tional needs should be taken up, and the development of a continuing medical education industry based on uncertain evidence of effectiveness, as has occurred in other countries, should be avoided. Linking audit and peer review to continuing medical education would allow anxieties about the effectiveness of continuing medical education to be addressed, would permit local ownership, and would allow doctors to choose learning methods that both meet their own educational needs and fit in with their personal learning styles. Such a link would avoid the need to introduce sanctions as, with audit as the monitoring instrument, participation and the attainment of satisfactory standards of performance would be documented. The emphasis on local provision would also help to overcome the conflict of interests that might arise when a royal college both approved or accredited continuing medical education programmes and also provided continuing medical education.

Conclusions

It is and always has been a fundamental requirement for any professional to keep up to date in his or her profession. Like breast milk and a high fibre diet,

continuing medical education is without doubt good for use. Why then has activity erupted among those who wish to manage, control, and codify continuing medical education? Britain is rapidly moving down the road, well trodden in other countries, towards a rigid, formalised, and policed continuing medical education industry. Continuing medical education is in danger of becoming a behemoth, a lumbering, unbending monster, and this burgeoning industry is based on assumptions that remain unproved. A shift from centralised to local provision linked to peer review and audit will avoid these hazards.

- 1 Miller G. Continuing education for what? *Journal of Medical Education* 1967;42:320-6.
- 2 Royal College of Anaesthetists. *Continuing medical education*. London: RCA, 1993. (Report of a working party.)
- 3 Illinois State Medical Society. Mandatory continuing medical education. *Illinois Medical Journal* 1988;173:273-6.
- 4 Lewis CE, Hassancin RS. Continuing medical education—an epidemiologic evaluation. *N Engl J Med* 1970;282:254-9.
- 5 Davis DA, Thomson MA, Oxman AD, Haynes RB. Evidence for the effectiveness of continuing medical education. *JAMA* 1992;268:1111-7.
- 6 Rogers EM. *Diffusion of innovations*. 3rd ed. New York: Free Press, 1983.
- 7 Kerrison S, Packwood T, Buxton M. Monitoring medical audit. In: Robinson R, Le Grand J, eds. *Evaluating the NHS reforms*. London: King's Fund Institute, 1994; 155-77.

(Accepted 2 February 1995)

Management for Doctors

The importance of quality: sharing responsibility for improving patient care

Fiona Moss, Pam Garside

This is the fourteenth in a series of articles dealing with issues arising as clinical practitioners increasingly take on managerial roles. The series is edited by Jenny Simpson, chief executive, British Association of Medical Managers. The book of the series is available from the BMJ Bookshop

In health care quality is usually understood in the context of "clinical quality" and an implicit distinction is drawn between managerial and clinical activity. The separate introduction and development of quality initiatives within the NHS has contrived to accentuate the different notions of quality that follow traditional "tribal" divisions within hospitals. Nurses often led quality assurance programmes, while doctors took up medical audit, and managers found that risk management programmes had something to offer their professional concerns. The recent directives to develop clinical audit go some way to addressing these divisions. But the onus of meeting the patient's charter initiatives has provided yet another separate focus for quality improvement within hospitals.

In other organisations quality improvement is often linked to the concept that quality should be a characteristic of the whole organisation. The process of quality improvement and quality control in the industrial and business world is dominated by the theory and application of total quality management (TQM). This approach to management developed after the second world war when Japanese industrialists, keen to compete with other economies, engaged American experts to advise on the application of statistical techniques to the production process. These advisers, who included W Edwards Deming and Joseph Juran, understood that documenting the technical quality or the specifications of components on a production line would not in itself produce lasting improvement in the quality of production. Instead, by introducing principles and techniques drawn from a wide range of disciplines, they advocated the development of an internal approach to quality improvement, where everyone in the organisation is part of a continual drive to do better. Together, these principles and techniques are described as TQM. The successful

results of the application of this approach to manufacturing by the Japanese are well known.

Much has since been written on TQM and its philosophy. Some of the characteristics of TQM are shown in the box. To doctors and others working in health care much of this may be interpreted as jargon: as an approach to quality that originated in the industrial world, it has little relevance to the work of health care where customers would often rather not have the need to seek our services. The disadvantage of the divided views and approaches to quality that are endemic within the NHS is that the potential capacity of any group alone to improve quality is limited. Any approach to quality improvement in health care, to have any chance of success, has to be integrated.

