcomes had to assess both the professional performance of the care team as well as the satisfaction for the patient and carers. There was difficulty in choosing an appropriate scale from the many available.

His unit had decided to use the Philadelphia Morale Scale and had applied this

to 120 cases looked after by three multi-disciplinary teams. The issue addressed was the cost of data collection. They found that nurses could adapt well and collect the data but other groups of staff had difficulty with this. Information collection was reliable if it was integrated into ordinary practice. An audit assistant was helpful but the conclusion was reached that data could be collected provided it was limited in scope and done as part of routine work. Routine work generated data which enabled them to look at some overall measures of performance and to set targets for the future. He emphasised that this approach was much better than waiting for resource management to provide a system.

*Integrated primary and secondary care*

*Dr G. Douglas (Consultant Physician, Aberdeen)* described the GRASSIC project (Grampian Asthma Study of Integrated Care) a scheme in the Grampian Region between general practice and local outpatient chest clinics established in 1988. He and his colleagues in the thoracic medicine unit recruited 838 patients with asthma referred to their chest clinics in Aberdeen, Elgin, Banff and Peterhead. All of these patients had shown at least 20 per cent improvement in pulmonary function from inhaled bronchodilators and/or steroids, confirming the diagnosis. The 297 principals in general practice in Grampian were invited to take part in a randomised study of conventional clinic care versus an integrated care scheme. Only one GP refused. There were 90 patients whom the consultants felt could not be randomised, usually because of the severity of their asthma; 349 patients were randomised to the integrated care scheme and 363 remained in conventional clinic care, attending outpatients every three months. This new integrated care scheme consists of sending computer derived letters to each patient and their GP every three months asking the patient to attend for follow-up and requesting both to collect certain data. Questionnaires from both the patient and GP are returned to hospital where the computer database is updated. This clinical data is scrutinised by the patient's consultant who can suggest action to the GP, recall the patient to the clinic or allow the patient to go on the next three month surgery review. Sixty per cent of the three monthly questionnaires sent to the patients were returned together with 72 per cent of the questionnaires sent to GPs. After one year each patient was seen again by their consultant at outpatients; prior to this the GPs were sent a questionnaire asking them which form of care they wished for that patient in the next year. Ninety-two per cent of these annual questionnaires were returned. The outcomes examined over the year of the study included quality of life scales, the patients view of control of their asthma, the rate of GP consultations on asthma, prescriptions of bronchodilators, inhaled and oral steroids, hospital admissions and costs.

In general there were very few differences in the clinical or quality of life outcomes between the integrated care and conventional clinic care groups. The chest consultants found this reassuring as it implied that there was no detriment to patient care by moving to this new integrated care scheme. At the end of the study the GPs were offered the options for their patients of remaining in the scheme, returning to conventional clinic care or discharge from specialist supervision. The GPs were generally very positive about this new scheme and in 70 per cent of cases they wished their patient to remain in the schemes after the end of the study year, 20 per cent wished their patient to be discharged and only



8 per cent wished their patient to be returned from integrated care to more conventional clinic supervision. In addition, for 58% of those patients randomized to conventional clinic care, their GP wished them to be changed to integrated care at the end of the year. The patients also found the scheme beneficial and the rating of their control of their asthma showed a higher score in integrated care. There was little difference between integrated and clinic care in costs to the hospital or to general practitioners but the estimated annual saving to a patient of being in integrated care was approximately £40, due largely to reduced travelling to clinics and days off work. This integrated care scheme is now established in Grampian as an alternative form of management for outpatients with asthma and the number of patients enrolled had risen to 525 by September 1993.

The success of the GRASSIC project has led to the formation of a local implementation group. GPs, Health Services researchers and local chest consultants have been able to agree on a protocol covering a review of asthma in general practice, the reasons for referral to hospital and discharge from outpatients, the indications for entry into integrated care and of in-patient access for those with severe acute asthma.

*Acute stroke*

*Dr M. Dennis (Senior Lecturer in Stroke Medicine, Edinburgh)* described outcome measurements after stroke. Each year in the UK 140,000 people suffer a stroke and 55,000 die from one. Measuring relevant outcomes is important for the prognosis, for improving the quality of care through clinical audit and for examining the effectiveness of stroke services and new treatments. The outcome of a group of patients with stroke depends upon the case mix of the patients, the methods of measurement and the effectiveness of the clinical service. Also, outcome should be measured in a large enough and unbiased sample of patients so that differences between services or different treatments can be compared reliably. If few patients are studied, bad outcomes may reflect bad luck rather than bad care. The choice of outcome measure will depend upon the intervention one is interested in; the outcome measure should be sensitive to change and responsive to one's intervention. After a stroke about 25 per cent of patients die in the first six months and about 45 per cent make a good recovery and are independent. The remainder have a relatively poor outcome. Mortality, as an outcome measure, is inadequate since by decreasing mortality one may increase the proportion of those who survive with a poor outcome and this would not be our aim. Reducing mortality and increasing the number of patients with a good outcome would clearly be better. Complications of stroke, e.g. pressure sores and painful shoulders, are a possible outcome measure but are difficult to define and measure and are uncommon; also measurement is insensitive. However, complication rates might be useful to alert us to major problems in a stroke service and thus to lead on to further audit. Destination on discharge is affected by many variables such as the availability of private nursing homes sso that is not easily used to compare services. Functional status at discharge may be useful but is open to manipulation. By delaying discharge, functional status will inevitably improve. The functional status at a fixed point, e.g. six months after stroke is of more use. The World Health Organisation (WHO) describes disease in terms of pathology, impairment, disability handicap and one of these could add quality of life.