The principles of TQM are far reaching and its introduction into a hospital or community trust as a mechanism for quality improvement would require extensive project management. It would also require long term major organisational and cultural changes, and would not be seen to satisfy the many short term pressures to improve quality that trusts are now experiencing. Nevertheless, there are lessons that can be derived from a TQM approach to quality within an organisation that are essential for developing an integrated approach to quality improvement within health care. Instituting any aspect of TQM will require trust and understanding between managers and clinical staff.

In this article we look at the necessity of management skills in the pursuit of improved quality, including the quality of clinical practice, drawing on some of the lessons from TQM. The discussion is based on a case study that incorporates three separate scenes from one hospital. We do not aim to provide all the answers, but rather to suggest approaches to improving the quality of care through a wider organisa-

Central Middlesex Hospital
NHS Trust, London
NW10 7NS
Fiona Moss, consultant
chest physician

Imperial College of
Science, Technology, and
Medicine, London SW7
Pam Garside, visiting fellow

BMJ 1995;310:996-9

tional perspective. We deliberately do not discuss all the questions raised by the case study, preferring to leave much for discussion by managers and clinicians working together in provider units.

Case study

Scene 1—Mr Y, the outpatient services manager, has been allocated the task of meeting the patient's charter requirement that people should wait no longer than 30 minutes beyond their appointment time for an outpatient appointment. In one surgical clinic people waited up to two hours to see a doctor. The results of a survey done by MRY had been sent to the consultant surgeon, who had written back expressing irritation and saying that if management wanted him to see more patients he needed another registrar. Meanwhile in the diabetes clinic patients were apparently being seen within 10 minutes of arrival. These figures had been collected by members of the diabetes care team, who set and monitor their own standards, but Mr Y felt that these figures could not be correct and planned to collect his own data on that department.

Scene 2—Dr X, the clinician who leads audit in the directorate of medicine, is concerned that, although three audits of the care of patients with myocardial infarction have been carried out and the results fed back to the junior staff, there has been no improvement in two important aspects of medical care. The median time between patients arriving at the hospital and receiving streptokinase remains at one hour and 20 minutes, and only 50% of patients discharged after myocardial infarction are discharged on a regimen of aspirin and a β blocker.

Scene 3—The consultant urologists have received the length of stay data for patients admitted for transurethral prostatectomy from the surgical business manager. They have been asked to explain the range—from five to 14 days, with a median of seven days. The urologists' first concern about these data was their accuracy. Their second was that they were already working as hard as they possibly could, as were their junior staff.

The main purchasers of care are keen to work with the hospital to improve performance in all these areas. Other possible suppliers of the surgical and urological services exist; this hospital could therefore lose some of its case load in these specialties.

The problem

These three scenes within one hospital describe the effect of dividing the responsibility for quality into sections and effectively creating systems of external inspection within an organisation in the drive for quality improvement. All the evidence from work on quality improvement suggests that this approach will not work. The doctors in this hospital quite understandably feel threatened by receiving data that they have had no part in gathering and the implicit expectation that they have to solve "it." Mr Y is getting nowhere with waiting times in surgical outpatients and Dr X is unable to improve standards of care for patients with acute myocardial infarction. No one seems to be looking beyond their own territory to find ways of improving established deficits in care, and there is an implicit assumption that the data themselves will drive quality. In none of the scenes has the problem been described in terms that might suggest a solution.

Reducing waiting times in outpatient clinics, raising the standards of medical care of people with acute myocardial infarction, and minimising bed stays for patients admitted for transurethral prostatectomy are, at one level, three separate problems that need to be

addressed independently by three different groups within the hospital. But there are themes common to all three: any solution will include a team approach; the needs of customers have to be understood; processes need to be changed.

THE MANAGERS' ROLE

The interest of the purchasers has forced the hospital to face up to the issues described in the case study. External pressures have also forced the hospital to look carefully at its mechanism for quality improvement. Managers within the hospital have the task of working with clinicians and others to improve performance in these individual areas. They also need to consider the wider question of how to make the organisation less divisive. These external demands have provided the opportunity to develop some cohesion among different groups within the hospital.

Putting the patient/customer first

A fundamental principle of TQM is to put the customer first and to define quality in terms of meeting the needs of customers. In each of the scenes in the case study, improvements in measurable aspects of care would clearly benefit patients/customers. The paucity of choice available to customers of health care and the dearth of information given to them about the medico-technical aspects of their care highlights differences between the NHS and other organisations. The people waiting for two hours to see a surgeon in any other queue of similar length would probably have gone elsewhere. And if people with acute myocardial infarction knew about the importance of receiving thrombolytic treatment, and of the benefits of β blockers and aspirin, they would insist on receiving effective care. The new external pressures exhibited by the purchasing function and the patient's charter may help those working in health care to focus more on the needs of patients and other customers of health care.

TQM also recognises and emphasises the importance of internal customers within organisations. We are all, to some extent, suppliers, processors, and customers of each other's services. In this case study the surgical business manager is the supplier of information to the urologists. But the reflex doubts about the accuracy of the data suggest that in the planning of the collection of data about the length of stay of patients admitted for transurethral prostatectomy, only scant attention was paid to involving the urologists and identifying them as "important" customers.

Understanding processes and looking at the whole picture

TQM emphasises the importance of understanding the complexity of the processes which make up the systems for work, and emphasises that problems with quality are caused by flaws in these processes and not the people who work them. Each of these individual scenes in the case study is described one dimensionally, from the point of view of a particular service, and without an organisational perspective. When they are seen this way, only a limited number of options are available. The medical director and other managers need to understand each problem fully in terms of the processes or the series of steps that are needed—for example, to admit, diagnose, and treat a person admitted with acute myocardial infarction—in order to look for ways of improving the quality of care. Managers need to help the participants—consultants, junior doctors, nurses, other clinical professionals, clerks, and managerial staff—to look at exactly what is being done to whom, by whom, and when.

The waiting times in the surgical outpatient clinics are unacceptable and this suggests that the clinic is poorly organised. Focusing on a single aspect of the process, such as appointment scheduling, or the work rate of the junior staff, or the time keeping of the consultant, or even the appointment of another registrar, would be unlikely to produce any major improvements. Many of the processes that are part of outpatient care can contribute to excess waiting times in clinics or waiting for first appointments. Close attention to the details of the process, some of which are a matter of clinical judgment—such as decisions about the necessity for follow up appointments—can significantly improve these aspects of outpatient practice.¹

If the outpatient service manager could overcome his misgivings about the performance of the diabetes care team he would be able to see how another department, working together as a team, improved clinic waiting times. Two years ago people waited in the diabetes clinic for up to three hours and at times there were more people waiting than there were seats available. Now patients are mostly seen within 10 minutes of arrival.

Some features of diabetes care do not apply to surgical outpatient care, but much is relevant to the organisation of many outpatient services. The changes made to the organisation of outpatient care for people with diabetes resulted from a detailed look at the processes of care within that department. The modifications included dividing the work into distinct groups, such as seeing new patients separately from follow up patients; giving appointment times in multiples of five minutes to suit predicted need; and incorporating the skills of nurse practitioners into the process of outpatient care.

The structure produced by these changes in the diabetes clinic has the potential to allow guidelines to be introduced to help junior doctors and improve the training of junior staff in the outpatient care of patients with diabetes. Of course, the structure of surgical outpatients is not the same as that of diabetes care. But once those who work in the surgical department look closely at the function and the processes of their outpatient clinic, inefficiency and wastage will be spotted and a structure that works can be developed.

Divisions between managerial and clinical activity

Doctors and other clinical professionals are the people who can make clinical decisions. Managers rely on their expertise and professional judgment. The

division between managerial and clinical areas of responsibility is assumed to be clearcut. But there are interfaces where a managerial view is needed to expedite a clinical resolution. The issue of the relationship between clinical and managerial activity is not one of managers straying into professional territory, but rather a mutual understanding of the need for sound management to underpin clinical activity.