Unfortunately, few instruments to measure these facets of outcome have been shown to be reliable and relevant to patients with stroke. There are a large number of 'stroke scores', which include some elements of the neurological examination and measures of disability and assigning arbitrary weightings produces a score. These scores do not describe individual patients and are usually of little clinical relevance. Two patients may have an identical score but clinically may be quite different. ADL scores, e.g. the Barthel Index, have a problem with a ceiling effect because they do not include important related disabilities such as cognitive deficits, language problems and fits. Stroke is a very heterogeneous condition, the most important factors in determining the outcome being the patient's pre-stroke status and the type and severity of stroke. If we are to use outcomes to detect differences between the effectiveness of services, we need to take into account differences in the case mix. The case mix, therefore, has to be described in terms of factors which predict a particular outcome after stroke. To make valid comparisons large numbers of patients have to be studied which mean that outcome instruments and case mix descriptors need to be simple and practical to collect. Techniques which depend on a face to face interview and neurological examination would be expensive and time consuming. More appropriate methods might include the use of postal or telephone questionnaires. Similar methods of measuring outcome are currently being used in the International Stroke Trial which plans to randomise 20,000 patients in 35 countries. Three simple questions divide patients in this study—those who have died, those with a poor or indifferent outcome, and those with a good outcome. In the future we shall strive to develop a minimum data set which includes measures of case mix, easily defined complications such as fractures and bedsores, discharge destination and a simple functional outcome at six months after stroke. However, even with audits of very large numbers of patients caution will be needed in the interpretation of data because even with sophisticated statistical modelling adjusting for case mix is an imprecise science.

## *Session V*

### WHERE DO WE WANT TO GO AND HOW DO WE GET THERE?

*Dr K. Staehr Johansen (World Health Organisation, Copenhagen).* WHO was founded to address the global differences in quality of care affecting health status—morbidity, mortality and life expectancy—between countries and to seek ways to improve these. WHO has always used existing knowledge to try to solve problems and the elimination of smallpox and in some countries and regions, poliomyelitis, has demonstrated the strength of this approach. WHO encourages governments and all health providers and health professionals to set policies, to develop these into strategies and then to set targets to be achieved. In all of this work, it is important that standard denominators are used so that, for example, the results for Scotland can be compared with the results from other European countries. The differences in outcome in common conditions are large both within and across countries, which should encourage us to look at the delivery of care. For example, a study in Sweden showed that only 15 per cent of suicide victims had been given any anti-depressive treatment (and when so, not necessarily correctly) and yet a high percentage had been in contact with the health services the month prior to their death. Swedes, therefore, have now set themselves a more stringent target for the treatment of patients with depression



and with significant suicide risks. This is one of the few countries in Europe to have reduced the number of deaths from suicide.

Member governments to WHO have agreed targets which in the UK have been given a local meaning through documents such as 'Health of the Nation'. A great deal of public information is available now and can be examined and acted upon. One of the ways of avoiding problems of case mix is to look at cases with 'no mix', i.e. an average of patients or populations. Even with this approach there are still major differences in perinatal mortality across the UK and even within regions. The UK, Scotland in particular, has one of the highest obstetric intervention rates in Europe and yet countries with much lower intervention rates may have as low perinatal mortalities. In Belgium a high complication rate was associated with the use of epidural anaesthesia and has dropped remarkably as a result of changing the techniques of application. A reduction of the intervention rate has been noted. In Europe, different groups or individuals may be providing good solutions to health problems, but how can this rich source of information be tapped? Real time knowledge on best quality in relations to health care is difficult to find and can only be identified routinely if modern information technology is exploited.

There is a great deal of assessment work done, but much less data available on health gain, and as yet little correlation demonstrated between health gained and money spent on technology. Life expectancy is nearly as high in Albania, one of Europe's poorest countries, as in the USA or UK. Within Europe we should be striving to get common data bases and data sets for the important issues such as quality of life, well-being, health status in relation to acute and chronic diseases, and for individuals, groups and for the population as a whole. This may allow for finding the best practice and then to look at the process of that care to see how this experience might be adapted and used successfully elsewhere. Achieving constructive use of the best practice is the hardest task and perheps it is important to involve the whole community, e.g. schools, parents, health authorities, consumer groups, third party payers, the mass media and others in achieving continuous quality development.

Diabetes mellitus provides a good model of how these ideas can work. The Euro DiabCare Register is an attempt to get a common European database with common quality indicator data sets. The St Vincent's policy was first agreed upon and it established time limited general policies and targets for all involved. Each country is now setting in place strategies and targets for achieving its aims. Already it is apparent that there are huge differences in complications between apparently similar patients treated for 10 years with insulin. Within a country, complications like retinopathy may vary from 20 per cent to 58 per cent in different regions and this seems to be explained partly by the level of metabolic control. There are also large variations between countries and clinics in the proportions of patients who smoke, and smoking is recognised as a major risk factor in people with diabetes for late complications, e.g. amputation rates. A particularly good diabetic centre in Germany has recently 'twinned' with a centre in Moscow to provide education programmes for staff and patients. The outcomes in Moscow have subsequently improved, and the Moscow clinic is now working with a clinic in Georgia to transfer this experience. This exemplifies the viability of the approach of the 'Health for All' European policy and strategy in one area of health care, and results from other areas are now being added.

C. P. SWAINSON