IMPROVING THE "DOOR TO NEEDLE TIME" FOR THROMBOLYTIC DRUGS

In this case study physicians have clearly articulated the importance of giving thrombolytic drugs to patients with myocardial infarction as soon as possible and making sure that each patient is discharged on a regimen of β blockers and aspirin. But, despite extensive audit, they have not managed to reduce the time it takes for patients admitted with acute myocardial infarction to receive thrombolytic drugs ("door to needle time"). Essential to the improvement of this aspect of clinical care is a close examination of the organisation of care of patients admitted with myocardial infarction. At this hospital two factors were obviously affecting the clinical management of such patients. Firstly, it had always been hospital policy for thrombolytic drugs to be given in the coronary care unit. But the transfer time from the accident and emergency department to the coronary care unit could be as long as 90 minutes. Secondly, all patients had to be seen by the medical registrar before thrombolytic treatment could be given. But the duty medical registrar was often in the outpatients clinic when also "on emergency take." Improvement in this aspect of the quality of clinical care will depend on substantial changes in the organisation of emergency cover. Simply feeding back audit results or issuing guidelines without attending to the organisational details will not trigger change. By changing the processes of care, one unit has reduced the "door to needle" time for thrombolytic treatment for some groups of patients from over two hours to 38 minutes.²

Identify team roles and professional drivers

Building effective teams is an important part of the process of quality improvement in all three scenes described in the case study. Drawing attention to the very different roles which people adopt within groups and teams and understanding how to develop and enhance group work through recognising these differences is part of management practice.³ Identifying the motivation of different team members and colleagues is critical as consensus cannot be built by ignoring strong individual motivations. For example, what drives urologists to manage their patients in such a way that the length of stay for some patients is twice the median? There may be justifiable reasons, but they must be examined and perhaps changed. Working properly as a team is crucial to any notion of quality improvement.

LENGTH OF STAY AFTER TRANSURETHRAL PROSTATECTOMY

The urology practice of the case study illustrates an old style of approach by the clinicians. The urologists are, of course, right to challenge the accuracy of the data. But once the data are validated, to react with the "we are all working too hard" routine is inappropriate and is not relevant to the issues presented. Looking at the problem in terms of TQM and serving the customer, the current length of stay after transurethral prostatectomy seems arbitrary. Managers have a role in facilitating the team of clinicians, including nurses and junior and senior doctors, to analyse the process of care. In the case described here all the doctors and nurses responsible for patients undergoing trans-

Some of the characteristics of TQM

- Making customers' needs a priority for everyone
- Defining quality in terms of customers' needs
- Recognising the existence of internal customers and suppliers
- Examining the process of production rather than individual performance for explanations of flaws or poor quality
- Using sound measurement to understand how to improve quality
- Removing barriers between staff and promoting effective team work
- Promoting training for everyone
- Involving the whole work force in the task of improving quality
- Understanding that quality improvement is a continuous process

Key point summary

- Quality improvement is on the agenda
- Total quality management has a role in the NHS
- Problems with quality are often the result of flawed processes rather than incompetent individuals
- Sound management underpins clinical activity, and the two combined effect improvements in quality
- A collective view of care requires input from all relevant professionals
- Good, reliable data on the processes of work are vital
- Improving quality is a continual process

urethral prostatectomy came together to scrutinise their clinical practice. During these discussions it became apparent that there were minor differences in the preoperative and postoperative routine of patients undergoing the procedure looked after by the two consultants. There was no clear set of guidelines, and nurses had to wait for ward rounds for instructions to remove catheters. This delay accounted for most of the variation in length of stay. At the end of several weeks of discussion and group work the two urology firms emerged as one urology team. Conditions for removal of catheters on a fixed postoperative day had been agreed and, eventually, protocols for care of patients after transurethral prostatectomy were written and agreed. The team is now looking at the possibility of producing protocols which would serve as patient notes for both doctors and nurses.

Using this approach allowed the median length of stay after transurethral prostatectomy to be reduced, and the urology team was able to produce a fact sheet for men undergoing this operation explaining the unit's routine care. This approach to reducing in-patient stays may sound straightforward, but the difficulty and pain experienced in the discussions that were needed to get this far should not be disguised nor dismissed. Encouraging and facilitating these discussions and helping with the difficulties and apparent impasses that occur is an important function, for which particular skills and aptitudes are needed.

A collective view of care, or locally developed multiprofessional guidelines, needs input from all the relevant professionals. It is not something that can be devised by managers. Such views should include those aspects of care that, based on good evidence, have important influence on outcome. Guidelines are most likely to work when developed by the team that will use them, and, some say, guidelines for medical aspects of care might function better if incorporated into multidisciplinary care plans.⁴

The importance of reliable data

Each of the scenes in the case study includes a measurement, such as length of stay. One of the lessons to be derived from TQM is that good, reliable data on the processes of work are necessary for quality improvement—for detecting problems; for identifying the faults in the processes; and for assessing progress. Although Dr X, in his role as clinical audit chief, had been unable to improve the timing of the administration of thrombolytic treatment, the data that had been collected were central to identifying the problem. But producing data and simply feeding them back had not promoted any change in working practice or improved quality. Moreover, it is important to make sure that data collection is one of the functions of the whole team. Presenting a surgeon with his or her outpatient waiting times without previous discussion and agreement is unlikely to have a positive effect.

Re-evaluating the problems

The problems raised in the case study do not have a single answer that, once discovered and put into action, will provide a permanent solution. One of the lessons of TQM is that improving quality is a continual process which needs to become part of the routine of an organisation. This can be illustrated by looking at one of the examples in the case study, and predicting further developments.

FURTHER IMPROVEMENT IN "THE DOOR TO NEEDLE TIME" FOR THROMBOLYTIC DRUGS

Changes in the medical registrar rotas, including a fixed take day and allowing thrombolytic treatment to be given in the accident and emergency department, allowed the median "door to needle" time for thrombolytic treatment to be reduced to 40 minutes. An examination of the processes of care at this stage clearly showed that most of the delays beyond one hour were occurring in cases of diagnostic uncertainty and in older patients, because of a longstanding instruction that permission to give thrombolytics to older patients had to be sought from the registrar in the department of medicine for care of the elderly. Thus, as a consequence of improvements in this specific aspect of care, other problems are identified and changes to improve further the delivery of thrombolytic treatment can be considered.

Conclusions

Managers in the NHS are continually forced to focus on immediate solutions to problems and have little opportunity for developing longer term organisational change. Moreover, the nature of the influence of the professions within health care produces constraints which differ from those experienced in industrial organisations. But improving quality is the concern and responsibility of all those who work in health care. This includes finding ways of working together effectively. The introduction of TQM within a health care organisation would be a daunting task, and unless this was done as part of a process which involved clinicians as well as managers it would not work. Although many of the features of TQM might seem alien to clinical practitioners, there is much within such approaches to management that would be immediately applicable to health care.⁵ Quality improvement in health care is likely to be limited unless it is seen as a function of the whole organisation, and until it is realised that improvements—even in clinical quality—are most likely if managers and clinicians work together to achieve them. Managers need to explain their role and function to clinicians, and how good sound management should complement clinical practice. Clinicians need to look closely at some of their established working practices and the skills they might need to acquire to be able to work effectively in a more integrated system of health care.^{6,7}

We gratefully acknowledge the helpful comments of Mr Ian Lowdon, consultant orthopaedic surgeon and medical director, Princess Margaret Hospital, Swindon.

1 NHS Executive. Outpatient attendances. *VFM Update Plus*. No 1. September 1994. London: HMSO, 1994.

2 Nee PA, Gray AJ, Martin MA. Audit of thrombolysis initiated in an accident and emergency department. *Quality in Health Care* 1994;2:29-33.

3 Belbin RM. Building effective management teams. *Journal of General Management* 1976;3(3):23-9.

4 McNicol M, Layton A, Morgan G. Team working: the key to implementing guidelines. *Quality in Health Care* 1993;2:217-21.

5 Berwick DM, Godfrey AB, Roessener J. *Curing health care*. San Francisco: Jossey Bass, 1990.

6 Berwick DM, Enthoven A, Bunker JP. Quality management in the NHS: the doctor's role—I. *BMJ* 1992;304: 235-9.

7 Berwick DM, Enthoven A, Bunker JP. Quality management in the NHS: the doctor's role—II. *BMJ* 1992;304:304-8.